

Navigating Conflict and Contention in Coal Country: The Case of Grassy Mountain Mine

by

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Abstract

Although oil and gas overshadow coal mining in conversations about fossil fuels, coal still plays a significant role in Alberta's culture, economy, and energy supply. In some pockets of Alberta, coal mining is central to local communities and their future aspirations. This study uses a case study of the proposed but denied Grassy Mountain mine, and the associated Impact Assessment (IA), to understand the context of decision-making around coal mines in Alberta. After reviewing the literature on IA and my research methods in Chapter 1, Chapter 2 offers an analysis of one Blackfoot organization, the Mountain Child Valley Society (MCVS), frames the project in Blackfoot perspectives and oral history. MCVS members opposed their leadership's support for the project and utilized strategies outside the formal IA process to influence decision-making about the mine. This case highlights how community members make their voices heard independent of formal processes. Chapter Three then demonstrates how sense of place and environmental values interact with contextual factors to shape attitudes toward resource development. Looking at these nuances broadens our understanding of resource development disputes, demonstrating what is at stake beyond jobs versus the environment tensions. Although scholars have dealt with the shortcomings of IAs extensively, Chapter 4 contributes to the seldom considered risks of IAs outside of project-related impacts. Potential impacts include weakening of community cohesion, reduced feelings of safety, polarization, anxiety, and reduced trust in formal regulatory processes and governments. The focus on technoscientific approaches exacerbates tensions while understating the social impacts. In this case, the IA will have lasting impacts on individuals and communities, with broad implications for the legitimacy of environmental decision-making structures moving forward.

Preface

This thesis is an original work by Amy Wilson. The research project, of which this thesis is a part, received research ethics approval from the University of Alberta Research Ethics Board, Project Name: Environmental Decision-Making in Alberta: The Case of the Grassy Mountain Mine, No. Pro00112950. Funding for this study was provided by the Social Science and Humanities Research Council (project 435-2017-0281).

Dedication

To Rachel, for all the things you never got to do.

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I owe a debt of gratitude to many people for supporting me in this work. First, this project would not have been possible without the insights of the many research participants. Throughout my interviews, analysis and writing I have continued to learn new things and gain insights from the words of interviewees. I am so grateful for the generosity of all of participants who shared their time and wisdom with me.

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List of Acronyms

AER- Alberta Energy Regulator

CIAA- Canadian Impact Assessment Agency

CNP- Municipality of the Crowsnest Pass

EIA- Environmental Impact Assessment

FPIC- Free Prior and Informed Consent

IA- Impact Assessment

IBA- Impact Benefit Agreement

JRP-Joint Review Panel

MCVS- Mountain Child Valley Society

MD- Municipal District

OCAP- First Nations principles of Ownership, Control, Access and Possession

SARA- Species at Risk Act

SCC- Supreme Court of Canada

SIA- Social Impact Assessment

UNDRIP- United Nations Declaration on the Rights of Indigenous Peoples

Chapter 1: Introduction

Concern about climate change and its related impacts is growing globally, increasing the attention on fossil fuels' role in climate change and other environmental issues (Evans, 2008; Hayter & Barnes, 2001; Yang et al., 2018). Conflicts over fossil fuel projects are increasing as people push for a transition away from entrenched extractive industries. In this context, the governing of fossil fuels is becoming an increasing matter of concern, and questions arise about whether existing governance regimes are equipped to facilitate the necessary transition.

In Canada, much of this attention is focused on oil production, particularly in Alberta, where the oil industry is predominant. While often overshadowed by oil and gas in fossil fuel conversations, coal remains important to economies throughout the globe as an energy source and is connected to culture in coal mining regions (Bell & York, 2010; Lilford, 2020). The context of coal is quite different from oil and gas in its extraction, processing, environmental impact, and cultural associations. Mining can have significant negative impacts, and the “discovery, extraction and processing of mineral resources is widely regarded as one of the most environmentally and socially disruptive activities undertaken by business” (Jenkins & Yakovleva, 2006, p. 272). The negative environmental impacts of coal mining include adverse outcomes for human health, biodiversity, water and air quality, and wildlife habitat, in addition to being a significant source of greenhouse gas emissions (Kivinen et al., 2018; Evans, 2008; Wang et al., 2020). Thermal coal, in particular, substantially contributes to climate change (Lilford, 2020). Metallurgical coal also has a significant carbon footprint in its extraction, transportation, and as it is burned in metal-making processes (Rynikiewicz, 2008). Human health impacts of coal mining include respiratory disease and higher cancer rates (Evans, 2008; Yang et

al., 2018; Wang et al., 2020). Where attempted, reclamation after resource extraction is incredibly challenging and seldom successful (Baker & Westman, 2018).

On the other hand, coal mining is central to the economy in many rural and developing regions. Coal continues to be used extensively globally, primarily for energy generation (thermal coal) and steelmaking (metallurgical or coking coal). In addition to the energy it generates, coal provides employment, tax revenue and investment in local economies. As stated by Frickel & Freudenburg (1996), “Residents and leaders of rural or less-developed regions of the world often see the extraction of natural resources as providing an obvious antidote to rural poverty” (p.444). Coal mining also has social benefits where coal mining is embedded with local culture and sense of place (Karasmanaki et al., 2020; Lewin, 2017). However, the purported economic benefits of resource extraction are not always realized and have diminished over time (Frickel & Freudenburg, 1996; Lobao et al., 2016). Areas that rely heavily on coal often have poor social and economic outcomes compared to other regions, the so-called resource curse (Hayter & Barnes, 2001; Mayer, 2021). Local governments become reliant on, even addicted to, the income generated during “boom” periods. The destruction of social capital and erosion of community cohesion is common in resource-dependent economies, and diversification in resource-based economies is challenging (Hayter & Barnes, 2001).

Communities can also experience significant social upheaval related to resource-extraction projects (Domínguez-Gómez & González-Gómez, 2021; Shaw et al., 2015). Cultural and socio-economic changes can increase social disorder, including increased substance abuse and violence against women and children (Dalseg et al., 2018; Walker et al., 2019). In small centres, existing local services and infrastructure may not adequately support an increasing population, straining social and health services, policing, and transportation (Dalseg et al., 2018).

Unequal access to the job market can create or exacerbate disparities within a community (Dalseg et al., 2018). There can also be psychological impacts related to coal mining, such as the emotional impacts of environmental and landscape changes (Dalseg et al., 2018; Evans, 2008). Further, the risks and benefits associated with coal mining are not evenly distributed, with marginalized populations disproportionately negatively affected and those with privilege reaping most of the benefits (Kojola, 2019; Mohai et al., 2009; O'Faircheallaigh, 2007).

While formal processes instituted by the state are central to decision-making, other informal factors also influence decisions about whether a project moves forward. In this context of environmental and human health impacts, contested economic impacts, unequal distribution of risks and benefits, and the resulting potential for social upheaval, how decisions about coal development are made is very important. Further, because it is challenging to address issues with mine projects after approval has been granted, the initial decisions about whether projects move forward are critical. To fully understand how decisions are made about extractive projects, it is important to examine the entire governance regime, which includes all the formal and informal activities that inform whether projects move forward (Young, 2013).

Research Objectives

While there is significant research on the shortcomings of formal environmental governance systems and the increase in informal governance, primarily related to resistance efforts, there is not as much literature examining governance systems holistically. As discussed in the environmental governance literature, both the informal and formal systems and how these systems interact at different scales are essential to understanding how extractive projects are governed.

The recent case of the Grassy Mountain Mine project in Southwest Alberta provides a timely and comprehensive example of a governance regime in Alberta. As with other extractive

projects of this size, Grassy Mountain underwent a joint provincial/federal regulatory review to assess whether the project was in the public's interest. At the same time, both proponents and opponents of the project engaged in informal governance activity, such as political advocacy, awareness-raising, and protest. This study examines this case to build our understanding of how governance regimes operate in Alberta. This project was originally organized around the following questions:

- What formal and informal governance processes were engaged to influence the outcome of the Grassy Mountain Mine regulatory review?
- How were individuals and organizations engaged in formal and informal processes?
- Did the environmental governance regime deliver an outcome in the best interest of Albertans, according to those involved in the process?

While the literature below was used to frame the research questions and develop interview guides, the research questions themselves evolved through the data collection and analysis phases. The governance theme remained an overarching focus, but the iterative process led to thesis chapters focusing less on governance and more on themes specifically relevant to this case. When examining the formal and informal governance processes used to influence the outcome of the Grassy Mountain Mine (question 1), I observed that participants were very passionate in their views, both for and against, which drove the high level of participation in the formal and informal processes. This prompted questions about factors shaping people's attitudes toward the project. Looking at the ways individuals and organizations engaged in formal and informal processes (question 2) revealed numerous challenges with Impact Assessments and the resulting impacts on the community. Discussions about the outcome and whether it was in the best interest of Albertans (question 3) reinforced this emerging theme. While Chapter 2 focused

on first research question in the context of Blackfoot culture, emerging themes influenced my modified research questions that ultimately shaped the data analysis for Chapters 3 and 4, as follows:

- What influenced resident views on the project?
- What are the impacts of the assessment process itself?

The resulting thesis chapters explore these refined themes, reflecting the issues emphasized by interview participants and concepts I found personally compelling. Specific literature related to these themes is included in their respective chapters, outlined below.

Literature Review

To explore the original questions, I drew from the literature on governance regimes, including informal and formal governance practices, and how these processes are influenced by concepts relating to justice and just transitions. These concepts remain important as an overarching context for the refined research questions. For example, people's attitudes toward development projects are key to their engagement in formal and informal governance, as discussed below. Further, IAs are central to government strategies for governing extractive industries. The impacts of IAs on communities have justice implications, as do attempts to use IAs to transition away from fossil fuels.

Governance

Jurisdictions make decisions about mining and other extractive projects through complex governance regimes. Although governance includes the state, the idea of governance encompasses more than formal government processes (Domínguez-Gómez & González-Gómez, 2021; Guo, 2019, Young, 2013). According to Domínguez-Gómez & González-Gómez (2021), "Governance consists in practices, methods and processes (formal and informal) based on

collective action amongst interested parties with different but legitimate visions converging on shared objectives and the quest for common wellbeing” (p.2). These “interested parties” include government as well as the private sector, non-governmental and civil society organizations, and individuals. Governance can happen at local, regional, and international scales. The governance regime comprises all the elements that contribute to environmental governance (Young, 2013). Analysis of governance regimes creates opportunities for a fuller understanding of all the factors and players that influence decision-making (Domínguez-Gómez & González-Gómez, 2021; Guo, 2019). This concept of governance can be used to understand how the mining sector is organized and managed and how socio-environmental effects are mitigated (Domínguez-Gómez & González-Gómez, 2021). Governance regimes are not static, and the roles and power of various systems change with time and context (Young, 2013). Understanding the governance systems of a particular regime sheds light on how decisions about extractive projects are made and who is making them.

Governance and Environmental Justice

For governance regimes to be considered effective, they must be considered just. Domínguez-Gómez & González-Gómez state, “‘governance’ carries an ethical connotation of goodness (“good governance”), encompassing principles of participation, transparency and accountability in public management (Domínguez-Gómez & González-Gómez, 2021 p.1). Governance regimes are tasked with balancing the views of all actors, with different and often conflicting priorities, to determine what is in the public's best interest. More powerful actors can set priorities and influence the outcomes of decisions regarding industrial developments. Although governance regimes include a wide range of actors, there are significant power differences among actors within these systems (Young, 2013). Effective governance regimes

should be able to address these power differences and the justice issues inherent in resource-extraction-based economies (Young, 2013).

In the 1980s, community-based environmental mobilizations began using environmental justice arguments to fight issues around toxic contamination (Čapek, 1993). Since then, scholars have developed a large body of research documenting how exposure to risks and access to benefits provided by resource extraction industries is unequally distributed (Kojola, 2019; Mohai et al., 2009; Shaw et al., 2015). This unequal distribution generally aligns with pre-existing societal power differences along the lines of gender, race, and class (Dalseg et al., 2018; Mohai et al., 2009; Walker et al., 2019). According to Kennedy, “environmental justice refers to a range of justice issues, including the ways in which environmental harms and risks are distributed throughout society, opportunities to participate in environmental decision making, the recognition and respect of those impacted by environmental harm and, ultimately, the functioning and flourishing of individuals and communities” (Kennedy, 2017; p.6). Although there are variations within this rich body of literature, common environmental justice principles include distributional, procedural, representational, and recognitional justice (Blue et al., 2021). In the context of environmental governance, distributional fairness refers to how risks and benefits of resource extraction projects are distributed, while procedural justice “is concerned with access to (and the nature of) participation in decision-making processes” (Kennedy, 2017). Recognitional justice involves a “recognition of and respect for marginalized groups, perspectives, and ways of knowing” (Blue et al., 2021; p.1). Related to recognition, representational justice includes “procedures to ensure representation of diverse perspectives in decision-making (Blue et al., 2021; p.1).

Just Transition

While the reality of climate change has created the urgency to transition away from fossil fuels, there are justice issues associated with this transition. As with any large-scale economic change, there are winners and losers in the transition to a low-carbon economy (Muttitt & Kartha, 2020). The transition will have significant economic consequences for individuals and communities that rely on fossil fuels for their livelihoods. The idea of a just transition emerged from the labour movement to draw attention to the challenges workers in extractive industries face as economies try to transition away from fossil fuels (Eaton, 2021). Though just transition discussions initially focused on jobs for skilled workers, the literature has broadened to examine justice issues for marginalized populations and the disparity between countries of the Global North and South (Eaton, 2021; Kojola, 2020). A just transition requires the following: “creating decent new jobs (i.e. with fair pay, reasonable conditions and union rights) by investing in alternative sectors; retraining transition-affected workers to help them get alternative jobs; protecting the rights and income of workers and communities throughout the transition; and democratically engaging those stakeholders in the process of transition” (Muttitt & Kartha, 2020, p. 1031).

Considerations about a just transition become complex in places like the Crowsnest Pass, where coal mining was phased out decades ago. In Alberta, rural communities are already suffering economically, and resource extraction projects like coal mines appear as an exciting opportunity for economic prosperity. Alberta as a province continues to depend on extractive industries, and many people in the Crowsnest Pass work in the industry, commuting to coal mines in BC or oil and gas jobs in Northern Alberta. Towns on the Alberta side of the border have not had active coal mines and the associated prosperity from those mines since the 1980s, however. While the rejection of the Grassy Mountain mine proposal may be part of the transition

of Alberta's economy away from fossil fuels, for the Crowsnest Pass the decision represents a loss of potential income rather than a substantive change. Leaving fossil fuels in the ground to stave off climate change is often termed "stranding assets", and justice issues are associated. Some argue that if a jurisdiction is asked to keep its fossil fuel assets in the ground for the global good, it should be compensated for the sacrifice, particularly in underdeveloped regions (Muttitt & Kartha, 2020).

Formal Governance

Decisions about extractive processes are made through Impact Assessment (IA) processes. Given the complexity of regulating environmental decisions, there are challenges to formal governance systems both procedurally and in their ability to produce outcomes that solve “problems that arise in human-environment relations” (Young, 2013). Numerous authors have demonstrated the inability of IAs to accurately assess environmental impact due in part to technical challenges (Day et al., 2019; Eckert et al., 2020; Kojola, 2019; Larsen, 2016). If IA processes do not accurately assess the risk and benefits of a project and the distribution of those risks and benefits, people in decision-making positions will not be able to make fully informed decisions on whether projects should move forward. In this context, projects that pose an unacceptable level of risk to the environment, human health, or social wellbeing may be permitted. A large body of research from multiple disciplines discusses the shortcomings of existing environmental assessment processes in Alberta, across Canada, and internationally (Eckert et al., 2019; Walker et al., 2018).

One of the major challenges embedded in regulatory processes is the tension between efficiency for industry and creating effective safety for society. On the one hand, governments must look to economic interests and promote the development and expansion of industry. On the other hand, they must safeguard the health of their citizens and the environment. According to

Novek (1995), IAs are “designed to resolve the problematic relationship between economic expansion and environmental preservation” (p.146).

One major challenge to state-instituted governance systems is maintaining the integrity of the bureaucracies tasked with implementing governance policies. Bureaucratic slippage is a phrase coined by Freudenburg and Gramling (1994) to describe how bureaucracies operate in ways that contradict the original policy objectives. Government regulatory agencies are assumed to be neutral arbiters of objective facts, set up to prevent the environmental harms produced by industry while avoiding undue constraints on development (Freudenburg & Gramling, 1994). Some argue that these agencies are set up simply for the sake of optics, to convince the public that due process has been followed. Further, these agencies are only partially autonomous. Several factors can enable the “capture” of bureaucracies by industry, such as access to influence via lobbying and political contributions, the movement of workers between industry and bureaucracies, relationship building between bureaucrats and industry representatives, and the disproportionate ability of more powerful actors to influence the perceptions of projects (Freudenburg & Gramling, 1994; McCright & Dunlap, 2010).

The capacity to influence regulatory agencies is not equally distributed (Freudenburg & Gramling, 1994). Supporters of industrial development can distort public debate and hinder policies that conflict with their interests (Muttitt & Kartha, 2020). There are strong indications that bureaucratic slippage has happened in Alberta, particularly as it relates to fossil fuel extraction. Resource extraction, particularly oil and gas, has been central to Alberta’s economy for decades, leading to the economic reliance on fossil fuels and decades-long government commitment to and investment in fossil fuels (Adkin, 2009). While these industries have been an economic driver in Alberta, their entrenchment has undermined environmental regulation and led

to industry capture of regulatory bodies (Adkin, 2009; Davidson et al., 2018). Beyond bureaucratic slippage, Davidson argues that government policies actively suppress dissent against the oil and gas industry (Davidson et al., 2018).

Formal Governance in Canada

In Canada, approvals for extractive projects follow Impact Assessment (IA) processes which fall under federal, provincial and territorial jurisdictions (Eckert et al., 2019). Smaller projects are regulated through provincial regulators such as the Albert Energy Regulator (AER) in Alberta, while larger projects must also undergo a joint federal/provincial review based on an environmental impact assessment. Other federal and provincial legislations apply to extractive projects, such as land-use policies, the Species at Risk Act (SARA), and rules pertaining to water allowances. The regulatory review process is essential in determining which mines are approved and move forward: “these processes influence how development proceeds, how benefits are distributed within and among communities, and how negative effects are mitigated” (Dalseg et al., 2018, p. 136). These processes are meant to assess environmental and social impacts while ensuring projects align with all relevant policies and legislation (Eckert et al., 2019).

Challenges with IAs are well-documented and governments are familiar with these critiques. Because of challenges identified in the IA process, the Government of Canada overhauled the current legislation around IAs in Bill C-69 (Dalseg et al., 2018; Walker et al., 2019). Provisions for the inclusion of intersectional approaches and a focus on intentional inclusion of Indigenous and other marginalized voices is embedded in this bill (Walker et al., 2019). Eckert et al. analyzed this new bill to determine if and how it addresses identified limitations of IAs, particularly pertaining to the inclusion of Indigenous knowledge. They found that only a few limitations were addressed but that there was potential to address others by

following international best practices (Eckert et al., 2019). Eckert et al. also found that many of the limitations of IAs are not surmountable within current structures (Eckert et al., 2019).

Informal Governance Systems

As the role of government has decreased in environmental governance regimes, the role of the private sector has become more important (Hackett, 2015). Self-regulation of many aspects has become more common as jurisdictions attempt to streamline regulatory processes (Shaw et al., 2015; Young, 2013). Governments are also choosing to engage market instruments to manage industrial development and related environmental problems, such as “payment for ecosystem services, tradable credits in pollution and biological resources, and biodiversity offsets are but a few examples of these new market-based instruments” (Hackett, 2015; p.174). In addition to participating in formal regulatory processes and market-based instruments, businesses and industry organizations play an active role in shaping discussions about coal mining and garnering support for their projects, contributing to bureaucratic slippage. Industry associations and individual businesses may lobby the government directly regarding specific projects, regulations, or on behalf of the sector. Industry representatives also may engage directly with civil society. In the context of diminishing returns, increasing awareness of environmental destruction, and decreasing support for the industry, the coal industry faces a legitimacy crisis (Bell & York, 2010). Efforts to transition to renewable energies spur active resistance through lobbying efforts and on-the-ground campaigns in coal mining regions (Bell & York, 2019; Lewin, 2019). On the other hand, market forces and businesses can have a cooling effect on industrial projects. For example, with consumer pressure, banks may divest from extractive projects.

Members of civil society are also important members of governance regimes and may use informal avenues to influence decision-making, both in support and opposition. Some of this

informal activity can include what Jerolmack and Walker term “quiet mobilization” (Jerolmack & Walker, 2018), which includes activities that may not traditionally be considered activism, such as cooperating with corporations to facilitate the regulation process, signing agreements allowing corporate access to private property, participation in stakeholder engagement, and formation of interest groups (Jerolmack & Walker, 2018). In some contexts, civil society may feel alignment with industry and support industry directly or indirectly through social norms and customs (Young, 2013). Mobilizations for or against mines by civil society can also be more assertive, including political protests, boycotts etc. Gobby et al. discuss how individuals and communities increasingly take to social movements to influence decision-making because of dissatisfaction with formal systems (Gobby et al., 2021).

Case Study Context

The region around Grassy Mountain is the ancestral lands of the Blackfoot Confederacy, who have lived on these lands since time immemorial. Additionally, the traditional territories of numerous Indigenous communities extend into the region and/or have significant cultural connections to the region, including the Apsaalooke (Crow), Ktunaxa (Kootenai), Cree, Shoshone and Métis peoples (Binnema, 2019; Municipality of the Crownest Pass, 2020; Wilson et al., 2005). Because of colonialism and its many legacies, such as the reserve system and extirpation of the bison, traditional use of the area declined significantly after European settlement forced Indigenous peoples off their lands (Farr et al., 2017; Wilson et al., 2007). This history does not negate the inherent rights of the Blackfoot to their ancestral territory or their ongoing connection to and stewardship of these lands. While this project was primarily focused on the settler population due to scope and ethical constraints, I did include a study with a Blackfoot organization as a subunit to this case study (Chapter 2).

This project focuses on the Grassy Mountain Mine proposal (Grassy Mountain) that was denied by regulators on August 6, 2021 (Impact Assessment Agency of Canada (IAAC), 2021). Subsequent applications to appeal were denied by the provincial court in January of 2022 (Ho, 2022) and the Supreme Court of Canada (SCC) in September of 2022 (Supreme Court of Canada, 2022). The proposed Grassy Mountain mine footprint was located in both the Municipality of the Crowsnest Pass (CNP) and the Municipal District of Ranchland (Ranchland MD) in Southern Alberta. Benga Mining Ltd. (Benga), a wholly owned subsidiary of the Australian company Riversdale Resources, obtained the lease in 2013. Benga then initiated the regulatory review process with the Alberta Energy Regulator (AER). Subsequently, significant exploratory work occurred at the proposed mine site.

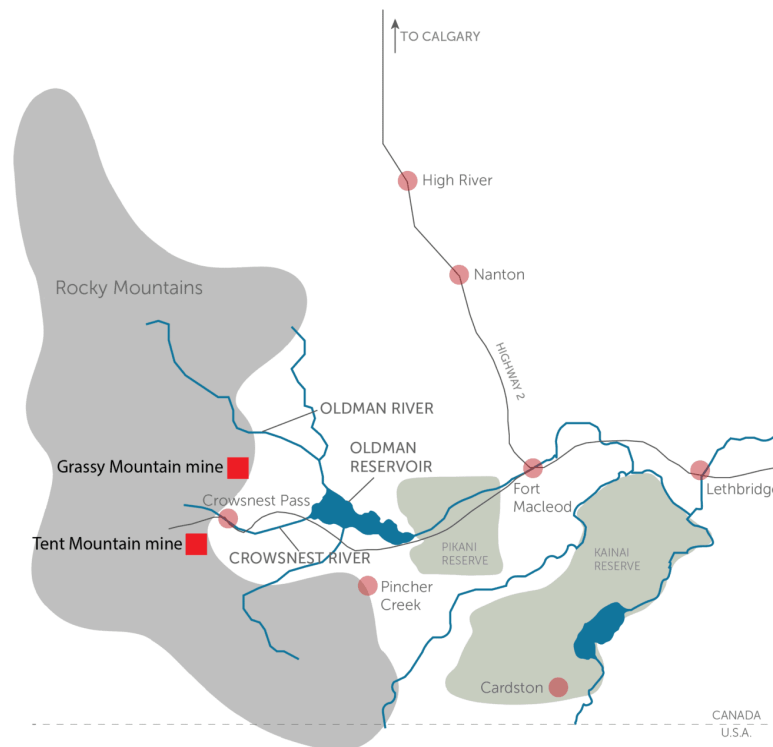


Figure 2: Map of region surrounding proposed Grassy Mountain mine (Riley et al, 2021) Used with permission.

The Municipality of the Crowsnest Pass comprises five communities along Highway 3 in the Southwest corner of Alberta. It is the southernmost pass in the Canadian Rocky Mountains, connecting Alberta and British Columbia (Crowsnest Historical Society, 1979; Wilson et al., 2005). The coal deposits attracting attention now also spurred much of the European settlement to the area at the turn of the 20th century. The five communities now consolidated as the Municipality of the Crowsnest Pass were once individual mining towns (Van Assche et al., 2021). Coal remained the cornerstone of the Crowsnest Pass economy in the following decades, despite the boom-and-bust cycle that characterizes coal-based economies (Crowsnest Historical Society, 1979; Municipality of the Crowsnest Pass, 2020; Wilson et al., 2005). Ranchland MD runs North from the Crowsnest Pass along the Eastern Slopes and foothills of the Rocky Mountains and contains no urban centres. While Ranchland MD is primarily agricultural, some early homesteaders supplemented farm incomes by commuting to mines in the Crowsnest Pass. The coal industry in the region began to decline in the late 1940s, and the last active coal mine, Coleman Collieries, closed in 1983 (Wilson et al., 2005). Although coal mining activity has ended in the Crowsnest Pass, extractive industries continue to be an essential part of the economy, including industries such as logging, natural gas, and lime extraction. Many of the region's residents commute over the provincial border to work in the nearby British Columbian coal mines. Coal is also embedded in the culture and identity of the town (Van Assche et al., 2021), with numerous historical and tourist attractions based on the town's coal mining past (Wilson et al., 2005).

In June of 2021, the joint provincial and federal review panel released their findings and concluded that moving forward with the mine would not be in the public interest. In light of this recommendation, the AER will not grant regulatory approval for the mine. Benga attempted to

appeal this decision, but the Alberta Court of Queen's Bench (Ho, 2022) and the Supreme Court of Canada (Supreme Court of Canada, 2022) denied their leave to appeal.

Because of the recent declines in Alberta's economy, exacerbated by the Covid-19 pandemic, opening up the region to new mining opportunities was seen as a godsend for some (Van Tiegham, 2020). A renewed coal mining industry is projected to revitalize towns while pouring much-needed capital into provincial coffers in the form of royalties and taxes (Riversdale Resources Limited, 2020; Nichols Applied Management, 2015; Van Tiegham, 2019). This is particularly true in the Crowsnest Pass, which has never recovered economically from the decline of its founding industry. In addition to coal mining, other major employers have closed down in recent decades, including Philips Cable in 1985 (Wilson et al, 2005), Devon Gas Plant in 2012 (Massey, 2012) and Graymont lime quarry in 2015 (Black, 2015). As a result, the town has seen year-over-year population declines and has one of the oldest populations in the province (Van Assche et al., 2021; Statistics Canada, 2019). The town is also aging, with a median age of 50 compared to the provincial median of 36, according to the 2016 census (Statistics Canada, 2019). In the Socio-Economic Impact Assessment for the Benga Mining Grassy Mountain project, Nichols Applied Management (2015) estimates the lifetime municipal taxes of the project to be 11.2 million Canadian dollars, providing approximately 1215 person-years of direct employment in Alberta. Related and support industries are expected to create more employment and generate more taxes for the municipal government (Nichols Applied Management, 2015). In this context, many CNP residents, including the town council, are in support of the mine.

Despite the economic promise of the proposed mine, there were many opponents to the project, based primarily on environmental concerns. Southern Alberta is a relatively water-scarce

region, and the local Oldman watershed provides water to the entire region and into Saskatchewan (Jaremko, 2016). The ecosystem is characterized by a high level of biodiversity and critical habitats for wildlife and plants, including many endangered plant and animal species (Farr et al., 2017). The region is part of an important wildlife corridor connecting habitats for wide-ranging species such as grizzly and black bear, elk and other ungulates, mountain sheep and goats, cougar and raptors (Farr et al., 2017; Oldman Watershed Council, 2010).

Even without a coal industry, there are already numerous environmental pressures in the area, including logging, industrial development, ranching, and recreational uses (Farr et al., 2017). These activities have wide-ranging impacts on the environment, displacing wildlife, reducing and degrading habitat, polluting air and water, and disrupting riparian systems. Although tourism has been a key strategy for rebuilding the economy, increases in tourism exacerbate these environmental challenges. For example, over-fishing and hunting put pressure on wildlife populations such as native trout species, and recreational users cause wildfires, generate pollution, and disrupt wildlife (Farr et al., 2017). Further, the Rocky Mountains are a powerful cultural symbol for many residents of other parts of Alberta and Canada.

Opponents of the mine have also questioned whether coal mining would be the economic boon the town and the province are expecting. Resource-dependent economies are at the mercy of highly competitive export markets, with rising costs and diminishing returns over time, making this economic model unsustainable over the long term (Hayter & Barnes, 2001; Evans, 2008; Yang et al., 2018). Further, changes in technology are making lower carbon footprint techniques more feasible for steelmaking. Changes in technology have also allowed for increased automation in the mining sector, a trend that is likely to continue (Stewart Burns, 2007).

In the spring of 2020, Alberta's provincial government rescinded a decades-old policy that governed coal development in the province. Concern about the environmental impacts of these changes sparked outrage throughout the province and awareness of other coal mining projects proposed long before the 2020 policy change (Dryden, 2022; Omstead, 2021). Because of the public pushback against this policy change, the provincial government provisionally reinstated the old policy. It struck a committee (Coal Committee) to perform a public consultation, which would be used to inform an updated policy (Government of Alberta, 2023). Based on consultation findings, the Government of Alberta placed a moratorium on coal exploration excepting mines with regulatory processes underway (Government of Alberta, 2023). Grassy Mountain and one other mine in the region, Tent Mountain Mine, fell under this exception. After the Supreme Court denial of appeal for Grassy Mountain, however, a way forward for the mine is unclear.

While the project was already controversial locally and in environmentalist circles, the outrage over this policy change drew broader attention to Grassy Mountain. Grassy Mountain is located on an old, unreclaimed mine site (JPR, 2021). Because of this, Grassy Mountain fell under an allowable category in the 1976 coal policy, but this nuance was generally lost in the controversy about the mine. Although much of the active mobilization was against the mine, after the mine application was denied, local organizations in support of mining on the Eastern Slopes started coming together. Activities included involvement in formal opportunities such as the province's Coal Committee consultation and more informal strategies such as letter-writing, public education and awareness-raising campaigns.

Research Design

Methodology

This study employed a qualitative case study approach to examine the formal and informal governance of the Grassy Mountain mine project. Case study research designs provide an opportunity to develop a “*holistic understanding* of a problem, issue, or phenomenon within its social context” (Hesse-Biber, 2017, italics original). Case study research provides an in-depth look at a bounded case (Yin, 2013). According to Kojola, “Case studies are useful for studying ongoing events and processes by tracing how and why events unfold, and the focus on a single case creates in-depth knowledge of sociopolitical dynamics” (p.136). For several reasons, a case study approach lends itself well to studying the Grassy Mountain project. Environmental governance regimes are complex, and case studies allow for an analysis of systems at multiple scales. Grassy Mountain is an example of what Yin would call a common case (p.52). Although the outcome of the regulatory review was surprising to many, the application for regulatory approval reflects a relatively standard regulatory approval process in Alberta. Many of the formal and informal governance systems are reflected in this case, with actors from government, industry and civil society engagement in a range of strategies to influence the decision-making processes. Contradictory views of the environmental and economic impacts of the mine have made the project controversial to both local communities and among the wider population in Alberta and across Canada. Based on work by Stake (1995) and others, case studies can be categorized into three main types: single instrumental, single intrinsic, and collective or multiple (Hesse-Biber, 2017). This is an instrumental case study - “an in-depth inquiry that focuses on an issue or concern and then selects one bounded case to illustrate these issues” (Hesse-Biber, 2017; p.224).

Data Collection

Using multiple forms of evidence is an important strategy to increase rigour in case study research and allow for triangulation of findings (Yin, 2013). Data was collected through document analysis, key-informant interviews, and attendance at local events and webinars. I developed an interview guide based on the relevant literature, though interviews were semi-structured and interview questions modified in response to participant perspectives, and subsequent interview questions were modified to incorporate emerging themes.

The list of potential interviewees was developed based on Joint Review Panel records, news stories, and suggestions from research participants (snowball sampling). Participants were included based on their engagement in formal and informal processes, either for or against the mine. I also included subject matter experts who could speak to specific technical questions related to mining or environmental impacts. As this was a qualitative study, I made no attempt to have a representative sample. However, I did ensure that a wide array of perspectives were included, covering the range of positions taken toward the mine. Participants were recruited through an initial invitation email, after which meetings were set up with interested parties. Some of these emails were “cold calls” based on publicly available information, but many were contacted through my personal contacts in the area and referrals from other participants, which led to a positive uptake of invitations to participate. Participants were provided with an information sheet and consent form, reviewed by the Research Ethics Board, to review and sign before interviews commenced. Participants were also given a gift card as a token of appreciation for their participation. Interviews were in-person or online via Zoom and lasted between one to three hours. With participant consent, interviews were recorded and transcribed. As part of the data verification process, participants were given the opportunity to review transcribed interviews to check for accuracy.

I conducted interviews between August 2021 and July 2022. A total of 49 people were interviewed, including subject matter experts, business owners, ranchers, and community members from the Crowsnest Pass, MD of Ranchland, and surrounding municipalities (Municipality of Pincher Creek, Municipal District of Pincher Creek, Municipal District of Willow Creek), elected officials from various jurisdictions, hearing participants, mine and industry representatives, representatives from civil society organizations including local and provincial environmental organizations, residents with properties adjacent to the mine site, and local organizers both for and against the mine.

Additionally, I interviewed one member of a grassroots Indigenous organization formed in response to the mine proposal and two Elders from the Piikáni Nation connected to this same organization. This work required a different methodological approach and ethics consideration, outlined in depth in Chapter 2.

Although some interviewees fell into more than one category, (for example, one may be both a business owner and a hearing participant), I assigned each transcript to the most appropriate group for the purpose of anonymization. All participant quotes in the following chapters are drawn from these interview transcripts, unless otherwise noted. Participants were given the option to be anonymous, have their names associated with direct quotes, or not be quoted directly at all. Although most chose to remain anonymous, one business owner (Ralph Teigen) chose to have his name on his direct quotes.

Interview data were supplemented with an assessment of publicly available documents and files, including public documents related to the Impact Assessment, EIA guidelines and terms of reference, submissions to the AER and CEAA, Joint Review Panel (JRP) submission, other reports and documents related to the project, submissions to the Coal Policy Committee,

mainstream and social media content and government press releases. I also monitored local Facebook pages and attended public meetings and webinars hosted by both mine opponents and supporters. Although the initial denial of the mine project happened before I began interviewing, issues related to the mine continued to evolve throughout data collection and analysis, such as appeals to federal and provincial courts and evolving provincial policies regarding coal. I followed these changes by reviewing government reports and monitoring local news and social media to get a sense of local responses to these developments. Additionally, analysis of census data and maps of the region helped me develop a picture of the region's current and historical demographics and geography to provide context for the case.

Data Analysis

I analysed data using a general inductive, open-coding process (Linneberg & Korsgaard, 2019; Thomas, 2006). I developed codes based on the content of interview transcripts, which allowed me to create codes that directly reflect the data (Gibbs, 2007; Linneberg & Korsgaard, 2019; Thomas, 2006). Initial coding began during data collection as I noted themes and concepts that were most important to participants, including those that elicited strong emotional responses. I refined coding schemes to reflect emerging themes as I collected more data and reflected on interviews. This iterative process allowed me to reflect on and respond to the major concerns of participants (Gibbs, 2007; Linneberg & Korsgaard, 2019). After I completed and verified transcripts, I used Nvivo (QSR International, 2020) software to further code interview findings, documents, and field notes. These codes were then refined based on emerging themes in the transcriptions and supplementary data.

Thesis overview

Chapter 2 examines what happens when communities lose trust in the formal governance process and choose to engage with governance informally. This is also an opportunity to explore

an Indigenous point of view and focus on the oral histories of the Blackfoot. This chapter is based on an in-depth look at one grassroots organization, the Mountain Child Valley Society (MCVS), that emerged in response to the Grassy Mountain mine. While Benga did consult directly with the Chief and Council of Piikáni and signed an Impact Benefit Agreement with their leadership, many Nation members were not satisfied with the approach taken by their leadership. Based on their inherent sovereignty over their traditional territory, and feelings of responsibility to protect this land, these nation members were adamantly opposed to the mine. Seeing no place for themselves in the formal process, these members started their own organizations and used informal avenues to influence decision-making.

How local populations see mining projects is important for governance regimes, as community acceptance and participation are important for formal processes and social licence to operate for mining companies, and clashing opinions on mining projects can lead to conflict. While the literature on attitudes toward development focuses on a wide range of factors, place is a growing focus (Kojola, 2020). Chapter Three discusses factors that shape support for or opposition to resource extraction, focusing on the intersection of place and environmental worldviews. Because the region around Grassy Mountain is an iconic landscape embedded in local, regional and even national identities, place is a particularly relevant lens in this case. Sense of place is socially constructed and underpinned by culture and values (Suchya, 2020). It is helpful, therefore, to look at the values that help influence sense of place. To this end, this chapter focuses on the intersections between sense of place and an environmental worldview. These intersections help to illuminate what is at stake for people involved in conflict over mining projects. While these conflicts are often framed as jobs versus the environment, this case demonstrates how culture and values underpin resource development conflicts.

In Chapter Four, I examine what happens at the community level as a result of formal governance systems, specifically Impact Assessments (IAs). Because of the potential for IAs to have significant positive or negative impacts on communities, this chapter argues that IAs generate novel risks to individuals and communities, separate from the project they are assessing, drawing from literature on risk and science. The risks associated with coal mines are potentially catastrophic but challenging to measure accurately or predict, consistent with Beck's risk society hypothesis (Beck, 1992). While IAs rely heavily on rational approaches, the complexity of modern mining means there will always be some uncertainty. Further, how individuals assess risk includes social factors, such as impacts on culture, which are not easily addressed in IA processes. This disconnect between how people understand extractive processes and what IAs can actually achieve can lead to conflict and polarization within communities. In this case, community conflict led to broken relationships, reduced feelings of safety, and distrust of formal governance systems.

The concluding chapter provides an overview of the thesis, policy implications, study limitations, and suggested future research areas.

Standpoint

When I heard about the prospect of new mines in the Eastern Slopes, my interest was piqued for personal reasons. I was born and raised in the Crowsnest Pass and I feel a deep connection to both the town and the surrounding mountains. Although I moved away as an adult, I visit the area regularly to see family and spend time in the mountains. Because of this background, I have significant emotional attachments to the landscape and strongly oppose the anything that might damage the ecosystem. On the other hand, I have been dismayed over the years watching the economic struggles facing the place that I still consider home and understand

the urgent need for economic development. These emotional factors inspired me to take on this project but could also have affected my analysis and research approach.

My knowledge of both the town and the landscape was insightful as I designed and conducted the research and in my analysis of the findings. I was able to leverage personal connections in the area to identify and recruit potential research participants. These connections likely led to a higher rate of participation, easier rapport building, and possibly more openness in answering interview questions. On the other hand, I was easily recognizable in town which made maintaining the anonymity of interviewees challenging.

My position as a white settler and academic gives me some privilege in accessing government and other official spaces to access documents or ask questions. I am in no way positioned to speak on behalf of any individual or group, particularly those whose intersections of oppression or privilege differ from mine, and this research makes no attempt to do so.

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Chapter 2: Grassroots Resistance to the Grassy Mountain Mine: The Case of Mountain Child Valley Society (*Miistakii Pookaw Awahhkoi Kanakkaatsi*)

Introduction

In Canada, resource extraction projects are often sited on ancestral Indigenous territories. Due to the ongoing legacies of colonialism, however, governance processes are not well-equipped to negotiate the complexities of project approvals while respecting Indigenous rights. Regulatory processes, such as Impact Assessments, are the government's tools for assessing whether coal mines are in the public interest. Many informal elements also influence decisions about approving a project, like letter-writing campaigns, protests, or industry lobbying. All these factors make up the governance regime.

Indigenous communities and groups employ numerous strategies to influence decision-making around resource extraction projects. Because extractive processes are seldom denied in many jurisdictions, including Alberta, communities may feel that engagement with the formal process is the only way to have their concerns heard and mitigated (McCreary et al., 2016). They may also consult directly with industry proponents. Other strategies may include mobilizations outside the formal process. According to Thériault et al. (2021), "Indigenous peoples' agency in mining projects can be embedded within, or emerge beyond, the formal recognition of Indigenous peoples' rights, in particular through the mobilization of a variety of political and legal strategies in the context of asymmetrical territorial rights regimes and bargaining power" (p.2).

This chapter focuses on the Mountain Child Valley Society (MCVS) *Miistakii Pookaw Awahhkoi Kanakkaatsi* from the Piikáni First Nation to demonstrate how one organization participated in the governance regime around the proposed mine. This study provides insight into the role of grassroots organizations in environmental governance in Alberta and is based on the following research questions: 1) What formal and informal governance strategies were engaged in influencing the outcome of the Grassy Mountain Mine regulatory review? 2) How do Blackfoot culture and history inform and influence these strategies?

Literature Review

Impact Assessment and Indigenous Communities

It is crucial to pay particular attention to how IAs engage with Indigenous communities for several reasons. The impacts of resource extraction and IAs are often felt uniquely by Indigenous communities. Because of their connection to the land, the disruptions caused by resource extraction can be particularly damaging to Indigenous livelihoods, cultures, and spiritual practices (Baker & McLelland, 2003; Booth & Skelton, 2010). The damage to the land caused by industrial development can interfere with Indigenous legally protected rights to practice their cultures (Booth & Skelton, 2010; Thériault et al., 2021). Decimating landscapes has cultural, emotional, and spiritual impacts that are not experienced by settler communities in the same way (Booth & Skelton, 2010). As Booth and Skelton state, "From the First Nations of Canada's perspective, one conclusion is that the continued social and political acceptance of the impacts of industrial resource extraction upon indigenous cultures and their traditional lifestyles will lead to their disappearance as a people and as a land-based culture" (p. 700). Further, extractive industries are often based on the historic and ongoing displacement of Indigenous people from their territories (Baker & McLelland, 2003; Kojola, 2019). This pattern continues,

and because of the remote location of both resource extraction projects and Indigenous communities, IAs happen disproportionately around Indigenous communities and on Indigenous territories (Booth & Skelton, 2010; O'Faircheallaigh, 2007).

Indigenous communities are also uniquely positioned to provide insight into the impacts of resource extraction. Indigenous communities have developed their own methods for evaluating environmental management (Booth & Skelton, 2010; Eckert et al., 2020). When indigenous knowledge is not incorporated into IAs, powerful insights about the environmental and social impacts are missed.

Formal Governance Context

Governance regimes shaping decision-making about resource extraction projects are particularly complex regarding Indigenous populations (Thériault et al., 2021). Indigenous people's inherent rights are codified in national and international laws, which underpin the formal governance of resource extraction. This includes rights that are protected in international agreements such as the International Labour Organization's Convention 169 on the Rights of Tribal and Indigenous Peoples, and the more recent United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) (Boutilier, 2017; Papillon & Rodon, 2015). In Canada, Indigenous rights and title are enshrined in Section 35 of the constitution (Ng, 2022). Indigenous rights are also protected through treaty rights and legal rulings in land claim suits (Eckert et al., 2019; Horowitz et al., 2018; O'Faircheallaigh, 2007). Additionally, recognition of Indigenous rights is embedded in the legislation governing IAs (Baker & McLelland, 2003; Booth & Skelton, 2010; Ng, 2022).

Despite legal provisions, IAs have historically been characterized by the exclusion of Indigenous voices and Indigenous knowledge (Booth & Skelton, 2010; Eckert., 2019; O'Faircheallaigh, 2007). Although Canada is a signatory to UNDRIP, its principles are inconsistently operationalized across the country (Booth & Skelton, 2010; Eckert et al., 2019; O'Faircheallaigh, 2007). While Indigenous rights are formally embedded within IA legislation, there are "constraints imposed on the exercise of Indigenous agency by the settler state's legal, political, and economic frameworks in the context of mining development" (Thériault et al., 2021, p.2). A large body of literature is dedicated to the shortcomings of IAs in the context of Indigenous communities (see, for example, Baker & Westman, 2018; Booth & Skelton, 2010; Darling et al., 2023; O'Faircheallaigh, 2007). Canada's constitutional and legal setting dictates that Indigenous nations have a nation-to-nation relationship with the government and should be treated as such (O'Faircheallaigh, 2007). IAs processes lag behind legislative decisions, however (Eckert et al., 2019), and Indigenous communities are often treated more like stakeholders than rights holders (Darling et al., 2023). When Indigenous rights are not honoured within formal IAs, Indigenous populations often must fight for these rights outside the formal IA processes, sometimes through the courts or in protest movements (Booth & Skelton, 2010; O'Faircheallaigh, 2007).

Consultation and Free Prior and Informed Consent

Consultation with Indigenous communities is central to protection of Indigenous rights. In the context of resource extraction, the duty to consult Indigenous communities is often merged with the impact assessment process (Craik, 2016; Ng, 2022). The imperative to consult with Indigenous nations is embedded in the legislation governing IAs (Baker & McLelland, 2003; Booth & Skelton, 2010; Eckert et al., 2019), and governments see the consultations in IAs as

meeting their consultation obligations (Ng, 2022). There are obligations to consult with Indigenous communities within Canadian and Albertan IA processes, but there are no clear guidelines for how consultation with Indigenous communities should be carried out. The principle of obtaining free, prior and informed consent (FPIC) from Indigenous peoples is integrated in legislation, international agreements such as UNRIP, and widely held international norms (Papillon & Rodon, 2020). Operationalizing this is a challenge for governments, however, and promises of FPIC are seldom fully realized on the ground. As Papillon and Rodon (2020) state, "the debate tends to be polarised between an interpretation of FPIC as an Indigenous veto or as a state-centred procedural obligation to consult in order to seek, but not necessarily obtain, Indigenous consent when resource development projects may affect their rights" (p. 315). This tension plagues IA processes, and bad faith engagement undermine their legitimacy. It generally falls to the project proponent to determine how they will conduct this engagement (Baker & Westman, 2018). Operationalizing FPIC obligations is different across jurisdictions and sectors of the economy (Baker & Westman, 2018; Thériault et al., 2021). The Government of Alberta has issued consultation guidelines specific to resource extraction projects, which have received significant criticism (Baker & Westman, 2018).

Both industry actors and governments use formal regulatory processes such as IAs to establish legitimacy for extractive projects (Novek, 1995). However, bad faith engagement is not lost on the public, and when the public views IA processes as disingenuous, IAs erode trust in regulatory agencies (Dalseg et al., 2018; Kojola, 2019; Shaw et al., 2015). According to Kojola, "Limited and superficial community input contributes to a lack of trust in government agencies and development projects" (2019; p. 134). This is an important challenge because the IA process

relies on community consultation for legitimacy and informing regulators about potential impacts. According to Shaw et al. (2015),

...communities perceive that governments at provincial and federal levels are pursuing energy projects for purposes of capital development and, as such, governments are seen as advocates for the developments rather than neutral arbiters of social interest. As a result, many communities doubt that governments have the intention or capacity to guarantee fairness and protect natural and social values over the long term (p.42).

Baker and Westman argue that IA consultations with Alberta's Indigenous populations could be viewed as extractive themselves (2018). They state: "once a study is completed and shared with the corporate sector, developers are free to represent specific pieces of community knowledge for their own ends without regard to cultural context" (Baker & Westman, 2018, p.147). Darling et al. found that the transfer of knowledge in IA is often one way, with communities providing knowledge in good faith with little or no reciprocity (2023). By reinforcing traditional hierarchies and not acknowledging Indigenous rights, IA processes can undermine Indigenous sovereignty and self-determination (Booth & Skelton, 2010; Eckert et al., 2018).

Determining whose consent needs to be obtained is not always straightforward. Resource extraction projects can fall in the territories of more than one Indigenous nation with diverse relationships with the land and the landscape, and there may not be a consensus among affected groups on the project in question (Thériault et al., 2021). Further, colonialism has disrupted Indigenous leadership traditions, and formal governance arrangements set up by the colonial state do not always align with traditional leadership structures (Eisenberg, 2021; Luoma, 2022).

While the state engages at the political level, traditional leaders exist and continue to have power in their communities. Conflicts can occur when traditional leadership and state-sanctioned governments have opposing opinions on a project. This issue was brought into sharp relief in Canada with a natural gas pipeline proposed in Wet'suwet'en territory in 2020. While five of six local band councils consented to the Coastal GasLink pipeline, most local hereditary chiefs did not support the project (Eisenberg, 2021; Luoma, 2022). Coastal GasLink decided to proceed with the pipeline's construction, sparking protests, including railway blockades that lasted several weeks (Luoma, 2022).

Impact Benefit Agreements

Indigenous communities may also consult directly with industry proponents. One of the critical tools proponents use to obtain the consent of Indigenous populations is the use of Impact Benefit Agreements (IBA) (Caine & Krogman, 2010; Thériault et al., 2021). These are agreements negotiated directly between the project proponent and an Indigenous community (Caine & Krogman, 2010; Thériault et al., 2021). Within IBAs, Indigenous communities can negotiate benefits for their communities, such as financial remuneration, guarantees of training and employment for nation members, involvement in project planning, and oversight of environmental mitigation (Caine & Krogman, 2010). Although IBAs can be an opportunity for communities to secure economic and other benefits from resource extraction projects, persistent power differences between Indigenous nations and project proponents means their potential is difficult to fully realize (Caine & Krogman, 2010; Thériault et al., 2021).

Informal participation in IAs

To navigate the complexities of the governance regime for mining projects, communities employ various tactics, including involvement in the formal process, direct consultation with the

proponent through IBAs, or strategies outside the formal decision-making process (Conde, 2017; Gobby et al., 2019; Thériault et al., 2021). While some communities see IA processes as opportunities to assert their Indigenous rights and title (Darling et al., 2023), other Indigenous communities do not trust the formal process and feel their communities must defend their own interests (Shaw et al., 2015). Given the shortcomings of IA processes, some communities may choose to disengage completely (Darling et al., 2023). Increasingly, opponents of resource extraction projects take to informal avenues (Horowitz and Watts, 2019). According to Horowitz and Watts (2019), "In the wake of widespread perceptions of governments' failure to address social problems adequately, ..., non-state actors have begun to play a greater role in environmental governance" (p.13). Resistance to IA processes is not just about participation issues. Indigenous groups may not share the goals of IA processes that are based on colonial structures and assumptions. In addition to influencing decision-making on specific projects, resistance to IA is an opportunity for lay people to contribute to system change. Resistance creates space for developing alternative governance regimes not based on colonial dispossession and capitalist extractivism (Gobby et al., 2021).

These mobilizations include a repertoire of strategies (Conde, 2017; Gobby et al., 2021). Informal activity may include strategies that fall within "conventional forms of collective engagement in civil society such as participating in town hall meetings or organizing interest groups (Jerolmack & Walker, 2018, p. 482). Other strategies may fall outside legal structures. Gobby et al. (2021) examine 57 environmental conflicts in Canada, and find six strategies that opponents use to influence decision-making, as follows: (1) Physical Disruption of resource flows: Occupations and blockades; (2) Boycotts and other financial pressure; (3) Enacting Indigenous sovereignty, law and governance; (4) Winning the battle of ideas: Media,

communications, and new imaginaries; (5) Transformative Alliances: Building support across cultures, sectors, movements, and regions; and (6) Multi-pronged approaches: Building power by combining different strategies (Gobby et al., 2021). Some of these strategies are directed directly at governments, while others are directed toward industry and other sectors (Horowitz & Watts,). Resistance takes different forms depending on context, and communities and groups may employ any combination of the above strategies (Gobby et al., 2021)

Methods

Research With Indigenous Communities

When conducting research with Indigenous populations, non-Indigenous scholars need to understand how Western scholarship reproduces colonial structures (Carlson, 2016; Interagency Advisory Panel on Research Ethics, 2018). As Carlson states:

In defining settler colonialism as a structure, what often 'slides from view' in settler colonial scholarship are the 'ongoing processes by which settler dominance is actively reconstituted as a set of actions, occupations, deferrals, and potentials. This can result in a clash between the 'good intentions' of conscientious settler scholars and the actual impacts of their academic activities and outputs. For this reason, clear and practical anti-colonial research methodologies are required to help settler scholars work in concert with the resurgence work of Indigenous scholars towards relationally accountable decolonial change. (Carlson, 2016; p.496).

To avoid these pitfalls, the concepts of Ownership, Control, Access, and Possession (OCAP) shaped the research methodology for this study. The First Nations Governance Centre OCAP principles are central to ethical research with Indigenous populations (The First Nations

Information Governance Centre, 2014). Informed by OCAP principles, the Tri-Council has developed rigorous guidelines around research with Indigenous communities.

I drew from these concepts and scholarship around ethical engagement (Carlson, 2016; Koster et al., 2012) to strengthen this project. In this context, the project design was centred around OCAP principles and was informed by a Piikáni member, the Chairman and founder of the MCVS, Adam North Peigan, who acted as a Community Research Consultant. The Community Research Consultant coordinated all communication and activities with members of MCVS and provided regular updates about MCVS activities. To ensure the approach for the work with MCVS was ethical, I secured an amendment to the original ethics certificate for my engagement with MCVS members.

Data Collection and Management

The bulk of data collection for this project was in the form of key informant interviews. The first interviewee was the Community Research Consultant, who also set up interviews with two Piikáni Elders who are also MCVS members, Wilfred Yellow Wings and Morris Little Wolf. Written consent was obtained from each participant to participate in the interview and to record the conversation for transcription. I collaborated with the Adam North Peigan to develop an interview guide for the Elders. These interviews took place at each of these Elder's homes and lasted about two and a half hours each. To supplement interview data, I reviewed relevant documents, such as submissions to the Joint Review Panel hearing for Grassy Mountain, Coal Policy engagement submissions, and media and news coverage related to Grassy Mountain mine and the MCVS.

These interviews were a unique opportunity for the researcher to hear Piikáni oral history directly from Elders. To respect the voice of these Elders and the oral nature of Blackfoot culture, the history and findings below rely heavily on direct quotes from conversations with the elders, with additional context and insight from the Community Research Consultant. The Piikáni History section also draws from the book *The True Spirit and Original Intent of Treaty 7*, which compiles oral histories from Elders throughout Treaty 7 (Treaty 7 Elders and Tribal Council et al., 1996).

Protocol and Honoraria

Following guidance from the Research Consultant, engagement with participants for this project adhered to Blackfoot protocol. This included an offering of tobacco to both the Elders and the Community Research Consultant. Participants also received an honorarium and a gift of appreciation for sharing knowledge, based on Blackfoot traditions.

Ownership, Control, Access, & Possession

According to OCAP principles, the information gathered from individuals during the interview process is the personal information of those who have shared it. The interview participants retain ownership over any knowledge they have shared. Consenting to participate in an interview does not waive ownership of their personal information and knowledge. The project was a partnership between the principal researcher and the MCVS, and the Research Consultant was the lead in designing the research process and participated in all phases of the process, from project planning, implementation, analysis, and dissemination of outcomes. Participation in interviews was voluntary, and participants could withdraw their consent at any time. Adherence to OCAP was outlined in the research protocol signed between the Community Research Consultant and the principal researcher.

Case Study Context

Piikáni History

The Niitsítapi, (Real People), commonly referred to as Blackfoot, have inhabited the territory around Grassy Mountain since time immemorial. Their ancestral territory is vast and bounded by the land itself, outlined by Wilfred Yellow Wings as follows, "Yellowstone River to the south, the Rocky Mountains, north to North Saskatchewan River, then east to Big Sandy Hills. The Missouri river goes back to the Yellowstone River." The Niitsítapi are divided into four communities, which together form the Blackfoot Confederacy (Treaty 7 Elders and Tribal Council et al., 1996). This includes the Piikáni, or Piegan; the Siksiká, or Blackfoot; and Kainai, or Blood band in Canada. The border between Canada and the United States now intersects Niitsítapi territory, and one community of Blackfoot, called Amskapi Piikáni, now live across the border in the state of Montana. Prior to European settlement, the Niitsítapi relied heavily on the bison, following them with the changing seasons to encampments throughout their territory (Treaty 7 Elders and Tribal Council et al., 1996).

So, it wasn't just one area that they occupied. It was all different occupied places that they went to, for different reasons. When they came out of the mountains, they followed the buffalo. When the buffalo started to eat certain kinds of grass, they knew that the buffalo was gonna start leaving. So, they started to prepare too, and they followed them. So, in his travels, he went across the whole nations, nation meaning territory, off the buffalo himself. So, the Blackfoot people followed them, right into Yellowstone, right into the Black Hills, by Jasper, in that whole area. They used different plants, different roots of things that the people at that time had to survive on, they had to go get them. So, they followed them. They knew where the buffalo was. Sometimes they weren't there, but from

generation to generation, it was passed on to them, this is where you get that certain route that the buffalo carries for you. Morris Little Wolf

The Eastern Slopes of the Rockies are critical to Blackfoot history and culture, which are centred around their relationship with the land. Many essential elements to Blackfoot life, including spiritual practices, can be found in the Eastern Slopes. For example, ceremonial paints are sourced from specific sites near the rivers flowing from these slopes.

The mountains are so sacred, you know, very, very, very sacred... they'll do anything for you. You go sleep in there and they'll give you a vision, a vision of something. They'll give you a story. Morris Little Wolf

Where Oldman River flows out, the Crowsnest River, Crowsnest River flows and the Oldman River flows. We get the black paint from Crowsnest, and the yellow paint from Oldman River in our homeland campground, where they join ... between Crowsnest and Oldman River was held sacred. The rivers flow each way, west to the west coast and east, and ancient Piikáni refer to it as the backbone of Mother Earth. Wilfred Yellow Wings

The figure of Napi is central to the Blackfoot culture. According to Bastien (2004), “Children were often told the legends of Napi, which contain the sacred teachings of what is means to be human” (p.89). Napi won the territorial rights to the Eastern slopes in a game with the Kootenay, giving the area the name Napi's Playground (Bastien, 2004; Treaty 7 Elders and Tribal Council et al., 1996).

Where the Old Man River flows out, that is where we get the yellow paint. Napi met with this person on the other side of the mountain and this person wanted to claim this area.

He said the whole area is mine. Napi told him we'll play games. So, they played all kinds of games with the bow and arrow, with the spear. At the end... they were even again, so Napi told this guy, this side of the mountains, the river will flow that way. It's the highest point, it's the backbone of Mother Earth, and in the gaps we will visit one another.

Wilfred Yellow Wings

The advent of European settlement brought significant changes for the Niitsítapi. Extirpation of bison herds significantly altered their ability to practice traditional ways of life. Treaty 7 was signed at Blackfoot Crossing in 1887 between five first nations, including the Piikani, and the Canadian Government, facilitated by government commissioner David Laird (Treaty 7 Elders and Tribal Council et al., 1996). Treaty 7 prescribes much of contemporary Blackfoot life (Treaty 7 Elders and Tribal Council et al., 1996). Treaty 7 negotiations were plagued by many issues that inhibited communication, including translators' language fluency and literacy level. Where the government saw the treaty as land surrender, the Indigenous participants understood it as a peace treaty that included provisions for sharing the land, not ceding it (Treaty 7 Elders and Tribal Council et al., 1996). Perhaps most relevant, Indigenous nations agreed to share surface rights with settlers, not mineral rights (Treaty 7 Elders and Tribal Council et al., 1996). One Elder described the events at Blackfoot Crossing as follows:

So, they talked about all different things ... And Mr. Laird ... he got up from his chair and said, "We'll share your land a depth of a plow, and treaty Indians don't have to pay land tax, income tax, any kind of tax, and we're gonna give out the distribution of \$12 to each person that's camped here. ...and when it was all settled, it was, how would you say it, taken as peace treaty. But Mr. Laird made it into signing of the treaty. Each leader held the pen and with the help, made an X. That's forgery. Because we didn't know how to

write, read a word of English. We needed an interpreter. But when Crowfoot made the announcement, "I'm going to lay my arms, no more war, I lay my arms down"... We want to talk peace treaty we're going to make treaty with Mr. Laird representing the Queen. That was taken when Sitting Behind Eagle Tail came back to, back home, he made this announcement, we made make peace treaty. Crowfoot, Red Crow in the South, and Bullhead from the Sarcee, as well as the Stoneys. The treaties were then made. Wilfred Yellow Wings

Drawing from oral history, the Elders spoke about their relations with European settlers and the Canadian government, and the ongoing betrayal that characterized their dealings with them, including a failure to live up to treaty obligations, fraudulent land sales, and corrupt government officials.

This brick sawmill, Johnson Sawmill, set up and he made this road, Johnson Road, meeting the road to Calgary to sell his logs. So, he made this road and he made a road allowance, and the province took over our lands, the Buttes, and we lost out on that land. ...that one on the west side, just east of Pincher, the Indian agent sold it for nine dollars an acre. How come I know? There is a clipping in the MacLeod Gazette, stating Peigan Indian Agent sold a portion, west portion of the Peigan Indian Reserve for nine dollars an acre. We lost that; we lost that land. Wilfred Yellow Wings

Speaking about the natural gas development in Southern Alberta, one Elder stated, “they drilled all in the Porcupine Hills they found it, they piped it to Claresholm, instead of piping it to our reserve. That's our land. Our homeland. That's treaty rights. But we've got no say because our leaders never referred to the treaty” (Wilfred Yellow Wings).

Mountain Child Valley Society

While the leadership of the Piikáni Nation formally supported the Grassy Mountain mine proposal and signed a private IBA with Benga, many nation members opposed the project. One such member was Adam North Peigan (Community Research Consultant). His concern about the project inspired him to engage with other like-minded community members to resist the mine, ultimately forming the Mountain Child Valley Society *Miistakii Pookaw Awahhkoi Kanakkaatsi* (MCVS).

...we (MCVS) are a grassroots organization that came together to have our voices heard with respect to Grassy Mountain because in our situation at home in Piikáni, our leadership, our elected leadership in our community, was fully endorsing and supporting Grassy Mountain, Benga mines, Riversdale Resources. ...I started seeing our grassroots members posting comments on social media their concerns with Grassy Mountain. Their concerns that they felt that they weren't meaningfully consulted, with respect to implementation of Grassy Mountain with respect to, you know, the harms that it would cause to our ancestral territory, so I started seeing a lot of those. So, what had happened is on social media, we formed kind of, we brought together community members that had some genuine concerns, and were feeling that they weren't being heard. We brought them together in a through virtual meetings, and we had the opportunity to start voicing our concerns and giving the community a voice. Adam North Peigan

MCVS members recognized the difficult economic situation facing the reserve and its members but questioned the appropriateness of relying on a coal mine to address these economic issues.

They [Piikáni leadership] were going for that paper rather than the love of nature. Meaning, they were going for that dollar bill, respecting that dollar bill more than they were respecting Mother Nature. In other words, you can't play with Mother Nature. How can you play with her when she does everything for you, you know? Yes, we can make roads on her, we can build homes, it comes from her. Everything, lumber, you name it, that's all Mother Earth. So, we develop it and say, "geez mama, thank you!" Who does that? ... So, we're going this way, tipping the balance. We have to come back and balance Mother Earth again, and balancing needs prayers and asking for forgiveness for people, and it'll take lots of forgiveness. Morris Little Wolf

... the one thing that our leadership has been really vocal about was the was the economic revenue that would come into the community, the whole notion of marketability for employment opportunities, you know, through the trades, right, over a 25-year span. And the thing is that we, the Piikáni First Nation Mountain Child Valley Society, you know, we're very pro economic development. However...the economic revenue and the jobs that will come with Grassy Mountain are not the jobs that we need, you know, we need to think more green, we need to think more know, a sustainable resource, you know, not the renewable energy to sustain our communities, you know, so we are for economic development, we are for, you know, you know, the potential of, you know, jobs for our community, but not these type, right. And the thing is, is that you have to kind of weigh it, the pros and cons, right, and the with, with Grassy Mountain, and the economic revenue and the jobs that will come with it, at what expense at the expense of our environment of our ancestral lands. And for us, that is very, very paramount to us. Adam North Peigan

Piikáni members who opposed the mine were concerned about the environmental and health impacts of a surface coal mine in a fragile and culturally important ecosystem. Part of their concern came from their lived experiences of the impacts of industrial development in the area, including the historical coal mines in the Crowsnest Pass.

If you go back into the 50s, lots of them were dying and some of them were brought to Edmonton, Charles Camsell Hospital, because of what was going through the river from that first coal mine that was floating and we were drinking. We didn't know that in the 50s. They were sick, that's what happened. Morris Little Wolf

...members of the reserve that work from Shell oil company, they worked there for so many years. That dust from the sulphur infected their lungs. Same thing will happen with this coal dust ... Look at the worst when we were inhaling it's nowhere near that. Open miners just to the west of us. Even down to MacLeod, it's gonna affect all the people living down east. Coal dust, it will affect your lungs right quick. Wilfred Yellow Wings

MCVS focused on the responsibility of the Blackfoot to care for the land and safeguard it for future generations.

...we have quite a quite a lot of oral history, you know, you know, in the vicinity, you know, in the Crowsnest Pass, and, and it was because it was our place where we gathered, and where we had ceremony and where we, you know, we picked medicinal herbs, and we had traditional games, you know, up in that area, it was what we believed that it was our place of where we gathered, and it was Napi's Playground, right. So, historically, that area has a lot of sentimental and historical and cultural connection to our people, you know, the Piikáni First Nation. So, as a result, you know, we have a

responsibility, not only to protect the environment, but to protect the history of our people, and our ancestral lands. Adam North Piegan

MCVS Elders also discussed the differences between current leadership structures and Piikáni traditions.

...the word chief just came in somewhere in the 40s, in there something like that. Before that, there were leaders and the leaders looked after everybody, that's what they did. All the rights that they stand up for, and anything to do with occupation of rights, they let everybody know what's happening. ...When it started to be chief, ... the politician kicked in with the person. ...Whereas as a leader when he said this, it went to him and to the community, and they decide, and he agreed and then when on. Whereas a chief, "No, no, I am the chief, I'm going to do what I want." Little did he know that the power is within the community. So, that's the difference. And the warrior, they wouldn't let any of these things happen like it happened. Why? Because he made that commitment, handed down to generation from Crowfoot to him, and he must carry it and stand up for the rights of the generation that follows in any society. And that's what happened. So, you have to back up and say, I'm sorry. ... go back to be that regular leader and quit playing politics.

Morris Little Wolf

Strategies of resistance

Consultation with Indigenous communities was led by Benga, who focused on negotiations with local Chiefs and Council. Because their leadership supported the mine, members who opposed it found no place for themselves in the formal process and chose to employ informal strategies, or "governance from the ground up" (Gobby et al., 2021, p. 2).

...how government and how industry defined consultation is a lot different than how Indigenous people define consultation, and government and industry, you know, they consult the way that they, they think, how consultation should be done. And then they go chalk it up and cross it off of a box, cross off a box on their checklist- done, right? And how government and how industry defined consultation is a government-to-government relationship, right. So, what that means is that the government of Alberta or industry, they go out and they have a have a meaningful, maybe a discussion with the government of a, of an Indigenous community, which is Chief and Council. But that's where it ends. That's where it ends. ...but when you're looking at it from a grassroots nation member, for us, that's not consultation, that's not meaningful consultation. Adam North Peigan

M CVS employed a range of strategies to resist the mine; a multi-pronged approach according to Gobby et al.'s (2021) framework, including enacting Indigenous sovereignty, law and culture, winning the battle of ideas and establishing transformative alliances (Gobby et al., 2021).

Enacting Indigenous Sovereignty, Law and Culture

Before creating the organization, the Research Consultant consulted with Elders, as per Blackfoot protocols and traditions, who held ceremonies, including a sweat lodge, to formalize the creation of the society and its name. According to Blackfoot culture, this approach provided legitimacy to the M CVS to do this work on behalf of the community.

So, going back to this, the beautiful Creator's help to keep that future a picture of how he wanted it, not us, and using his children, like him [Adam North Peigan] to stand up and do something. And for us as grandpas, knowing the rights, to stand behind him and give

him, they call it, the backbone of Creator's words, "Don't do it. It doesn't belong to us." We made so many people cry when using those words- happy cry. So, all in all, with things like that, you use the Father and ask him for help. He owns it, you know, he owns things that we don't and for everything we do, like I mentioned before, it belongs to the children and grandchildren to make a better plan for them. ... And that's when he stood up the future generation of people. That's what made it so strong. ... So, Mountain Child Society then kicked in, and the name in the sweat. Asking the grandpas, "This is what we could do. We'll give it a name".... So, we had to sweat for it, and that's what happened.

Morris Little Wolf

The name that the Elders gave to the society was rooted in Blackfoot history and ancestral connections to the Eastern Slopes.

So, they used to winter in that whole valley. That's when the whole Blackfoots were still one tribe. And in that time, they used to camp there for the winter. ... So, they all wintered up there. Lots of kids were born there. And that's one of the names that came there, a child of the mountains, [miistakii pookaw], mountain child. And so, when the elders talked about where their dads came from, they'd say [miistaki oka], he was born in the winter. And that's where the place was, and their mothers. And I'm talking about before 1877. ... So that's how come the child, Mountain Child Society that was given. It wasn't just like a dream. It was real. Morris Little Wolf

As discussed above, Elders shared how the parameters of Treaty 7 limited settler access to the land "to the depth of a plow" (Wilfred Yellow Wings). This is an important distinction as it leaves mineral rights in Treaty 7 territory squarely in the hand of the Blackfoot.

... before the signing of Treaty Seven, that was our historical ceremony, ceremonial grounds, our hunting grounds where we used to go pick medicines, and our ceremonies like the thunder pipe medicine is tied to the Rocky Mountains and so, ...it's a reclamation of claiming that as ours, and in order to do that we need to be able to protect it. Adam North Peigan

MCVS grounded their opposition to the mine in Blackfoot culture and ceremony, their inherent rights as the original occupants of the land, their Treaty 7 rights, and the sense of responsibility to the land and to future generations that is central to the Niitsítapi worldview.

Winning the battle of ideas

Raising awareness about Grassy Mountain took many forms, including engagement with news and social media platforms. MCVS participated in letter-writing campaigns to federal and provincial politicians which were coordinated with other organizations. MCVS also participated in peaceful gatherings to bring awareness to the mine and its impacts on the land and the community. The largest was a convoy that began in the Crowsnest Pass and proceeded to Brocket, described by Adam North Peigan below.

The week before that decision came down in June, the Piikáni First Nation Mountain Child Valley Society, we coordinated a big rally. ... It was a big, big rally. And we invited all of our non-native, our non-indigenous partners, you know, to participate and they just jumped on board with it because they knew that the Indigenous perspective was going to weigh heavily in the whole notion of Grassy Mountain. ...we coordinated a convoy of vehicles the week before from Crowsnest Lake, just past Coleman. And there was probably about 80 vehicles. And we drove along Highway three going east, through the

Crowsnest Pass along Highway Three, past Cowley, past Pincher Creek turn off. And the intent was when they came up the hill, that big dip when they came up the hill and came into our community that we were going to convene a rally down in the valley of High Bush. However, what happened that day was the leadership, the elected leadership in our community, imposed a media ban, as well as a ban of non-nation members from entering Piikani, and they use the pandemic as the smokescreen ... it almost became like a somewhat of a little standoff along Highway Three. And we actually stopped traffic, because there were people that were going back and forth, you know, traveling west or going east, you know, tourists, and we literally stopped traffic through our community. And there was Global, there was CTV News, there was CBC, and they filmed the whole thing. Adam North Peigan

As Grassy Mountain mine became more controversial, interest in the project grew across the country. In the context of Covid-19, in-person information sessions were challenging to organize. Mine opponents organized multiple webinars to facilitate pandemic-safe meetings and accommodate participants from across the country and internationally. MCVS participated in these webinars to raise awareness and provide context from a Piikáni perspective.

Transformative alliances

The MCVS established alliances both within and outside the Piikáni Nation. The Community Research Consultant initially reached out to Nation members to determine the level of opposition to the mine in the community. Through the MCVS, he created a space for these members to come together and develop strategies for resistance, hosting regular online meetings for members.

MCVS also made significant connections with other individuals and organizations in the region. This included other grassroots community organizers as well as provincial and federal environmental organizations. In addition to establishing one on one relationships with these groups, the MCVS also brought diverse organizations together to collaborate, creating new networks in the region.

...we worked very, very closely with them [other organizations], ...because we all had a common goal. So that's how we came together, and we developed a very good working relationship with them. And at the end of the day, all those partners, even though they saw the internal struggle that we had within our community because of our leadership, they still really, really supported us in the work that we had done. Adam North Piegan

Discussion

The efforts of the MCVS and their partners were very successful in raising awareness about the Grassy Mountain mine because they employed multiple strategies and worked collaboratively with other organizations. This work played a role in the public discourse about the project and was instrumental in drawing out the federal government to speak against the mine. Further, several broader federal initiatives and guidelines related to coal mining emerged during this period, likely due to advocacy work and the subsequent public pushback against coal mining. In a surprise turn, the regulator denied the Grassy Mountain application, and infringements on Indigenous values formed a significant part of the panel's decision (JRP, 2022).

Indigenous communities are often at the forefront of resistance to resource extraction in Canada, and scholars have emphasized the importance of celebrating and support Indigenous mobilizations (Gobby et al. 2021; Scheidel et al., 2020). Beyond its role in the debate around

Grassy Mountain itself, the work of the MCVS left an ongoing legacy in Southern Alberta. For example, by bringing people together regularly, MCVS built new relationships and collaborative working partnerships among diverse actors in the region, creating new networks that can be activated for future collaborative work. Creating alliances is a compelling resistance strategy (Conde, 2017). Further, awareness raising increased local knowledge both about coal mining and the regulatory regime it operates within. Perhaps most importantly, this was an opportunity for settler Albertans to learn more about Blackfoot culture and the parameters of Treaty 7.

While celebrating successes is essential, it is also important to recognize that resistance efforts are challenging and require significant resources. Involvement in resistance to the Grassy Mountain mine required many hours of labour, but MCVS members were all volunteers. The environmental impacts of extractive projects affect everyone, particularly when cumulative impacts are considered. While fighting for the future of their communities, Indigenous resistance movements are also benefitting society at large. Given the synergies across these social movement organizations, there are meaningful opportunities for collaboration and support from non-Indigenous groups (Scheidel et al., 2020).

This case highlights some challenges with Indigenous consultation within IA processes. The mine proponent negotiated directly with the Chiefs and Councils of Blackfoot Nations and gained their support for the project. While this consultation appeared compliant with legal obligations, MCVS and other organizations were frustrated by the lack of direct engagement with grassroots nation members. An analysis of the MCVS also provides insights into why community members engage with informal, rather than formal, governance strategies for resource extraction projects. For MCVS members, suspicion of the formal processes was rooted in a long history of fraught relationships between the Blackfoot and the government, including

broken treaty promises. Further, Indigenous worldviews and relationships with the land are not easily incorporated into these formal processes.

Conclusion

Although the Piikáni Nation Chief and Council supported the Grassy Mountain mine, this position was at odds with the views of many Piikáni Nation members. As relayed by local Elders, Grassy Mountain is part of a particularly sacred portion of Blackfoot ancestral territory. The destruction of this land, and the waters flowing from it, would significantly impact sites that are central to Blackfoot culture. For the members of MCVS, safeguarding this land for future generations is a moral responsibility. Further, ongoing betrayals by the settler state since first contact has reduced trust in formal regulatory systems. Seeing no place to express their views in the formal system, local mine opponents established the Mountain Child Valley Society (MCVS) to organize opposition against the mine. The MCVS used multiple informal strategies to influence decision-making, including enacting Indigenous sovereignty, law and culture, winning the battle of ideas, and establishing transformative alliances (Gobby et al., 2021). This study sheds light on how people engage with IAs through informal governance strategies, how the worldviews and historical context of the Blackfoot influenced perspectives on the mine, and the additional governance challenges that emerge when there is no consensus within a Nation about industrial projects.

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Chapter 3: Contending with place and values as drivers of support and opposition to a surface coal mine

Introduction

Large development projects such as coal mines often lead to conflict which, on its face, seems to be simply about jobs versus environment. The assumption that economic interests and environmental protection are inherently at odds is not borne out by research, however, and can derail efforts to resolve resource development conflicts (Kalt, 2021). Further, conflicts over development are frequently intense and challenging to move past because they involve deep cultural frameworks and values (Kojola, 2020; Farrell, 2015). Planning must therefore consider the values of the public if natural resource management is to be effective (Larson et al., 2013). Focusing on jobs versus the environment obscures the complex ways people understand resource development. Perceptions about extraction projects are more than just an impassive assessment of risks and benefits. Economic and environmental factors are important, but so are other issues (Larson et al., 2013; Karasmanaki et al., 2020). Scholars have demonstrated how social factors such as political ideology, culture, values, and sense of place influence how people perceive the risks and benefits of projects (Jerolmack & Walker, 2018; Kojola, 2020; Willow, 2020). Attitudes toward resource extraction projects are a complex and context-specific interaction of influences, making for significant individual and community variation (Kojola, 2020; Neumann, 2016).

Understanding divergent views on specific development projects requires an analysis of cultural frameworks and values that underpin people's attitudes toward development. To this

end, scholars are increasingly looking to concepts like sense of place to paint a more robust picture of the influences on attitudes toward development (Kojola, 2020; Neumann, 2016; Willow, 2020). Some of this scholarship also focuses on the underlying values that inform sense of place, such as environmental worldviews (Buanito et al, 2002). Examining sense of place can illuminate why people accept or oppose development; combined with environmental worldview, this analysis becomes even richer. A better grasp of the connection between place and the values people attribute to the natural environment could help governments address conflict related to conservation and natural resource management (Larsen et al., 2013).

Drawing on literature regarding place attachment and environmental values, this chapter explores the drivers of support for and opposition to the proposed and subsequently denied Grassy Mountain coal mine project. Seeking to break down the common binary between jobs versus the environment, I address the following questions:

- What influenced resident views on the project?
- What is the role of place attachment and environmental values in understanding and responding to potentially hazardous industrial development?
- How do place attachment and values interact to shape these attitudes?
- What do these interactions reveal about what is at stake for communities at the center of resource extraction disputes, beyond two-dimensional jobs versus the environment assumptions?

Literature Review

Sense of Place

Sense of place is “a term that broadly refers to the meanings, attachments, and degree of satisfaction individuals hold toward a particular setting” (Sutchya, 2020, p. 2). Human understandings of place are “made meaningful through social, political, and cultural processes of

lived experiences, collective memories, emotions, and ideologies as well as political-economic forces” (Kojola, 2020, p.677). Sense of place is thus formed by a complex interaction of factors such as physical location, socio-cultural context, and individual characteristics (Larson et al., 2013; Suchyta, 2020; Vorkinn & Riese, 2001). According to Clermont et al. (2019), “Our “sense” of a place envelops our physical sensory experiences there, our knowledge of the place, and the emotional, symbolic, and moral significances we associate with it” (p. 191).

Social or environmental elements both play a role in sense of place, though one or the other can be more or less significant (Lewicka, 2011; Quinn et al., 2019). For example, for newcomers to a community, connections to place are more likely to be based on the environment, but over time, these community and social ties can become more important (Larson et al., 2013). Within sense of place literature, there is debate about the role of the physical environment (Brandenburg & Carroll, 1995; Stedman, 2003; Sutchya, 2020). The concept of place is not just a social construction; the material reality of a setting affects the sense of place, and people derive meanings from place in mutually constitutive ways (Stedman, 2003; Suchyta, 2020). The landscape's appearance is essential to developing place attachments (Dakin, 2003; Clermont et al., 2019; Larson et al., 2013). Different types of landscapes elicit different emotional reactions, and many people have distinct preferences for specific landscapes or features, such as aesthetics or wildness (Brown & Raymond, 2007; Kaltenborn & Bjerke, 2002).

Sense of place at non-local scales is less theorized (Chapin & Knapp, 2015; Lewicka, 2011), but can occur when certain places form place identities for people who do not actually live there (Brown & Raymond, 2007). Tourists or temporary residents can form strong place attachments, and people can also transfer place meanings from one similar place to another, particularly for idealized locations (Brown & Raymond, 2007; Chapin & Knapp, 2015). For

example, Batel et al. (2015) argue that the countryside has been idealized in Western societies and is embedded in collective identities. Rural communities are often seen as peaceful, more simple places, free from many of the pressures of urban life, the so-called “rural idyll” (Batel et al., 2015; Sherval & Hardiman, 2014). Where urban environments are assumed to be polluted, rural environments are pristine and untainted, with close-knit and friendly communities (Batel et al., 2015; Sherval & Hardiman, 2014).

Environmental sociology literature explores how individuals and communities use place to understand and frame positions on resource management (Kojola, 2020; Larson et al., 2013; Sutchya, 2020). Sense of place influences the perceived positive or negative impacts of development (Sutchya, 2020; Vorkinn & Reise, 2001). Development can disrupt the sense of place, leading to opposition to energy development (Sutchya, 2020; Vorkinn & Reise, 2001). However, energy development can also enhance existing place meanings (Sutchya, 2020). For example, Kojola found much support for new mining activity in Minnesota because it strengthened existing identities connected to mining (Kojola, 2020).

Because sense of place is tied to personal values and experiences, one geographical area can play host to multiple, sometimes incompatible, place identities (Chapin & Knapp, 2015; Kojola, 2020; Larson et al., 2013). Conflicts can emerge when developments are perceived as alternately threatening or reinforcing place-based identities for different community members (Ignatiadis et al., 2021). These clashes can be extremely intense because of the deep cultural meanings of place that can be threatened by industrial development or changes to existing land use (Ignatiadis et al., 2021). Different groups use representations of place to create insider and outsider groups, reinforcing the legitimacy of certain perspectives and who can “speak for the place” (Kojola, 2020; Lewicka, 2011; Palmer, 2011).

Coal places

In places where a particular energy regime, such as coal, is entrenched, the industry can become enmeshed with individual and community identities (Bell & York, 2010; Lewin, 2019; Olson-Hazboun, 2018). Coal mining history shapes identities based on collective class experiences grounded in struggle and hard work (Lewin, 2019). Many coal mining towns, like those in the Crowsnest Pass, were developed because of the mine (Van Assche et al., 2021; Wilson et al., 2005). In so-called company towns, the coal company controlled much of the everyday activities of community life (Lewin, 2019; Van Assche et al., 2021). Community members identified as miners and were proud of this identity (Van Assche et al., 2021). Beyond a source of employment, coal mining can become a way of life (Bell & York, 2010; Lewin, 2019; Van Assche et al., 2021). Coal mining identities do not develop organically, and coal companies are often instrumental in creating and reinforcing coal-based place identities (Bell & York, 2010; Lewin, 2019; Olson-Hazboun, 2018). For example, in Appalachia, the coal industry has invested millions in marketing and lobbying to strengthen its reputation and embed it in local identities, promoting a coal heritage reinforcing local working-class values (Bell & York, 2010; Lewin, 2019; Mayer, 2021).

While mine proponents emphasise the economic benefits of coal, employment in coal mining has declined significantly in recent decades due to market factors, mechanization, and attempts by governments to phase out coal power (Bell & York, 2010; Della Bosca & Gillespie, 2018; Van Assche et al., 2021). Global environmental concerns have put pressure on governments to regulate and phase out coal-fired electricity (Bell & York, 2010; Della Bosca & Gillespie, 2018; Kalt, 2021). While coal has historically been central to energy strategies in Canada and other nations, public opinions about coal have declined due to an increasing

understanding of its environmental and health impacts (Bell & York, 2010; Della Bosca & Gillespie, 2018; Mayer, 2021).

Despite coal's decline, studies in mining regions find that the coal mining identities are resilient, persisting long after mines shut down (Bell & York, 2010; Lewin, 2019; Price, 2020). According to Lewin (2019), coal producers in Central Appalachia continue to enjoy widespread support even though they “have degraded the environment; destroyed material infrastructure; economically exploited workers; subjected workers to dangerous working conditions; expropriated residents' land; and exposed residents to health risks associated with pollution” (p.51). Coal corporations have doubled down on efforts to keep coal identities alive, and efforts to transition to renewable energies spur active resistance from industry through lobbying efforts and on-the-ground campaigns (Bell & York, 2010; Lewin, 2019; Mayer, 2021).

When mining is central to constructions of place, place attachment is a de facto attachment to the industry. A transition away from coal can feel like an attack on a way of life for residents caused by meddling from outsiders (Bell & York, 2010; Della Bosca & Gillespie, 2018; Lewin, 2019). In this context, new mines can be viewed as protecting community identities, while environmental protections are a threat (Kojola, 2020). Van Assche et al. (2021) describe how coal mining has been romanticized and remains central to the local sense of place in the Crowsnest Pass, even though the last mine closed in 1980. This attachment to coal gets in the way of diversification efforts and limits the ability to imagine alternate futures for the community (Van Assche et al., 2021).

Coal was historically viewed positively economically, socially, and culturally, so contemporary framings of coal mining as unethical can feel like an attack (Bosca & Gillespie, 2018; Frantál, 2016; Olson-Hazboun, 2018). Della-Bosca & Gillespie (2018) argue that pushes

to reduce reliance on fossil fuels can deepen the hegemony of extraction-based regimes when communities and industry work to resist these changes. Lewin (2019) found that residents in Appalachia felt that the government focused on the environment at the expense of their very lives. Coal mining communities often see regulation on fossil fuels as an attack on blue-collar jobs and a threat to the existence of their communities, caused by outsider meddling with little understanding of the real-life implications for impoverished coal miners (Lewin, 2019; Kalt, 2021; Olson-Hazboun, 2018).

Even when industry is a dominant land use, other meanings of place can develop based on different uses or values, such as recreation, agriculture, or environmental conservation (Kojola, 2020). In mining regions with weaker relationships with the coal industry, strong place attachment can predict opposition to coal mining (Della Bosca & Gillespie, 2018; Frantál, 2016). Some research suggests that these alternate place identities are often held by people living in other, more urban places (Dokshin, 2016; Jerolmack & Walker, 2018; Kojola, 2020), though other studies challenge this assumption. For example, in the Czech Republic, Frantál (2016) found that place attachment among residents was the strongest predictor of opposition to coal mining, particularly for those with emotional and spiritual connections to the landscape. Frantál (2016) does not distinguish between residents who are born there and those who have migrated, however, and place attachment can be high among residents who have migrated from other places (Brown & Raymond, 2007; Chapin & Knapp, 2015).

Ecocentric vs Anthropocentric Values

As discussed, sense of place is underpinned by values, and values related to our relationship with the natural environment are central to understanding attitudes toward extraction projects (Brandenburg & Carroll, 1995; Wynveen et al., 2013). According to Kojola (2019), “Environmental sociology emphasizes how place-based identities are created through

understandings of nature and people's emotional and moral connections to the nonhuman environment" (p. 677). The relationship between place attachment and environmental worldview is not unidirectional. Beliefs and values underpin sense of place; thus, environmental worldview is instrumental in shaping a sense of place. Environmental worldviews are also influenced by people's connection to place and can change based on context (Bonaiuto et al., 2002; Wynveen et al., 2021). Bonaiuto et al. (2002) argue that, "pro-environmental attitudes, just as other psychological processes, should be conceived as place-situated phenomena and therefore should be studied taking into account and dealing more directly with the places or situations they refer to or are embedded in" (p. 634). Brandenburg and Carroll (1995) found that a shared sense of place may be informed by diverse underlying values, leading to conflicting approaches to environmental management. Further, experiences with a particular place can "alter one's group-based belief systems", influencing attitudes toward the environment (Brandenburg & Carroll, 1995). An examination of environmental values is therefore central to understanding sense of place.

Scholars have taken numerous approaches to understanding people's environmental worldview (Brown & Raymond, 2007, Wynveen et al., 2021). For example, a cultural theory approach focuses on cultural worldviews: hierarchical, individualist, egalitarian, fatalist, and autonomous, which underpin four "myths of nature": nature capricious (fatalist), nature perverse/tolerant (hierarchical), nature benign (individualist), nature ephemeral (egalitarian) (Steg & Seivers, 2000). Dunlap and Van Liere's 1978 New Ecological Paradigm, later revised to the New Environmental Paradigm (NEP), is perhaps the most common measure of environmental worldview (Brown & Raymond, 2007; Dunlap et al., 2000; Wynveen, 2021). The NEP is a metric to evaluate environmental worldviews on a spectrum from ecocentric to

anthropocentric and describes the motivations and values that drive pro-environmental attitudes (Dunlap et al., 2000; Wynveen, 2021).

Because human/environment relationships are complex, there are limitations to using quantitative approaches. The original NEP has been criticized for not including social and psychological considerations, though subsequent scholarship has expanded on the NEP, centring values and beliefs (Bonaiuto et al., 2002; Dunlap et al., 2000). Critiques remain, however, about the applicability of the NEP given, among other things, changing cultural norms and differences among geographical areas and sample demographics (Hawcroft & Milfont, 2010). Kennedy (2022) argues that researcher values impact the development of scales used in quantitative studies, influencing the outcomes. Cultural theory approaches have also been criticized for its lack of clarity and explanatory power (De Groot et al., 2013). Attempts to categorize worldviews into linear patterns or binaries can obscure the complicated ways human beliefs and values interact with other contextual factors. For example, some people may hold beliefs that fall into more than one category or appear contradictory (Castro & Lima, 2001). There has been some qualitative work that enriches quantitative approaches, such as Kennedy's 2022 book, *Eco-Types*. This work was based on extensive interview data, which categorizes people into five eco-types reflecting their relationship with the environment (Kennedy, 2022).

Recognizing these multiple approaches to defining environmental values in quantitative and qualitative ways, this study links back to some of the pioneering work on NEP as a basis to define, rather than measure, the spectrum of environmental worldviews. The NEP is relevant here for two reasons. In spite of its limitations, the NEP is still the most widely used and accepted framework for understanding environmental worldview (Brown & Raymond, 2007; Dunlap et al., 2000; Wynveen, 2021). Further, although the NEP can represent a binary

(anthropocentric versus ecocentric), the authors conceived of the NEP as a spectrum, allowing for variation among individuals (Dunlap et al., 2000; Wynveen, 2021).

Drawing from the concepts in the NEP, anthropocentric values are based on assertions that humans have the right to modify their environments, and human ingenuity is sufficient to ensure that impacts are managed. In this view, the balance of nature is resilient and can cope with the impacts of modern industrial activity. Anthropocentric views tend to downplay the current ecological crisis and believe that, used responsibly, the earth's resources are sufficient to meet human needs (Bonaiuto et al., 2002; Dunlap, 2000; Wynveen et al., 2021). By contrast, ecocentrism is underpinned by the notion that non-human entities have rights equal to humans, and the balance of nature is fragile and easily disrupted by human activity. In this view, we are already nearing the earth's natural limits, and are facing an existential ecological crisis (Bonaiuto et al., 2002; Dunlap, 2000; Wynveen et al., 2021). Individuals with ecocentric and anthropocentric views may be concerned about environmental issues, although underlying motivations and values are different (Bonaiuto et al., 2002; Kennedy, 2022; Thompson & Barton, 1994). For example, people with anthropocentric views may focus more on the amenities provided by the environment, whereas ecocentric perspectives may be concerned with the intrinsic value of the ecosystem (Bonaiuto et al., 2002).

Interactions between sense of place and environmental worldview

Scholars approach the relationship between environmental worldview and place from a range of angles. For example, rather than developing novel theoretical approaches to address gaps in the NEP discussed above, some authors have drawn directly from place scholarship (Bonaiuto et al., 2002). Dlamini et al. (2022) consider place and environmental worldviews scholarship to be branches of the larger body of literature examining human-nature relations. Still other scholars have examined the role of place and environmental worldviews in pro-

environmental behaviours (see, for example, Wilkie & Trotter, 2022; Wynveen et al., 2021). Larson et al. (2013) demonstrate how sense of place aligned with how individuals prioritized environmental, social, or economic values.

Brandenburg and Carroll's 1995 study of stakeholder attitudes toward the management of a river basin demonstrated the complex ways sense of place and environmental worldview interact to inform people's attitudes about resource management. Stakeholder views on how the basin should be managed was influenced both by their sense of place and their values.

Brandenburg and Carroll grouped their participants into categories based on their sense of place as it relates to the river basin. Among stakeholders with the strongest sense of place associated with the river basin (Level A stakeholders), there were differences in how they perceived management. While all Level A stakeholders wanted to preserve the basin, only those who emphasized its intrinsic value (ecocentric) were willing to modify their own use of the area (Brandenburg & Carroll, 1995). Other Level A stakeholders who valued the area for its aesthetic value and recreational amenities (anthropocentric) resisted management options that restricted their personal use of the area (Brandenburg & Carroll, 1995).

Environmental worldviews and sense of place are difficult to disentangle but are important to examine because they shape attitudes toward resource development. This study seeks to engage with this literature to examine how sense of place and a particular set of values related to environmental worldviews interact to inform opinions about the Grassy Mountain mine project and what is revealed about the values and priorities of participants.

Findings

Interview data revealed multiple conceptions of place coexisting in the area, based on individual identities, experiences, and relationships with the landscape. All three emphasize social and landscape elements differently, though the social and physical are important in all.

The Valley that Coal Built

For many in the Crowsnest Pass, sense of place is inextricable from coal mining history and the coal industry's role in the region's development. Although the local municipalities have not collected any income from coal mining since the last active mine closed in 1980, coal mines in British Columbia are still major employers for the Crowsnest Pass and the surrounding area (Van Assche et al., 2021; Wilson et al., 2005). As one participant said, "We wouldn't be here without coal" (Community Member 07). Visible reminders of mining, such as scars on the landscape, slag piles, remnants of coke ovens and other mining infrastructure are prominent throughout the valley. Numerous local tourist attractions are centred on coal mining history (Van Assche et al., 2021). One participant described how locals like to ride bikes in old strip pits.

The hardships associated with coal mining, and the ability of locals to band together to overcome them, are embedded in local culture and sense of place. Historical coal mining practices made mining a dangerous occupation, and the mining towns in the Crowsnest Pass have experienced a disproportionate amount of hardship and tragedy (Buckley, 2004; Van Assche et al., 2021; Wilson et al., 2005). For example, the Hillcrest Mine disaster remains the deadliest mine disaster in the province's history (Buckley, 2004; Wilson et al., 2005). Though unrelated to the mine, a major landslide off Turtle Mountain buried much of the burgeoning coal town of Frank in 1903 (Buckley, 2004; Wilson et al., 2005). Even the local environment is harsh, with intense winds and unpredictable weather.

There has been a lot of tragedy, a lot of overcoming adversity and stuff like that, and that a lot of that is on the landscape, right, so you had all the mining disasters, and you had

all the Frank Slide that everything like that, right, that happened as a result of the topography and the landscape. ... they might get kicked down really hard, but they're always getting back up. And they can overcome that stuff. And I think it also creates a bigger sense of community. ... and I find that spirit is still here in the Crowsnest Pass.

Community Member 09

Coal corporations are also quite active in the Crowsnest Pass and continue to be visible in community life. Teck Resources sponsors local initiatives such as a multi-use trail system and COVID-19 support, including donations to the food bank and Meals on Wheels program in the Crowsnest Pass and donations to the Crowsnest Pass Health Foundation (Lindsay, n.d.). Prospective Australian mining companies, including Benga, have made investments into the community, including donations to the food bank, participation in local events, sponsoring annual “Australia Day” fundraisers, and perhaps most significantly, investment in a substantial upgrade to the local golf course (cite).

This sense of place rooted in the coal mining history of the region was most often, though not solely, held by long-term residents and was connected more with the social aspects of the community rather than the physical landscape.

Eastern Slopes as the Wild West

North and East of the Crowsnest Pass, the region around Grassy Mountain is foothills and fescue grassland. Both the geography and culture are different here. European settlement of this area was focused on agriculture, though many farmers and ranchers also worked in the mines to supplement their incomes. In the MD of Ranchland, ranching and agriculture remain the dominant land use. Ranching is seen as a noble profession, providing food regionally and to the nation. Like mining culture, a strong sense of community is central to the sense of place in the grassland, as homesteaders had to rely on each other to survive.

Though not in the mountains, the grasslands are an iconic landscape in their own right. Compared to much of the rest of Alberta, the landscape has mostly stayed the same. Ranchers described how fescue grasslands evolved with the bison, who shaped the landscape through grazing. After the extirpation of the bison, cows filled the bison's role as a large ungulate in the ecosystem, keeping the land use relatively similar. As one rancher said, "it's one of the last of the Wild West, and it's one of the last of the landscapes outside of the national parks that still exists today" (Rancher 01).

The integrity of the grassland ecosystem and water resources is central to ranchers' livelihoods, and stewardship of the land is an integral part of ranching identities. Because of their work directly on the land, ranchers understood the existing pressures on the landscape and the dynamic nature of the ecosystem.

...we have, some of the best grazing native grasslands and fescue in North America, if not the world....agriculture is sustainable. We're doing better all of the time. We talked a lot about carbon sequestration. So, everyone in this neighbourhood, we all work on protecting and preserving the native grasslands in our watershed. Rancher 01.

Despite appearances, Ranchland is changing as well. Ranching is a business with very tight margins, and few can make a go of it without inheriting land. Similar to other agricultural areas, larger operations are beginning to move in where family operations previously dominated. Some ranchers have had to look for other ways to supplement their incomes, such as guest houses and other tourist opportunities. Although the MD of Ranchland has bylaws to prevent subdivision, surrounding MDs do not. There are many acreages with non-ranchers in the region, which impacts the local culture and sense of community.

So generally, the nature of the community has changed over time. ... when we first moved here, you had complete freedom of movement on all of the ranches here, you could walk and ride horseback anywhere you wanted. Basically, once, once you initially asked permission, then you are free to go. The only restriction was no fires, no vehicles and close the gates behind you. And then that basically you had was like living in a national park in some ways, because you could just go wherever the hell you wanted. This country is, lends itself to riding and hiking, as you know, because it's all open slopes and ridges and incredible. Now that's changed quite a bit with the advent of newcomers because it seems like the first thing they do is put up signs that say no trespassing immediately ... that creates ill-feeling you know, and but generally speaking, the people here for the most part, get along pretty well with each other. Hearing Participant 02

In the agricultural landscape of the grasslands, community remains important, as does the agricultural history and focus on ranching centres the grassland ecosystem and the notion of land stewardship.

An Iconic Wilderness Landscape

Local demographics have changed significantly since the end of coal mining. Lifestyle migrants have explicitly relocated because of the geography and rural lifestyle. The Crowsnest Pass is one of only a handful of Alberta towns in the mountains outside national or provincial parks, so residents can access the mountains without the restrictions associated with living in a park. These residents' sense of place is tied to the natural beauty, the recreational amenities and a serene, rural lifestyle.

I like the community, the people. ... I like the landscape, and accessibility. I like that there are some regulations, that we don't live in a National Park, but that there is

progression to care for the area. And I like that we just have wilderness around us. And it's a great place to raise a family and lots of opportunities here. Community Member 04

Community and culture are important, but for these interviewees the location in the mountains or foothills is equally, if not more, essential. This is a place defined by natural beauty, wilderness, and rugged mountain landscapes. Even participants who did not live in the area had connection to the Eastern Slopes and recognized its role in Albertan and Canadian identities.

In many ways, it's kind of the poster child that the province uses for attracting people to come to the province. You know, aesthetically spectacular. One of the most diverse landscapes we have, in terms of landform, whether it be climate or soils or topography. And then it reflects, that diversity reflects itself in plant community dynamics and and exceptional biodiversity. Subject Matter Expert 3

...this is a landscape that's crucial to the Alberta identity, or a part of their identity as Albertans....it's also an iconic landscape that is an important part of what defines this country, you know, what defines Canada. So I think it's also an important part of the Canadian, you know, the, the Canadian identity as well. Environmental Organization 05

These different viewpoints reflect the various ways that people in the area perceive place. Although various components are stressed differently, there are recurring themes, such as the significance of the small-town sense of community and the significance of the mountain and foothills environments.

Place, Values, and Attitudes Toward the Mine

While not necessarily incompatible, place identities became contentious when they informed conflicting opinions toward the mine. Reflected in these different “places” were values

related to the environmental worldviews of participants, which also helped shape perceptions of the risks and benefits of the mine proposal.

Mine proponents and anthropocentrism

A sense of place influenced by the coal mining history of the area, underpinned by anthropocentric values, informed many of the pro-mine opinions expressed by participants. Although the arguments for the mine generally centred on the economic benefits, the coal history and emotional connections to coal were the basis for pro-mine campaigns, which include slogans like “We are a Coal Town” and “We Love Crowsnest Coal”. Participants were concerned about the cultural change already happening with the influx of lifestyle migrants moving to the area, the resulting increase in housing prices and local families being displaced as the community becomes too expensive. The community has lost a number of local industries in addition to coal, and locals are concerned about blue-collar jobs disappearing and young people moving elsewhere for work. The change was framed as a class issue, with rich and powerful outsiders displacing working-class locals. Whereas coal mining is associated with hard work, class struggle and solidarity, newer industries like tourism are associated with gentrification and low-paying jobs. Many of these participants do not see tourism as a viable economic alternative and describe the region as struggling, even dying, with coal mining or other industry the only hope for the future.

Well, basically, we have coal roots. There is a small influx of recreational business, although it's quite minimal. The community is a struggling community without enough funds to maintain the extensive road systems that we have, and that's why it's necessary that we have some jobs, actual jobs. Our community would be nothing without coal, because right now, about 400 people travel into Sparwood, and the Elk Valley, to mine coal. So, if those jobs were removed, this town would completely collapse. ... So, when

people say, "Oh well, this is a chance for a recreation take hold in the area", this is a fallacy. I mean, we would just have almost nothing. There have been 40 years since coal really was not happening here, and that is plenty of time for the recreational people.

Community Organizer 01

Participants who supported the mine valued the natural beauty of the area, cared about the environment, and resented insinuations to the contrary by mine opponents. Mine supporters talked about the importance of the mountains to local identity and the benefits of living in the area, such as recreational opportunities, the rural lifestyle, and the health benefits of the unpolluted natural environment.

...the way I perceive the environmental movement in general, is a, I'm gonna call it a self-righteous, virtuous bandstand, of wanting to save the earth. And yet, we all understand environmental issues are important, like it would be foolish to not look after our environment. Ralph Tiegen

I consider myself a very strident environmentalist, because if I do a crappy job on my environment, it costs me, and so it's very important for me to take care of the ecosystem that I have control over. And so, the better job I do there, the better off our ranches and our cattle are our families are. And, and if I, If you're more extractive, let's say, like a vicious capitalist, it only lasts for two or three years, and then and then you've denuded your environment, and it won't be able to maintain that kind of extraction, I'll say. So, it's not in our interest to do so, if we want to be here for a long time, and we do, I want to be here a long time, I want to be able to live out my years here and have a ranch that's available for kids. And then on the other end, we're fighting with environmentalists who, who don't like anything to happen, no change, leave it the way it is, it's better to have

trees than to have a wood house, or it's better to have the coal in the ground than to have a steel car. Rancher 04

While valuing the aesthetic values of the landscape, participants focused on the functional aspects of the land and the landscape in terms of its economic and recreational potential. For some ranchers, preserving an idealized aesthetic is a luxury for those who do not make their living on the land and understood that the ecosystem is not static but constantly changing regardless of human intervention. As one rancher stated, “*we can't eat trees*” (Rancher 04).

For supporters of the mine, the struggles of the human communities in the valley should take precedence over the ecological impacts, reflecting a human exceptionalism point of view. Mine supporters emphasized the need for jobs, given the community's economic struggles. While supporters understand that there will be some environmental impact, they are willing to sacrifice some ecological value for social value.

It's a trade-off. ... it's not perfect. But you can't have a pristine environment and have a bunch of high paying jobs too... We are a resource province, as well. And it would have been nice to have some of those benefits for change in this community. Community Member 09

For many locals, leaving the coal underground was an existential threat to the community. The area has been in decline in the decades since mining ended, and for some, large-scale industry like coal is the only way to keep the local economy viable. As one community member stated, “*Are we actually in business? Or are we going to try to just become a preserve?*” (Community Organizer 01). Many locals described people against the mine as outsiders with no real stake in the community's future, hypocritical environmental organizations

that simply want to either end all industry or preserve their playground. This perceived outsider influence particularly rankles in a local culture that values independence and autonomy.

In my experience, the majority of the people who are against coal mining are people who work for the government and have good pensions. So, it's those people or its people who've moved here from Canmore. And they want a playground. Who just don't care that 52% of our population can't live day to day. I care about that. And I have a good standard of living. My husband works in the mines. I have a decent job. I have a good standard of living, but my moral compass is to take care of those in our community who don't. Elected Official 01

People who supported the mine had faith in the regulatory regime and industry commitment to environmental responsibility to mitigate the environmental impacts of the mine. Although there may be some visual impact on the landscape, environmental regulations and modern mining practices would prevent any fundamental disruption to the surrounding ecosystem. Some had worked in mining and had experience with the environmental standards of the mining industry. Consistent with anthropocentric worldviews, these respondents trusted in human ingenuity to solve the environmental challenges imposed by mining.

I do believe the provincial and federal regulations should work for the environment. That's why they're there. We have some of the most stringent in the world, and we're proud of that. And it should, we should have faith in that, and that they do work and that they're there for a reason. So, if the project can't get up to snuff on that, then it doesn't go, right? Community Member 09

They highlighted the importance of metallurgical coal for the transition away from fossil fuels, particularly for manufacturing wind turbines. In this view, steel is needed and should

therefore be produced where human rights and the environment are protected. If this can be done locally with local economic benefits, all the better. Further, from a global perspective, mining coal here is the most responsible choice given global differences in environmental regulations and labour standards. This perspective is consistent with an anthropocentric view that trusts in human resourcefulness to address ecological problems.

...if we're going to get steel from somewhere, we need to smelt it with metallurgical coal, and I would rather be the producer of metallurgical coal because I think we do it better than people in South Africa or South America or, or China. I think we would have a much better environmental record. And if we're trying to save the world, and still drive steel cars, we should extract our coal where we do it the best, and I think we would do it better than a lot of people, than a lot of countries. Rancher 03

Many of the mine supporters' views reflected a sense of place that was rooted in the blue-collar coal mining history of the area and underpinned by anthropocentric worldviews.

Mine Opponents and Ecocentrism

While local mine supporters often claimed that opponents were only interested in the recreational and aesthetic values of the landscape, anti-mine participants spoke more often about the region's centrality to the local ecosystem and the importance of ecological balance.

...it is incredibly important in terms of biodiversity. It is the home of several endangered species, limber pine, white bark pine, grizzly bear, the westslope cutthroat trout. The Eastern Slopes of Alberta, in their entirety, are just 10% of our landscape, but provide 90% of our freshwater. So, from an ecological point of view, that area just holds so much value to us, to everyone. Environmental Organization 08

Many discussed an emotional or spiritual connection to the land. Often this was based on their experiences with spending time in the area, and the emotional responses this elicited. For

example, described by one participant as follows: *“I get recharged mentally, emotionally, spiritually, by going to the mountains.” Subject Matter Expert 04*

Mine opponents did understand the economic challenges facing the region, but for them, the economic benefits of coal mining did not outweigh the environmental impacts. High-profile issues with selenium at Teck Resources mines in BC were top of mind, particularly for its potential impact on native trout species. They also had concerns about the cumulative impacts of the existing pressures on the ecosystem and the potential for additional mines. Participants opposing the mine did not believe that regulations were rigorous or sufficiently enforced and trusted neither the government nor industry to monitor or mitigate environmental impacts. Many of these folks were not against resource extraction *per se*, and some had connections to other extractive industries. Coal mining, particularly surface mining, has a very visible impact on the landscape which is different from other energy technologies. For anti-coal folks, coal mining is an outdated, dirty and dangerous industry, and there is no way to balance the impacts of surface coal mining using the technology currently available, or as one participant said, “without using magic” (Environmental Organization 04).

I don't think a lot of people really understand the severity of what the workings of an open-pit mine really are. They just think coal mining is nothing new. It's what we always had, it's what the community was built on, yada, yada, yada. But the way they do it now, with mountaintop removal... the magnitude of which is phenomenal disturbance.

...you've just got contamination at a variety of different levels right from the get-go. It isn't contained. And they'll argue the point. "We can contain this in the settling ponds" or whatever they want to call them. Yeah, funny thing, Teck sure hasn't been able to do that despite spending \$1.2 billion dollars in trying. Which leads me to my inability to see how

you can have economic viability in a narrow band of minimal, low grade, metallurgical coal, when you have to spend so damn much money in order to mitigate the problems that come from it. Community Organization 03

This group of participants also focused on the intrinsic value of the land and the landscape, outside of the benefits it provides to humans. This intrinsic value challenges the right of humans to materially alter the ecosystem, despite the potential economic benefits.

Do we have the right to remove a mountain? And I mean, for me that is that is a pretty hard no. And it's interesting to see people grapple with that and to have it not be that kind of information. ... okay, maybe if you dig, you can find the science. We can, we can have a conversation on selenium, we can have a conversation on maybe on the economic impacts, we can talk about maybe jobs or getting a new golf course or new stoplights. But we don't really talk about the ethics of our relationship to the natural world. ...as a species, just because we've got these giant brains, does that actually give us some sort of right to affect other species and impact their ability to live? Just because our brains are bigger, and we've got opposable thumbs, like, I don't think that's enough justification to say we can just do whatever the fuck we want. Community Member 12

For some participants, these values were shaped by their experiences with the land. As one participant explained, spending time on the land made them a “reluctant conservationist” (Community Member 11).

In addition to environmental concerns, anti-mine participants were concerned about a range of social impacts on the community. Some participants whose jobs are connected to the land were concerned about how the impacts would affect their livelihoods. Many also questioned the validity of Benga’s economic projections, arguing that the economic impact of the mine

would be limited, and other industries would be pushed out. Participants were also concerned about the social implications if mining once again became the primary industry in the region, concerned about displacing other industries, the cultural impacts and social disruptions related to the influx of mine workers.

...they did not give any consideration to the negative economic consequences that could be associated with coal mining. ... So, on the one hand, yes, you may get some jobs that are related to coal mining. What is that going to do to the fledgling tourism industry? ... it's going to affect the sports fishery, and is going to affect the agricultural industry, it's going to affect it in a couple of ways, including the fact that a lot of the land in southern Alberta is irrigated. ... is there going to be an infrastructure impact, you know, is it going to effect, you know, any of these other costs that might be incurred to support this? Things like health, human health effects? What is the financial consequence to Albertans? ... one of the big arguments is that well, you'll bring in all these jobs into our local community, and they'll all spend money here. In Sparwood, that hasn't happened. A small percentage of the people working at the mine have chosen to live in Sparwood, almost all of them commute from somewhere else, because they don't want to live in Sparwood because it's dirty... Community Organization 07

Many mine opponents had a very different perspective on the overall economic vitality locally. While all participants recognized that there are significant economic challenges facing the region, mine opponents generally viewed the future optimistically. This optimism reflects a sense of place connected to the small-town, rural lifestyle, focusing on tourism and entrepreneurship rather than resource extraction.

“Look at all these new businesses. Look at all these new people at this business, Pass Brew, whatever, and I see this vibrant community. I, I see our kids, the schools thriving, I see options in schools that there weren't there before. And so I've heard it quoted ... that we are so poor, that we are one of the oldest communities in Alberta...I don't see the suffering that is being pictured in this desperate, in the community. I see opportunities for people to be connected online and work away, and you know, create your own niche and opportunities here.” Community Member 04

Opponents to the mine could be found among participants whose sense of place was connected to the social aspects of the community and those whose sense of place was more connected to the land, but an ecocentric environmental worldview was a common thread.

Discussion

This case demonstrates that place attachment and environmental values play a central role in how individuals understand and respond to potentially hazardous industrial development. Interview data revealed the multiple “places” coexisting around Grassy Mountain, which affected how people assessed the risks and benefits associated with the mine and what types of activities were acceptable in that space. The prospect of surface coal mining could be either a blight on an iconic landscape or a sign of the future prosperity of the struggling town. Where the Eastern Slopes were a fragile and essential ecosystem, coal mining became an unacceptably damaging land use. Alternatively, where the Crowsnest Pass was a historical coal town in desperate need of new industrial development, new coal mines were a boon and reaffirmation of the local culture and identity.

Figure 2: Summary of intersections between sense of place and environmental worldview

	Anthropocentric	Ecocentric
Coal Valley Sense of place tied to community	<i>"...many people who do not want the landscape temporarily scarred ...most of them don't have children in the community, that are looking for work, or trying to stay in the community." Ralph Teigen</i>	<i>"I'm not oblivious to the sacrifices [miners] made and the hardship they endured, you know, I mean, and their history. ...the safety considerations have been diminished, but I guess they've sort of been replaced. Instead of danger to the miners, now we're talking about danger to the environment as a trade-off." Hearing Participant 02</i>
Iconic Mountains Sense of place based on landscape	<i>"there are a lot of people who see the the mountains basically as a place to go for a rip, as they say, with their ATVs." Hearing Participant 02</i>	<i>"Do we have the right to remove a mountain? And I mean, for me that is that is a pretty hard no." Community Member 12</i>
Wild West Community and landscape both important, focus on stewardship	<i>"If you're more extractive, let's say, like a vicious capitalist, it only lasts for two or three years, and then and then you've denuded your environment, and it won't be able to maintain that kind of extraction, I'll say. So, it's not in our interest to do so" Rancher 04</i>	<i>"People don't really, from our experience, understand the value of the grassland system, like what grass really is. And we call ourselves grass managers first, rather than cattle producers." Rancher 01</i>

Examining interactions between sense of place and environmental worldviews help to provide nuance to the diversity of perspectives on the mine. Differences in place perspectives within similar demographics contests the dichotomous framing of the controversy. For example, some participants with generational connections to the Crowsnest Pass recognized the area's coal mining history but, rather than valorizing the past, saw it more as a cautionary tale. Some relative newcomers supported the mines and felt connected to the area's coal history. The differences in each of these cases lie in the underlying values informing sense of place, similar to Brandenburg

and Carroll's findings (1995). In that case, participants with a similar sense of place but different environmental values had conflicting views on how a river basin should be managed (Brandenburg & Carroll, 1995). Where multiple place frames are available culturally, participants connected with place attachments that aligned with their environmental worldviews. These "places" were underpinned by values related to environmental worldviews, which significantly impacted participants' attitudes toward the mine.

Sense of place and environmental worldview among interviewees was not static nor unidirectional. Brandenburg and Carrol (1995) found that experiences with a particular landscape influenced stakeholders' values. Similarly in this case, some participants spoke about how their experiences with the mountains inspired their ecocentric values, reluctantly becoming conservationists. Other community members talked about how their support for coal and identification with the industry has changed over time. These changes caused some internal struggle for interviewees as they wrestled with what felt like competing loyalties.

Interactions between place and environmental worldview help uncover what is at stake for communities in resource extraction disputes, beyond two-dimensional jobs versus the environment framings. In the case of the Grassy Mountain mine, the implications of the project were connected to deeply personal meanings about place and environmental values, reflected in the passion of the above quotes. Similar to Mayer's (2021) findings, people support the coal mining industry for cultural, not just economic reasons. For mine supporters, only one type of economy was viable, one based on coal mining or a similar industry. Coal or industrial economies aligned with a sense of place rooted in coal mining history and the working-class identity of the region. Like other coal mining regions (Measham et al., 2021), the mining identity has proven resilient, enduring the decades since the last coal mine shut down. Van Assche et al.

(2021) found that coal mining identity in the Crowsnest Pass limited residents' ability imagine alternate futures outside coal mining. Interviewees who connected a sense of place with other aspects, such as the outdoors or tourism, could imagine opportunities outside of coal mining and were much more optimistic about the current economic situation. For these participants, a return to coal would be damaging to their sense of place both in terms of the environmental and social impacts. What was at stake for community members was whether future development would align with or disrupt existing place identities.

Interviewees who supported the mine believed that government regulations and the internal environmental policies of industry were sufficient to eliminate or make negligible any environmental impacts. This is consistent with the anthropocentric view that nature is resilient and human ingenuity will prevent us from making the world unliveable (Dunlap, 2000). In short, there is no jobs/environment trade-off if the environment is not threatened. Because most mine proponents felt environmental risks could be managed, the environmental impact was primarily aesthetic. While this was an issue, it was a sacrifice they were willing to make for the benefits the mine would bring to the community, particularly as the mine would be remediated after it was decommissioned.

In this context, the controversy over Grassy Mountain was not a jobs versus the environment conflict, but rather a conflict between local versus outsider interests. An anthropocentric view does not necessarily mean a lack of care about the environment (Bonaiuto et al., 2002). Anthropocentric worldviews, in which humans have the right to modify their environment to serve their needs, can manifest as legitimate justice-related concerns. As discussed in Lewin (2019) and Kojola (2020), people in the region felt that they were being

asked to sacrifice their only opportunity for economic prosperity to serve the whims of ill-informed elites who have nothing at stake in the community's struggles.

On the other hand, mine opponents felt that the impact of the mine would be devastating to the ecosystem. Their environmental concerns, rooted in ecocentric worldviews, were not just about whether environmental impacts are appropriately mitigated, but also more philosophical questions about environmental ethics, the intrinsic value of nature, and responsibilities to future generations. Coal mining on the Eastern Slopes would disrupt their emotional and spiritual connections to the land, and the social impacts would entrench coal mining flavour of local communities at the expense of culture based on recreation and conservation. While recognizing the significant economic challenges, mine opponents felt more hopeful about the community's economic prospects outside of the coal industry.

Conclusion

Sense of place, underpinned by environmental worldviews, shapes how people see the advent of new coal mines. Both mine opponents and supporters saw environmental and social risks associated with approving or denying the Grassy Mountain mine. What types of changes are seen as risks was connected to what people value, and people are more sensitive to risks that threaten what they value. For opponents of the mine, a new coal mine would damage a vital ecosystem and jeopardize the transition away from coal to a more diverse economy based on tourism and sustainable industries. For mine supporters, a new mine would not threaten the environment, but a refusal would threaten the future prosperity of the town and a return to economic stability based on coal. In this context, attitudes toward the mine were not simply based on tension between jobs and the environment, but rather how the development either threatened or affirmed local place-based identities and environmental worldviews. This research adds to our understanding of drivers the social acceptability of coal mining, and the complex

interactions between sense of place and environmental worldviews, which adds important nuance to two-dimensional and reductive jobs versus the environment debates.

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Chapter 4: Understanding the Risk of Impact Assessment

Introduction

Coal mining generates significant risks for society, both in terms of its environmental and social impacts. At the same time, coal mining remains important in many jurisdictions for the economy and energy provision, and governments must develop processes to assess these risks and benefits. Risks related to new industrial projects like coal mines are assessed through bureaucratic processes, often referred to as Impact Assessment (IA). Impact assessment evolved out of planning theory in the 1960s as a decision-making tool to assist regulators in assessing risks related to new developments (Day et al., 2019; Weston, 2004; Winfield, 2016). IA processes differ across jurisdictions but are generally “a range of tools used worldwide to identify, predict, assess and mitigate impacts of new developments on environment and people” (Larsen, 2016, p.1440).

IAs have well-documented challenges, both in terms of procedure and effectiveness. IAs are based on a rational framework that attempts to transform the uncertainty inherent in industrial activity into risks with calculable probabilities of positive or negative impacts (Day et al., 2019; Weston, 2004). This creates several tensions, such as: balancing public participation with technocratic analysis, balancing thoroughness with efficiency, weighing diverging risk perceptions, and balancing conflicting priorities among government jurisdictions, industry, and communities. IAs also do not adequately consider the social nature of risk (Weston, 2004). When science is prioritized, other knowledge and value systems may not be represented (Kojola, 2019). Further, the complexity inherent in industrial development makes the full potential of risk impossible to determine and uncertainty inevitable (Verbeek, 2021).

Although definitions of risk vary, the “prevailing definition of risk in the social sciences is uncertainty about and severity of the events and consequences of an activity with respect to something that humans value” (Mahmoudi et al., 2013, p.2). IA processes can have consequences, both positive and negative, on individuals, communities, and society at large, with potential implications that may be felt long-term (Colvin et al., 2019). The severity of these consequences, or whether they manifest at all, is uncertain and relies on the specific context of each IA process.

The limitations of IA are not solely bureaucratic failures; this study demonstrates how IA processes themselves are a significant source of risk. Drawing from social science theories about risk and using a case study of the Grassy Mountain coal mining project in Southern Alberta, this paper examines the problems inherent in how IAs are undertaken, and the ways that IA processes themselves can generate novel risks. The following questions guide the development of this chapter:

- What impacts, if any, do IA processes themselves have on communities?
- How do these impacts occur, and what are their implications for individuals and communities?

To explore these questions, the chapter begins with a review of relevant literature, including social science theories of risk and how they can be applied to understanding IAs, the role of science in IA, and limitations to IAs. This literature is then used to explore how the IAs can impact individuals, communities, and society. Research findings illustrate the impacts of the IA in the Grassy Mountain case, which cause polarization in the community and undermined confidence in the IA process.

Literature Review

Risk, Science, and Impact Assessment

Theories of risk developed in the social sciences provide a helpful framework for understanding the challenges with impact assessment (Day et al., 2019; Larsen, 2016). Ulrich Beck's "risk society" is prominent in this literature, and while Beck's theory has been criticized for being *inter alia* too all-encompassing (Larsen, 2016) or even apocalyptic (Day et al., 2019; Weston, 2004), it provides insights relevant to the nature of the risks inherent in new development, and the procedural challenges that plague IAs. The nature of risk has changed due to industrialization, where modern hazards result from socio-technical decisions rather than uncontrollable events (Beck, 1992). The scale and complexity of modern development make risks impossible to understand or predict. Risks have become invisible, and their potential impact is not limited by space or time (Beck, 1992; Day et al., 2019; Greenberg, 2019). Because of the complexity and potential scale of impacts, governments struggle to protect citizens from the impacts of the technological advances that allow large-scale industrial development, and who is responsible for these risks can be unclear (Beck, 1992; Weston, 2004).

In the risk society, technological and scientific advances enable human progress but also create "historically new challenges which slip through all meshes of law, technology and politics" (Beck, 1992; p.104). Science is thus both the cause of and proposed solution for our potential demise in the risk society (Beck, 1992). Governments create bureaucratic mechanisms like IA processes to manage risk but have no real control over the potentially catastrophic impacts of industrial development, particularly as the cumulative risks that compound over multiple projects need to be adequately addressed (Verbeek, 2021; Weston, 2004).

IAs rely heavily on scientific and technological calculus to determine the acceptable level of risk (Day et al., 2019; Larsen, 2016; Weston, 2004). As Day et al. state, “risk-based methods used in EA [Environmental Assessments] reflect a compulsion to transform uncertainty, as far as possible, into calculable probabilities” (Day et al., 2019; p.1). The complexity of large industrial projects makes definitive assessments of risk challenging, however, as interrelated environmental, social, and economic impacts at various temporal and spatial scales mean uncertainty is inevitable (Bond et al., 2021; Day et al., 2019; Novek, 1995; Leung et al., 2015). For example, Verbeek (2021) argues that safe levels of pollution are impossible; we can only arrive at socially acceptable thresholds. Thus, regulations only provide a “false sense of security” (p. 1415).

Further, scientific inquiry creates a rich and multi-faceted body of knowledge that supports multiple science-backed perspectives on the same issue (Maechler & Graz, 2020; Sarewitz, 2004). Sarewitz makes the following argument:

...nature itself—the reality out there—is sufficiently rich and complex to support a science enterprise of enormous methodological, disciplinary, and institutional diversity. I will argue that science, in doing its job well, presents this richness, through a proliferation of facts assembled via a variety of disciplinary lenses, in ways that can legitimately support, and are causally indistinguishable from, a range of competing, value-based political positions. (Sarewitz, 2004, p.386)

Given this insight, one can expect that a scientific consensus on many complex industrial and environmental issues may be hard to achieve. Nevertheless, multiple and contradicting scientific perspectives are not an indication of a failure of science, but rather a problem for the

expectations governments and regulators have of the role scientific knowledge can play in decision-making.

Although the frequent proliferation of scientific perspectives on many complex topics is well known within the sociology of science, the focus on science and technical expertise within IAs seeks to ensure that the process is objective and apolitical, providing legitimacy to IA decisions (Day et al., 2019; Larsen, 2016; Novek, 1995; Weston, 2004). However, scientific objectivity claims are problematic (Burdge & Vanclay, 1996; Kojola, 2019). According to Jasanoff (2004), “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” (p.3). Further, the IA process inevitably involves subjective judgements and choices, and governments and industry actors can interfere at all stages, undermining its objectivity (Day et al., 2019; Kojola, 2019; Weston, 2004). These challenges with science in IAs make it difficult for the processes to definitively assess and predict risk, undermining their legitimacy in the eyes of the public (Day et al., 2019; Larsen, 2016).

Just as scientific inquiry is never fully objective, neither is the definition of risks. In the context of industrial development, risks neither affect everyone in the same way nor are they distributed evenly. As such, the acceptable level of risk associated with development is subjective (Day et al., 2019; Larsen, 2016; Verbeek, 2021). As Beck (1996) states, “the same dangers appear to one person as dragons, and to another as earthworms” (p.3). There is a rich body of literature theorizing individual and community risk perceptions. While these theories are on a spectrum of realist to constructivist, all acknowledge risk's social and subjective nature (Day et al., 2019; Mahmoudi et al., 2013; Weston, 2004). Some scholars focus on personal

psychological factors, and others focus more on social and cultural elements, but risk perceptions are ultimately shaped by diverse interrelated factors (Brown et al., 2021; Day et al., 2019; Greenberg, 2019).

Because of the need to rely on experts producing data, trust in science and technology is central to risk perceptions (Beck, 1992; Verbeek, 2021). While Beck predicted the reliance on science and experts would undermine trust (Beck, 1992), research related to IAs reflects a more complicated reality (Verbeek, 2021). While some evidence suggests that trust in science and experts has been undermined (Weston, 2004), others find that science remains an integral part of people's risk assessments (O'Connor et al., 2022; Verbeek, 2021; Whyte & Crease, 2010). In these cases, science remains important, but there is not necessarily a consensus on whose science is reliable (Weston, 2004; Whyte & Crease, 2010). Information about projects is generated by government, industry, environmental organizations, scientists, media or social media sources, often leading to conflicting scientific claims (Weston, 2004). This information can be interpreted in myriad ways, and individuals will rely on the sources they trust most, or which reflect personal perspectives and values (Larsen, 2016; Verbeek, 2021; Weston, 2004).

Social Impacts and Social Impact Assessment

The scientific focus of IAs lends itself to quantitative analysis of quantifiable physical impacts. However, industrial activity can have complex social impacts, including impacts on “culture, community, power, place, identity, resilience and livelihoods” (Colvin et al., 2019, p.41). While less prioritized in IAs, these social impacts may be more important than environmental impacts for the people involved (Day et al., 2019; Colvin et al., 2019; Lockie, 2001). Most IAs include some assessment of social impacts through social impact assessment (SIA), which may be separate or embedded in the larger IA (Burdge & Vanclay, 1996; Vanclay,

2020). Even when an SIA is included, they are usually not prioritized and are narrow in scope. They also tend to privilege quantifiable social impacts, such as economic effects, at the expense of less calculable impacts, such as cultural change, and the community and personal meanings ascribed to these impacts (Colvin et al., 2019; Lockie, 2001; Vanclay, 2003).

Further, because it is impossible to predict impacts in IA definitively, decisions inevitably become value judgements, with some values and perspectives privileged over others (Day et al., 2019; Kojola, 2019; Lockie, 2001). The technoscientific focus of IAs influences which values and concerns are prioritized, making IAs unlikely to adequately address subjective and social concerns. As Lockie states, “It is about whose definition of an impact, an aspiration, a value and a fact is considered legitimate and whose is dismissed as subjective, emotional and irrelevant” (Lockie, 2001, p. 279). When technical approaches are emphasized, the values underpinning these calculations can be obscured and neglected (Richardson, 2005). The rational framework of IAs makes it difficult to contend with conflicting worldviews and power differences (Kojola, 2019). This becomes even more challenging when incorporating non-Western ontologies and value systems (Lockie, 2001; O’Faircheallaigh, 1999).

Impact Assessment as Risk

While many of the shortcomings of IAs are well-documented, the novel risks associated with IA processes, separate from the development in question, are seldom acknowledged (Barrow, 2010; Colvin et al., 2019; Grubert & Skinner, 2017). There are three points where IA’s can have risks of impacts, as follows: (1) due to the prospect of a proposal, (2) as a result of engaging in the formal IA processes, and (3) as communities deal with the conflicts that arise as the prospect and the procedure intersect. Though distinct, these sources of impact are interrelated

and difficult to disentangle. The intersection of anticipatory effects, procedural issues, and contention has potential impacts at personal, community, and societal levels.

Well-designed IA processes that include adequate consultation can have positive social impacts (Vanclay, 2020). Bringing community members together to discuss proposals strengthens social ties and increases community cohesion (Colvin et al., 2019; Vanclay, 2020). In the Canadian context, the 1974-1977 consultation for the Mackenzie gas project, also known as the Berger Inquiry, is an oft-cited example of a well-designed consultation with positive impacts (Abele, 2014; Burdge & Vanclay, 1996; Gamble, 1978). The assessment for this project included extensive and meaningful consultation with local communities, allowing concerns about broader issues to be identified, including Indigenous land claim issues. This was only possible because the Berger Inquiry was given the time and scope to explore concerns beyond the technoscientific. Unusual in the context of IA, the Berger Inquiry SIA was instrumental in preventing the project from moving forward (Burdge & Vanclay, 1996). The social impacts of the Inquiry are still felt in Canada, including practices embedded in subsequent IAs and government policy (Abele, 2014). Perhaps most significantly, the Berger Report contributed to shifting the paradigm on Northern development, particularly the “gap between the view of the North as a frontier and the reality that it was a homeland” (Abele, 2014, p.105). At the community level, while there was some conflict and social disruption during the Mackenzie gas line consultation, participation in the Inquiry brought communities together and provided opportunities for Indigenous leadership (Abele, 2014). On the other hand, when IAs are not well designed, the impacts of IAs can be detrimental to individuals, communities, and society, as outlined below.

First Point of Impact: Risk Perceptions and Anticipatory Impacts

As discussed above, there can be widely different views on the risks and benefits of new development. Anticipatory impacts occur simply when a project is proposed because of how people understand the risks or benefits associated with a project (Barrow, 2010; Brooks and Skelton; Colvin et al., 2019). According to Vanclay (2020), “Unlike biophysical impacts which arguably only happen when construction starts, social impacts happen the moment there are rumours about a potential project (p.127). For example, there may be positive impacts if the project attracts other investments to the community; alternatively, others may leave if they are concerned about economic or cultural changes (Grubert & Skinner, 2017). The mere proposal of a project can spur conflict between those in support and those opposed to the development or intensify existing divisions in communities (Baldwin & Rawstorne, 2018; Barrow, 2010; Colvin et al., 2019). While large-scale projects are likely to create conflict in any case (Barrow, 2010), contextual factors, such as local culture, history, economic conditions, and how the project is communicated, can influence how the prospective project lands in the community (Grubert & Skinner, 2017; Weston, 2004).

Second Point of Impact: Procedural Issues

The mismatch between the rationalist assumptions that underpin IAs, and the subjective reality of risk creates procedural issues (Day et al., 2019; Weston, 2004). Access to information explaining impacts is a pervasive problem in IAs (Kojola, 2019; Walker et al., 2019; Weston, 2004). When government and industry provide information, it is often couched in inaccessible technical language, which creates barriers to access and privileges participants from privileged social groups (Baker & McLelland, 2003; Kojola, 2019; Walker et al., 2019). Navigating technical information can be challenging and overwhelming for laypeople and requires time and

resources to decipher (Kojola, 2019; Weston, 2004). Proponents may even deliberately make communication confusing to reduce participation and obscure the full risks associated with a project (Baker & Westman, 2018). As Day et al. (2019) state, “Complicated explanations, overuse of acronyms, simplifying assumptions and caveats are linguistic devices that may be employed to boost the scientific credibility of EA reports, distracting the reader from underlying uncertainties” (p. 3).

While IAs generally include public participation, determining which members of the public have sufficient interest in the project to gain standing is another procedural challenge (Burdge & Vanclay, 1996). For example, in a community with a large tourist or transient population, defining who is a community member can be unclear (Burdge & Vanclay, 1996). Further, environmental impacts are seldom contained in discrete geographical areas, so surrounding communities may have legitimate claims for participation (Burdge & Vanclay, 1996).

When scientific rigour is used to justify the risk, rather than consensus or democratic processes, the role of consultation becomes unclear (Barrow, 2010; Lockie, 2001; Vanclay, 1996). Rather than democratic, it becomes an information-gathering exercise and can even be construed as extractive (Baker & McLelland, 2003). In some cases, consultation is not done in good faith and can be “less about incorporating citizen views into planning and more concerned with legitimizing what has been planned” (Barrow, 2010, p.296). While IAs are meant to take politics out of the process, decisions about industrial development are ultimately political, not scientific, further confusing the issue in the eyes of the public (Da Silva et al., 2021; Weston, 2004).

It is often challenging to define the appropriate scope of an IA because of the complexity of large projects. While an overly narrow scope can leave out important issues, a more inclusive scope can become cumbersome and impractical (Puig et al., 2021; Winfield, 2016). For example, issues around cumulative impacts or broader trends such as biodiversity loss and climate change are relevant but seldom adequately addressed in IAs (Winfield, 2016; Wright & Doelle, 2019). While IAs are processes specific to one project, these decisions have wide-ranging implications and become the site for deeper conversations about values and diverse visions for the future. However, these conversations are seldom included in IAs (Richardson, 2005). Further, logistical tensions arise when the need for thoroughness, and the complexity of the scientific and technical analyses, means that there are often long delays between the project proposal and the IA decision, exacerbating frustration and tension within communities (Grubert & Skinner, 2017).

Third Point of Impact: Conflict and Contention

The third point where impacts happens as the tensions arising from the project proposal intersect with procedural issues. As Beck describes, the bureaucratic processes governing risks are antagonistic, pitting people and organizations against each other (Beck, 1992). According to Novek (1995), IAs have taken “on more of the characteristics of a public ritual in which opposing interests compete for attention and political advantage” (p.157). Even though the process itself can create or exacerbate tension, IAs are not designed to resolve conflict (Lockie, 2001; Weston, 2004). Lockie states, “Despite the aura of objectivity, technocratic rationality is ill-equipped to deal either with the competing interests, beliefs, values and aspirations that characterize complex social situations, or with the active participation of multiple stakeholders in working through these situations” (Lockie, 2001, p. 279). Navigating a process that is

unequipped to deal with conflict is challenging, particularly when projects are contentious (Lockie, 2001; Weston, 2004).

Conflict associated with IAs can have serious consequences, even when restrained (Barrow, 2010). The formal IA process can cause divisions and exacerbate disagreement because of its adversarial structure (Weston, 2004). Participation in IA consultations draws lines between conflicting views (Booth & Skelton, 2010). In their case study of a wind energy facility in Tasmania, Colvin et al. (2019) observed numerous impacts, even though the project was ultimately not approved. The tensions generated by the proposed project escalated to personal attacks, boycotts, and strained relationships. These conflicts ultimately increased suspicion of outsiders, and decreased feelings of safety and trust, weakening community bonds and feelings of belonging (Colvin et al., 2019).

For individuals, the prospect of large-scale projects can be alternately distressing or hopeful. Deeply personal meanings are tied up with outcomes, beyond the quantifiable environmental and economic impacts, based on values and worldviews (Barrow, 2010). Involvement in well-managed formal processes can increase people's knowledge of governance processes and leave participants feeling empowered and connected (Lockie, 2001; Vanclay, 1996). Where these processes are not in place, however, individuals experience mental health impacts and stress which can begin at the project proposal stage (Baker & McLelland, 2003; Włodarczyk & Tennyson, 2003). Engaging in the formal process can be taxing financially and emotionally, resulting in frustration and fatigue (Booth & Skelton, 2011; Baker & McLelland, 2003). Impacts on social cohesion and local democracy also have negative impacts on personal health and well-being (Browne & Leckey, 2022).

The inaccessibility of IAs leaves people feeling alienated from decision-making processes (Booth & Skelton, 2011). Negative experiences with IAs can decrease trust in governments and government institutions (Weston, 2004; Colvin et al., 2019). Colvin et al. (2019) found implications for governments and institutions. Community members were displeased with their government's performance and felt disempowered to participate in local democracy. From the perception of the public, if IAs are not legitimate, neither are the institutions that regulate them (Weston, 2004). Without mutual trust between community members and regulating bodies, it is impossible to conduct a robust IA. After negative IA experiences, community members may be less willing to participate in future IAs or may not be completely forthright in their submissions (Booth & Skelton; Colvin et al., 2019; Dalseg et al., 2018). This is a pressing challenge for governments and regulatory bodies because the IA process relies on community consultation for legitimacy and information gathering. If people do not see IAs as a legitimate way to address their concerns over a project, they will use other means, such as political protest (Winfield, 2016). According to Winfield, "Processes which are perceived to be trustworthy, procedurally just in their processes and distributively fair in the outcomes are not only likely to produce better decisions, but also to reduce the levels of political and legal conflict associated with decision-making over major resource and infrastructure undertakings" (Winfield, 2016; p. 12).

Impact Assessment for Grassy Mountain

The Impact Assessment process for Grassy Mountain began in 2015 when Benga submitted an application to the Alberta Energy Regulator (Joint Review Panel for Benga Mining's Grassy Mountain Coal Project (JRP), 2021). The Grassy Mountain project met the criteria for a designated project under the *Canadian Environmental Assessment Act*, partly because of the

potential environmental impacts if the mine were to be approved (Impact Assessment Agency of Canada (IAAC), 2015). For the purposes of expediency, the federal and provincial agencies agreed to form a Joint Review Panel (JRP) and review the project application simultaneously (IAAC, 2018). The agency provided Benga with a terms of reference from which to base its Environmental Impact Assessment (EIA), which was the central source of information for the panel's review (JRP, 2021). Benga submitted the first EIA in November 2015. The AER requested additional information from Benga multiple times, ultimately receiving twelve addendums to the original EIA documents. Once the JRP was satisfied with the information received from Benga, they proceeded with a public hearing from October 27 to December 2, 2020 (JRP, 2021). Interested parties could apply to participate either as a full participant or observer. The public could also submit comments about the project directly on the IAAS website.

In addition to providing information to the regulators, Benga was required to do stakeholder engagement. They consulted directly with multiple First Nations and signed impact agreements with the Treaty 7 Nations of Káínai, Piikani, and Siksika, and the Métis Nation of Alberta (JRP, 2021). Benga engaged with stakeholders in multiple ways, working directly with local municipal councils and hosting town halls for residents.

The JRP released their recommendation against the mine in June of 2021 (IAAC, 2021). Benga then applied for leave to appeal this decision with the Court of Queen's Bench in Alberta (Ho, 2022). After this was denied in January 2022, they appealed to the federal court, which was also denied in September 2022 (SCC, 2022).

Findings

First Point of Impact: Risk Perceptions and Anticipatory Impacts

Like Beck's (1996) earthworm vs dragon metaphor discussed above, study participants understood the risk and benefits associated with the mine very differently. While concerned about the environment, mine supporters believed that the mine and a healthy ecosystem could co-exist. They emphasized the role of modern technology and mitigation strategies in addressing risks, particularly as the mine footprint would be physically small relative to the entire mountain range. Many had personal connections with mining and were proud of the industry's hard work in protecting the environment and remediating decommissioned mines. Further, they felt that the economic benefits would offset any environmental impacts. Rather than being a risk to the community, the mine solved the economic challenges plaguing the community since mining left the valley forty years ago.

... many people perceive mining as a dirty and environmentally unclean process. Well, having worked in it, I'd say exactly the opposite is true. Teck mine spends a tremendous amount of money protecting the environment and making sure that the landscape is returned back to a habitat that's better than it was. So yes, we will temporarily scar the landscape. ... It's a long-term scar, but I think that's part of weighing that argument against the benefits. Ralph Teigen

Those opposed believed that the environmental impacts of the mine would be devastating, contributing to climate change, air pollution, destruction of wildlife habitat, contamination of water, human health impacts, and visible scars on an iconic landscape. Selenium contamination of water courses was a major focus, as the headwaters of the Oldman River watershed are in the region. As one research participant succinctly stated, "it's the wrong project, in the wrong location, in the wrong century" (Hearing Participant 02).

Although the focus of the discussion was often on the technical and quantifiable, participants were also concerned about the social impacts. For those in support of the mine, the decision not to allow the mine would have negative cultural impacts, changing the nature of the community from a historical mining community to one based on tourism, captured in the following quote:

Recreational jobs that are minimum wage, you know, do not create stewards that help run your community. And that's what we require was we need these good jobs that families can actually live on. Community Organizer 01

In contrast, those opposed to the mine were very concerned about the social impacts if the mine did move forward. Many expressed concerns about the impacts on the burgeoning tourism industry and the demographic changes associated with an influx of mine workers.

I think that you would probably have far less people moving here to participate in a community, more people moving here for a job. So, they're not necessarily going to be volunteering at the food bank, they're not going to be even necessarily spending their money, apart from some rent. ... So, I think it would be a drastic loss of what has gained momentum over the last 20 years here. Business Owner 02

The prospect of these social changes caused anxiety in community members. For example,

I know it's still considered a mining community, so many people are employed in in with Teck, but having active mining happening here in the Pass, was just not, that wasn't the environment we wanted to live in and just filled us with a lot of grief and anxiety. Hearing Participant 03

Because of the range in risk perceptions, impacts emerged simply because of the project proposal. Tensions arose between individuals and groups who perceived the risks and benefits of

the mine differently. Interviewees relayed stories of people who moved away from the community in anticipation of the mine, and how the proposal attracted some investment but scared away others. One example of these anticipatory impacts is the attempted annexation of Ranchland MD territory by the Municipality of the Crowsnest Pass (Crowsnest Pass). The majority of the Grassy Mountain mine was to be located in Ranchland MD, although much of the disruption felt by the mine would have been in the Crowsnest Pass, with the load-out facility in town. To access a more equitable share of the tax revenues, the Crowsnest Pass began, then later abandoned, steps to annex a portion of the municipal district (Goss, 2013; Read, 2013).

Second Point of Impact: Procedural Issues

Participants generally felt the IA process was procedurally fair. Anyone could participate in the formal procedure and make online submissions. Most also thought it was adequately rigorous, given the amount of time and volume of information included. Despite the perceived fairness, however, research participants raised numerous procedural issues.

Navigating the process was confusing and time-consuming, particularly for people with limited technology skills or Internet access. Communication from the government about the project was limited, so people had to seek out information online or through other sources, and some did not have the time or resources. The public hearings took place over several weeks, and many did not have time to attend, even if they had the inclination. Understanding the process required reviewing many documents, including Benga's extensive and often revised EIA. Several research participants felt that Benga's long EIA was a data dump meant to give the illusion of thoroughness without providing actual substance.

...it was really difficult to find a lot of that information, and that information is also super jargon, has a lot of jargon in it, has hundreds and 1000s of pages to read, so how do you filter through all of that? Business Owner 03

Some groups used lawyers to help with their submissions and hired external experts to help with the technical information, which is expensive. As a result, people and organizations with resources and an understanding of the process could participate more fully and therefore have their perspectives represented. Although it is possible to apply for financial remuneration for participating in IAs, in this case from both the federal and provincial regulators, the process for doing so is complicated, and many of those whose applications were accepted were not reimbursed until months after the hearings were over.

I think it wasn't easy for people to get organized, get your ducks in a row, you know, your experts in place and find funding for them. ... I volunteer my time, and many of these other people volunteer their time. And you know, the people we are working against, that's their day job, they're paid to be there and do that. And so, it's kind of like David and Goliath in that respect. Community Organization 09

Even when information was available, understanding the potential impacts required a high degree of scientific literacy, which was intimidating and alienated some participants. Both sides looked for scientific data or hired experts to validate claims, but where people accessed information depended on perspectives on the mine and where people placed their trust. Those in support of the mines trusted the information from industry sources and expressed distrust for information from environmental organizations. One interviewee stated, “the only thing that separates the people who want the mine from the people who don't is that the people who want the mine believe the company, that they can mitigate any negative effects” (Hearing Participant

05). Mine opponents looked to academic studies, expert reports, environmental non-profit organizations, and in some cases hired experts to generate independent analyses. Because of the historical and ongoing mining in the region, many people could also draw from their personal or local knowledge of mining to make sense of Benga's plans.

If I look at selenium, for example, because that's probably one of the most controversial, and you do have the mine saying, "yes, we can do this." And you know, other people going, no, you can't. You look at a bunch of things, you rely on credible, independent, third-party research, which was the group that we hired to actually do that analysis. There's actually a lot of documented scientific evidence out there from places that have had similar types of coal mining in similar terrains. We looked, for example, at a lot of Teck's data, because Teck is in virtually the same geographic strata that they're talking about using here, they have been mining in that area for 25 years. So, what's been their experience? ...Their last experiment killed all the fish in a stretch of the Fording River. Community Organization 07

Participants also had concerns about representation and who had standing. Many felt that certain voices were prioritized. Some thought there was not enough local participation, particularly from grassroots Indigenous nation members, outside of Chiefs and Councils. Mine proponents felt that there was too much emphasis on lay information, and in their appeal to the Alberta Court of Queen's Bench, they argued that the joint review panel gave too much credit to the experts brought in by the community (Ho, 2022). Some opponents felt similarly:

...the big groups were groups from away, and we felt like that they weren't really speaking for people in the Crowsnest Pass, that they were, you know, sort of imposing their values and beliefs and whatever positions on us. ... as we were listening to the weeks and weeks and

weeks of that hearing, that there were a lot of people speaking about us that weren't us.

Community Member 02

Combined, procedural issues created barriers to accessing the IA process, which was frustrating and disempowering for community members.

Third Point of Impact: Contention and Conflict

Conflicting perspectives on the mine, the prolonged and frustrating process, and contextual factors combined to polarize communities and create conflict. Diverse and often conflicting scientific and technical conclusions on various issues contributed to polarization, leading to conflicts over whose perspectives were most valid. For example, there were conflicting perspectives on the economic impacts, the quality of the coal, and the efficacy of Benga's selenium mitigation strategy.

... people pick a particular position and then cherry-pick the information that supports that and refuse to look at the weight of evidence that's available, that might help them come to another conclusion. And a good example is the contention that the Grassy Mountain mine was going to produce this cornucopia of jobs, and that this was going to be the huge economic boon for the Crowsnest Pass. And yet, the literature, based on research done by some folks at the UBC, looked at three metallurgical coal mining communities in BC, and came to the exact opposite conclusion based on a very rigorous review of the promises made about royalties and rents and benefits to the community. Subject Matter Expert 01

These contradictions played out in the hearings, where mine opponents questioned claims made in Benga's EIA. For example, they challenged Benga's approach to analyzing fugitive dust and the impacts of wind speeds on dust dispersal (IAAC 2020a, IAAC 2020b). The assumptions used in modelling can make a large difference in the resulting estimates of fugitive dust dispersal. While Benga's consultants asserted that they used industry standard models,

consultants supporting environmental groups countered that these models do not reflect the latest best practices (IAAC 2020a). Benga also used wind speed averages that may not account for extreme wind conditions that are relatively common in the area (IAAC 2020a). Residents spoke about their personal experiences with the wind in the area, which they did not see captured in the EIA; a wind must be experienced to be fully understood (IAACb). Benga's models assumed that winter snowpack would reduce or eliminate dust in the winter months, but residents noted that Chinook wind conditions regularly melt snowpack in even the most severe winters (IAAC, 2020a; JRP, 2021). This issue was a factor in the JRP decision, although the panel acknowledged a lack of consensus on the appropriate methodology for measuring dust in these cases (JRP, 2021).

Trust in government and industry actors affected people's perceptions. For example, some saw Benga's investments into the community as indications of good corporate citizenship, while others saw cynical attempts to manipulate locals and gain social licence to operate. For instance:

...you have to look at what they've already done for the community. They own the property where the golf course was that they needed for their purposes. And, you know, they didn't terminate the lease and say go get yourself another golf course, the money they spent keeping the community whole. And I'm sure you've been up to the golf course and seen what's there, we could have never afforded to put a project like up there. So, to me, that speaks to the integrity of the company. Business Owner 01

Versus this perspective:

When you look at what Riversdale didn't do, didn't fulfill, didn't comply with, it's pretty much a no-brainer, really, that they wouldn't be accepted to continue. I mean, they were

an incredibly arrogant company that just figured they can get away with this and build golf courses and make everybody happy and put in this little coal mine, and nobody's gonna notice, without achieving the main things that were asked of them by the AER.

Business Owner 02

As awareness of the mine grew and people engaged with the IA process, the mine became increasingly controversial, creating conflict and exacerbating existing divisions. Interviewees shared experiences of personal attacks and altercations in public and private spaces because of opposing views on the project. Numerous interviewees discussed damage to personal property, such as vehicles being vandalized. The atmosphere on social media, where much of the discussion played out, was particularly acrimonious. The conflict damaged relationships within families, among friends, and in professional circles. The volatility connected to the mine discussions decreased feelings of safety in the community and even affected some people's willingness to participate in interviews for this study. Others expressed discomfort with answering particular questions and were uncomfortable being seen with the researcher.

...it was really split in this community, where you had people who were, like, dead against the mine, and then you had people who really wanted the mine for job employment, right. And but both of them had really compelling arguments from both sides of the story. But it really split the community, which was really unfortunate.

Business Owner 03

External influences, such as the provincial political climate, increasing media attention, and province-wide activism regarding the mine, exacerbated tensions. Opponents of the mine felt supported, while those in support of the mine felt betrayed and attacked.

...when the provincial-wide lobby against coal started, that's when the divisions in the community started to become firmed up, and division started...the social media and everything there, all that contributed to it. So, I think leading up to the hearing, it was under the table, but sort of under, you know, an undercurrent, but became very mainstream afterwards. Community Member 15

The Covid-19 pandemic also played a role in how the process was received. Pandemic restrictions moved the hearings online, which gave some people more access but posed barriers for others. People had more time to observe and participate in the process, which influenced the level of participation in both the formal process and informal activity surrounding it. Tensions in the community were already heightened because of controversies over health mandates and vaccines. Individuals were more isolated than usual, contributing to division and impacts on community cohesion. Further, the pandemic created an increase in recreational users in the mountains, so more people in the province were aware of the area and had forged personal connections to the region.

...we were just inundated with, you know, vicious emails and phone calls. And, you know, the, the level of animosity in this was like something I've never seen before. And I think the pandemic obviously a lot to do with that, but we have to as politicians and government, try and find a way to rebuild that trust in our institutions and those regulatory processes, and I'm not sure where it was lost. Elected Official 04

I think the pandemic, you know, had more people at home, gave them a little bit more time to, you know, hear some of these things that weren't necessarily true, and

unfortunately, a meaningful number of Albertans has allowed other people to make up their minds for them. Subject Matter Expert 02

Participants shared how there was no space in the conversation to express uncertainty or neutrality toward the mine, limiting the possibility of discussion. Many people had friends and family with opposing viewpoints. Some people hid or censored their true thoughts on the project for fear of conflict or reprisal. Because the communities in the region are small and close-knit, anonymity is difficult. Even when people hid their opinions, people made assumptions about other's position on the mine and on their motivations based on who they were.

I didn't want to say anything for a long time, too, is because, you know, I probably had about five friends who worked at Benga. And I really liked them. And now, what does that mean, if all of a sudden something doesn't go through? Are they going to lose their job? What does that look like for them? ... that was an internal struggle for me. Business Owner 03

Even though many participants were concerned about social impacts, they expressed the need to focus on scientific or technical arguments in public-facing conversations. Whenever possible, participants brought in data to support their positions to appear objective and scientific. Scientific or technical claims were used to discredit opposing positions, particularly emotional or subjective arguments.

I think there is, definitely has been this narrative from the, from the coal industry, particularly that, you know, anyone opposed to coal just doesn't have the facts, they're too emotional, they're, they're just, you know, knee jerk reactions. And so it was really important for us to put together those 70 pages of, of literature and rationale of why we think that coal does not have a place in that landscape. Environmental Organization 07

Some participants expressed frustration about the focus on technical arguments at the expense of emotion and passion.

... in this whole coal thing we keep getting, we have rhetoric from our government saying, we're environmentalists, and we're anti anti-resource development, and that we're emotional... I would say, of course we're emotional because we live and breathe this, and we manage it for generations...we're managing this so this is viable to pass on. Rancher 01

The IA process took a toll on the mental health and well-being of community members. The perceived stakes were high, both for those who supported and opposed the project. Further, the process took a long time and was difficult to navigate. Participants experienced fatigue, frustration and anxiety as they anticipated the implications of the decision, navigated the process and contended with conflict. Weakening community cohesion was felt on a personal level, increasing anxiety.

I started to feel a sense of my peace being threatened and disrupted by the project, and also, by a growing awareness of how divisive this issue was in the community, and just made me really anxious. We had so much anxiety as this thing became more and more real. Hearing Participant 03

Lines between insiders and outsiders were drawn more firmly. There was a sense that newcomers did not understand the nature of the community and its history and should not be able to speak for the community. Even some long-term residents who did not support the mine felt unwelcome in certain spaces. Several participants who had migrated to the community wondered if previous feelings of community belonging were false. They began questioning their place in the community and previous feelings of connection.

... I really felt a deep sense of real dismay... I came into the community with open arms, and wanted to embrace this community. I almost felt at that moment like I'd been wearing blinders. And that there was suddenly this realization that no matter what you think, no matter how much you think you belong, you really don't belong. Hearing Participant 03

The polarization and community divisions continued after the IA processes ended, partly because people were unhappy with the decision and partly because of the perception that the process to arrive at a decision was unfair. One participant joked, “The only thing that I think is going to save this community is if we have another disaster” (Community Member 10). Some speculated that the community's polarisation and the resulting breakdown of relationships would be difficult to heal and likely have long-term implications. As one interviewee stated, “I think a lot of that has caused forever damage between families, friends, and community” (Rancher 01).

Participants talked about the economic impacts of the process on the community, both positive and negative, such as anticipatory impacts on investment discussed above. As one participant stated, “...there will be substantial damage done, even though the mine isn't going, on the real estate impact and the awareness or the perception that there's going to be a coal mine here” (Community Member 07). Others also spoke of the potential of scaring off future investments because the process was tedious, and the decision may seem unfair to future investors. The conflict associated with the project also had economic impacts on local businesses, as some were boycotted or supported, depending on the side taken.

The project, and the process, also created divisions between communities in the region. The CNP municipal council was strongly in support, while Ranchland MD was against the mine, which put pressure on the working relationships of municipal councils. Participants expressed feelings of betrayal and abandonment by the government and the rest of Alberta. In the CNP,

many participants expressed resentment toward landowners and ranchers, though not all ranchers were in opposition. This resentment was based on the notion that ranchers and landowners outside of the CNP are well-off compared to the economically struggling people in the CNP and do not have the same economic stake in the mine's approval. Further, many felt that ranchers' opposition to the mine was hypocritical, given the environmental impact of cows on the landscape.

What's unfortunate to me is we never protest factory farming. We never protest the Picture Butte Cattle feedlots where there's enough manure produced to equal the sewage from a city of 5 million. We don't go out and advocate against these big feedlots. By the way, agriculture is the biggest polluter, not the coal industry, by any means. We don't go out and say to them, you can't build anymore feedlots because we know it's necessary. And we know that they're going to do things to control their manure. It's the same with mining, we know selenium is leaching from some of the rock dumps and needs to be treated and we know suspended solids can cause problems to spawning beds, so both are removed before entering the receiving environment. Community Organizer 02

Both supporters and opponents of the mine expressed frustration with municipal councils in Pincher Creek and Crowsnest Pass. Participants felt their municipal representatives did not engage with the process adequately, did not consult citizens, did not allow space for alternative points of view, or did not provide leadership to bring various sides together. Some research participants had empathy for councillors, understanding the ongoing pressing concerns already facing rural municipalities. Further, navigating the process took resources and experience councillors did not have.

... [council is] certainly ill-equipped to manage a major project once the ball gets rolling, or manage the community's interests, once a project gets rolling. So, when I say the performance was weak and largely absent, maybe that's understandable, under the circumstances ... this whole process was so far beyond them. Community Member 01

Local municipalities dedicated significant resources to navigating the IA process and dealing with associated issues, taking resources away from other issues or economic opportunities. This included engaging with the mining company and making plans for the impacts of the mine if it were to move forward, such as CNP's annexation attempt. The process took over a decade, with initial engagement from Riversdale in 2011, and the Supreme Court decision came down in September 2022 (SCC 2022). Hope for coal mine revived old narratives based on the region's coal mining culture and history, and stalled transition efforts. According to one interviewee, "This last Council, they really hung their hat on the mine" (Community Member 09). While municipal councils focused on mines, other diversification options received less attention.

I don't see a lot of planning coming and a lot of foresight out of them [the Municipality] if the mine doesn't go ahead, and what really worries me is that I don't think there's been that thought put into what else can we be doing. Community Member 09

Many interviewees, both for and against the mine, were concerned that their municipal government did not have a strong vision for the future outside of coal.

I think the municipality's role is to say, okay, look, we've got to decide what we want to do now, and go for it. And put some processes in place and some people in place to do just that. ... And they can also take a little bit of a role in moving that horrible negative, stuck in the past, angry-fueled, conversation. They can take a role in leading that charge

into something a little more positive instead of remaining silent, and it takes a great big pair of kahunas, but that's their role. And none of them are stepping up to do it.

Community Member 05

This IA also damaged trust in provincial institutions for both opponents and supporter of the mine. Some participants entered the process with pre-existing distrust for the AER and the IA process in Alberta. This was particularly evident among opponents of the mine, in part because of previous experiences with IAs and the perceived pro-industry bent of the provincial government. As one interviewee stated “... industry is in charge, they got the fox guarding the henhouse, so to speak” (Community Organization 09).

After the decision, both those who agreed and disagreed with the outcome expressed decreased trust in government and regulatory institutions. Many thought the outcome was predetermined, suffered from provincial or federal government interference, or that the panel was biased because it was appointed under the previous left-leaning New Democrat government. Many, including some who opposed the mine, felt that the process and outcome were not fair to the proponent because of the length of time involved, the amount of information required, and the political nature of the final decision. Others felt the right decision was made because of the hard work of the people and organizations who dedicated considerable time and resources to participate, despite a broken IA system. When a final decision is made at the political level, as was the case here, waters are muddied about the role of consultation in the IA process, further undermining public trust. The following quote is from a community member who opposed the mine but felt that the process served neither the community nor the proponent.

...it pretty well destroys my faith in the competence of the regulatory process, competence in the ability to make a considered intelligent decision. And validates, you know, what

I've seen, personally, historically, in the way this system has operated in Alberta, increasingly, is that it's very easily politicized. Community Member 01

Research participants were left with the impression that advocacy and political influence are more likely to affect the outcome of IA than participation in the formal process. While some participants gained skills and experience with the IAs, most felt disempowered. For some, the experience meant they would be less likely to participate in the future. Others will get involved earlier but are more likely to focus on strategies outside the formal process.

Discussion

This case reveals the significant damage to communities when IA processes become a battleground for competing visions. After the Grassy Mountain IA process, communities were left weaker, relationships were damaged, and by all indications, these rifts will be difficult to heal. While the process did bring some people together, in most cases, this was despite the process rather than because of it. For example, before the decision, individuals and organizations collaborated to coordinate efforts against the mine, and after the decision, others united in objecting to the outcome. The adversarial nature of the process also missed the opportunity to build on significant areas of common ground. In this case, concern for the environment and the local economic situation were important to participants on both sides of the debate, but the process only emphasized the differences.

Not all of the tension can be attributed directly to this project. Like other rural places and small towns, the region has undergone significant changes in recent decades. According to Halseth and Ryser (2017), “Accelerating change has been a defining attribute of rural and small town places around the world” (p. 3). The resulting shifts in population and the economy can lead to conflicts (Halseth & Ryser, 2017). In this case, conflicting risk perceptions related to a range of issues have emerged, underpinned by competing worldviews and value systems. For

example, conflicts between motorized and non-motorized users of the backcountry, supporters of industry versus supporters of tourism, external environmental organizations versus local residents, and between people who could trace their roots to the area for generations vs those who had migrated more recently (Jaremko, 2016, Van Assche et al., 2021; Van Der Marel et al., 2020). While these differences can co-exist or even be complementary, the charged nature of the Grassy Mountain conversation polarized the community and exacerbated differences. Contextual factors also contributed to the polarization, such as the political mood in the province and significant media attention. The context of the Covid-19 pandemic was also significant. These contextual factors interacted with local history, culture and geography to polarize perceptions of the project.

Similar to Colvin et al.'s (2019) findings in Tasmania, the Grassy Mountain IA reduced trust in the regulatory process. Reduced legitimacy of IA processes is a problem for governments as they adapt to new challenges like climate change and energy transitions (Colvin et al., 2019). This is particularly true in the context of broader environmental challenges such as climate change and ongoing biodiversity loss. Further, public trust in the regulatory process is important for industries like coal that are seeking social licence to operate. The legitimacy of environmental decision-making processes is thus crucial, as the potential impacts of these decisions have implications at all levels of society and for generations to come (Day et al., 2019, Larsen, 2016; Weston, 2004).

Beck predicted that trust in science and experts would decrease in the risk society, but that is not clearly borne out in this case (Beck, 1992). Some authors argue that people tend to rely on data from sources they personally find credible (Weston, 2004; Whyte & Crease, 2010). In this case, people selectively trusted science and data, looking for information from sources

they trusted or aligned with their positions. Consistent with Sarewitz's thesis, the availability of multiple scientific perspectives supported conflicting points of view and contributed to controversy (Sarewitz, 2004). This is demonstrated well in the debate around wind and dust, where Benga's scientists, environmental organizations, and locals with personal experience all had valid perspectives on the impact of local wind conditions on dust dispersal. Both sides used scientific and technical information to back up their claims. Science thus increased division as there was no definitive or universally trusted scientific consensus on key issues.

The technoscientific focus of IA is at odds with how people evaluated the mine proposal, however. While risks and benefits were important, participants were concerned about subjective social issues such as culture change and visions for the community's future. When community members expressed passion or emotion, others dismissed their arguments. Participants worried that only scientific or technical points were valid, and focused on scientific arguments, even where underlying motivations may have been personal or subjective. Scientization of IAs thus obscured deeper social meanings and devalued the social factors that are important to people, contributing to polarization.

Other issues tended to bleed into the conversations about Grassy Mountain, but some things simply cannot, or should not, be dealt with at the level of IA. Because IAs are focused on technical issues related to a single project, they are not well equipped to deal with broader social conversations (Lockie, 2001) or macro-environmental issues (Smart et al., 2004). The Grassy Mountain IA became a de facto location for conversations about the region's future, economic diversification options, and the viability of the tourism industry. Some of the bleed in scope was because participants had no other place to discuss these broader issues. Interviewees mentioned a need for more community-level vision and leadership, and venues to explore visions and

strategies for the future. Local municipalities were mired in other challenges, however, and lacked the resources or vision to provide leadership on economic diversification or had limited support from other levels of government. Van Assche et al. (2019) found that the Crowsnest Pass suffers from weak governance institutions and requires more support from other orders of government for its development. This is consistent with research on rural and resource-dependent communities which are undergoing ongoing change in reaction to shifting pressures and opportunities, but traces of previous economies persist (Halseth & Ryser, 2017). These changes, and the imperative to move toward more diverse and resilient economies, are complicated and small communities seldom have the capacity to navigate them (Halseth & Ryser, 2017; Mitchell & O'Neill, 2016).

Further, while cumulative issues are sometimes included in IAs, they are poor tools for managing broader policy issues (Smart et al., 2004). Several participants discussed the need for better land use planning to provide clear direction to communities, governments, and industry about allowable land uses. While the IA did have to consider land-use plans, coal is not explicitly dealt with in the South Saskatchewan Basin Plan, which is the most recent broad land-use plan for the region (Jaremko, 2016). Rescinding the 1976 coal policy left a vacuum, with no clarity or guidance regarding coal development on the Eastern Slopes. Participants felt that existing land use plans were inadequate, non-existent, or disregarded. In the absence of good land-use planning, the IA become a venue for debate about acceptable land uses and priorities. IA systems are not designed for conversations at that level, leading to frustration.

Conclusion

Because the project was ultimately denied approval, the Grassy Mountain case provides a unique opportunity to examine novel impacts generated by IAs. Nothing materially changed in

the community, i.e., there was no mine before, and there is no mine now. However, the anticipatory impacts of the prospect of the project, and the real impacts of the process itself, left scars in the community that will not be quickly healed. IAs rely on scientific and technical expertise to assess the impacts of industrial processes. Consistent with Beck's risk society assumptions, the risks inherent in modern industrial processes are complex, potentially catastrophic, and virtually unknowable. A technoscientific assessment provides the illusion of objectivity and rationality to IAs, but decisions about industrial development are ultimately based on value judgements and best guesses. Scientific and technical analysis is important in accurate prediction but is not necessarily definitive. Further, individuals and communities understand risks very differently. Antagonistic IA processes exacerbate tensions created by conflicting risk perceptions, result in significant impacts on individuals, communities, and society at large.

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Chapter 5: Conclusion

Summary of Results

In this thesis, I seek to address the following questions related to decision making for resource-extraction projects: 1) What formal and informal governance processes were engaged to influence the outcome of the Grassy Mountain Mine regulatory review? 2) What influenced resident views on the project? 3) What are the impacts of the assessment process itself? Although there are some overlapping themes, each of the thesis chapters provides insights about a specific question or set of questions.

Chapter Two situates the Grassy Mountain project in Blackfoot perspectives and oral history. This chapter focuses on research questions related to governance processes and reinforces Gobby et al.'s (2019) findings that communities engage in resistance as a form of governance when people lose trust in formal governance processes. Blackfoot sovereignty over traditional territory and responsibility to protect the land inspired opposition in some grassroots Nation members, but they saw no place for themselves in the formal process. By looking in-depth at one grassroots organization, the Mountain Child Valley Society (MCVS), I outlined the strategies used to influence decision-making for the Grassy Mountain mine.

While explorations of place are prevalent in the literature about attitudes toward resource development, Chapter Three demonstrates how this literature is enriched when combined with an analysis of environmental values. Even with access to the same information, community members held widely different perspectives on the project. Sense of place and environmental worldviews interacted with contextual factors to shape these polarized views. While both jobs and the environment were concerns, community members were also concerned about personal and subjective impacts such as cultural change. Decision-making about resource development

can sometimes be derailed by focusing on the tension between jobs and the environment; this study demonstrates how much more than jobs or the environment are at stake for people embroiled in resource development conflicts.

The extensive literature about Impact Assessment deals little with the novel risks associated with IA processes. Chapter Four addresses this gap in the literature and demonstrates how IAs themselves impact communities. In this case, the IA process undermined community cohesion and reduced trust in formal regulatory processes and governments. Polarization and conflict associated with the IA caused anxiety in community members. The focus of IAs on technoscientific approaches exacerbated frustration and tension while obscuring the social impacts of the mine. Even though the mine was not approved, there will be lasting impacts of the process on individuals and communities. The impact of the process on trust in governments and regulatory process has broader implications for the legitimacy of environmental decision-making moving forward.

Policy Implications

The preceding chapters illuminate numerous shortcomings inherent in the existing decision-making context related to resource extraction processes. For example, the focus on scientific and technical knowledge minimises social concerns, alienates participants, and can exacerbate conflict. A more robust process should recognize the contending legitimate scientific positions and underlying values, and to limit reactions and assumptions that science will somehow resolve conflict. Fortunately, in addition to the large body of research outlining the limitations of IAs, there is a parallel literature about best practices and strategies for improving IAs (O'Faircheallaigh, 2007; Kojola, 2019; Walker et al., 2019). This literature addresses many of the procedural issues highlighted throughout this thesis, including strategies for fuller

inclusion of communities in the process, such as taking an intersectional lens to IAs, making them more inclusive and flexible, prioritizing Indigenous knowledges, dedicating appropriate resources to the process, addressing logistical barriers, and employing international best practices for conflict resolution and consensus building (Booth & Skelton, 2010; O'Faircheallaigh, 2007; Winfield, 2016).

Scholars also emphasize the need to adequately address the social impacts of developments (Lockie, 2001; Vanclay, 2003). Building on this, Chapter Four demonstrates the need to include consideration for the social impacts of IA processes. Whereas project proponents are responsible for the impacts of resource extraction projects, no one is responsible for the impacts of the process itself, leaving communities to grapple with the consequences. This creates a procedural justice issue that should be considered and addressed by governments and regulators.

Because of the challenges identified with IAs, the Government of Canada overhauled the current legislation around IAs in Bill C-69 (Dalseg et al., 2018; Walker et al., 2019). Provisions for the inclusion of intersectional approaches and a focus on the intentional inclusion of Indigenous and other marginalized voices are embedded in this bill (Walker et al., 2019). Eckert et al. (2019) analyzed this new bill to determine if and how it addresses identified limitations of IAs, particularly pertaining to the inclusion of Indigenous knowledge. They found that only a few of the above limitations were addressed, but there was potential to address others through international best practices (Eckert et al., 2019). (Doelle)

Resource extraction projects such as coal mines are often located in rural areas (Halseth & Ryser, 2017). However, these communities lack the capacity to manage the complexities associated with IA processes. The study highlights the need for provincial and federal

governments to support rural communities with IA processes and broader attempts to diversify their economies. Some of this support and direction can come from robust land-use planning based on extensive consultation with local populations.

Limitations and opportunities for future research

This project's timeline, pandemic restrictions and resource limitations prevented a more in-depth analysis of the perspectives of Indigenous communities affected by Grassy Mountain. Though outside this project's scope, a more fulsome analysis of the impacts of the IA process on the local Blackfoot Nations and other impacted Indigenous communities would add richness to the research questions.

Scholarship on environmental values and worldview focuses primarily on quantitative approaches, which was a limitation for this study as there were few models to build on. Further qualitative studies examining the interaction between sense of place and environmental worldview could address this research gap.

Chapter Three explores attitudes toward the potential mine but did not discuss how these attitudes influenced how and why people engaged with governance processes. This case kindled significant involvement in formal and informal processes locally and across the province, and new organizations formed because of the project are still active. An analysis of these activities can contribute to scholarship on social movements.

While the original research questions were underpinned by the concepts of environmental justice and just transitions, this thesis does not explore the implications of findings in this case on these justice issues. The many challenges and procedural issues unearthed in this case offer opportunities for future research to delve into justice implications. This is particularly relevant as just transition discourses are currently controversial in Alberta.

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Appendix A: Interview Guide

Introduction:

Hello, how are you?

Thank you very much for agreeing to this interview. Is it okay if I start recording now?

I sent over an information sheet with some details about this study, did you have a chance to review it? Do you have any questions, or would you like me to go over anything? Have you signed the consent statement?

Okay, so I will be asking a few questions. If there is anything you are uncomfortable with, just let me know and we can skip. You can also end the interview at any time, if you want. The interview will be recorded and transcribed. I'll send you the transcription and you can redact any information you don't want to be considered part of the study. Do you have questions?

About the respondent (Residents):

- Can you tell me a little bit about yourself and your connection to the Grassy Mountain mine project?
- How long have you lived here (Crowsnest Pass, Ranchlands MD, or surrounding area)?

Community Context and Priorities (Residents only)

- How would you describe the Crowsnest Pass region/Ranchlands region?
 - Prompt: What do you like about living here?
 - What does the region mean to you?
 - Do you access the mountains for recreation, cultural or other purposes?
- What are the biggest challenges facing your community (CNP, Ranchlands)?
 - Prompt: What are the economic challenges, if any? What are the environmental challenges, if any?

About the respondent (Non-residents):

- Can you tell me a little bit about yourself and your connection to the Grassy Mountain mine project?
- Does anything bring you to this area, like recreation or work?
- What does the region mean to you?

Community Context and Priorities (non-residents)

- How would you describe the Crowsnest Pass region/Ranchlands region?
- What are the biggest challenges facing the Crowsnest region (CNP, Ranchlands)?
 - Prompt: What are the economic challenges, if any? What are the environmental challenges, if any?

Participation in the Governance Process

There are many things that influence whether industrial projects move forward in Alberta. Government regulatory processes, like Environmental Impact Assessments and Joint Federal/Provincial Review panels are important. Other informal factors that influence decisions about whether to approve a project are also influential. For example, activities like letter-writing campaigns or protests, or industry lobbying. I want to ask you about the strategies you or others used as part of the review process, and the reasons why those strategies were chosen.

We'll start by talking about the formal processes. This includes all of the activities that Benga has to go through to get approval for the mine, such as the Environmental Impact Assessment, public hearings, participation in the joint review panel hearings.

- To what extent (if any) did you (your company/organization) participate in any of the formal processes, such as the contributing to the environmental impact assessment, community hearings or the joint review panel?
 - What prompted you (your organization) to participate in these strategies?
- Did the formal processes seem accessible to you?
 - Did you feel heard?
 - Did it take a lot of time/resources to prepare?
 - Was the information presented by the government easy to understand?
- In your observation, was everyone included who should have been?

Informal processes include anything folks did, or are doing, to influence the outcome of the formal regulatory review.

- To what extent (if any) did you (your company/organization) participate in any of the informal processes, such as community meetings, letter writing, protests, webinars, etc?
 - What prompted you (your organization) to participate in these strategies?
 - Are there any other strategies you, your organization, used or are planning to use?
- What kind of strategies did you see others use or are planning to use?
 - (Strategies based on Gobby et al.): Were there any physical disruptions like occupations and blockades? What about legal strategies? Were there any boycotts and other financial pressure? Did you use media, communications, and or other means to raise awareness?
- Did you see any different groups coordinate efforts to have their voices heard?
- Did you see any influence from industry, civil society, politicians, media, or people from other parts of Alberta?
- What do you think influenced the outcome?
 - In your opinion, whose voices had the most influence?
 - Do you think there were any other factors that influenced the outcome?
 - Prompt: For example, the geographical location, political context, historical context, market forces, cultural factors, other

Perspectives on the Governance Process

After the joint review panel decision was released, Energy Minister Sonya Savage and Environment and Parks Minister Jason Nixon released a statement stating they respected the panel's recommendation. They said:

"All proposed coal projects are subject to stringent review to ensure development is safe, environmentally responsible and meets all requirements. In this case, the process worked as it should. The panel's recommendation demonstrates that Alberta's legislative and regulatory framework is robust and thoroughly considers environmental impacts as part of any resource development project."

I want to take each part of this statement and discuss it a bit further get your opinion.

- Do you think the proposed Grassy Mountain Mine project is safe, environmentally responsible and meets all requirements?
- Do you think the project is in the public's interest?
- Do you think Alberta's legislative and regulatory framework is robust and thoroughly considers environmental impacts as part of any resource development project?
 - Prompt: Was the scientific evaluation rigorous? Was the process objective? Do you think the government already had its mind made up?

Procedural Justice

- Do you think the regulatory review process work as it should?
 - What does that mean to you?
- Do you think the process was fair?
 - How do you think regulatory processes like this one could be designed to be fair to the local community?
 - What do you think fairness means when talking about environmental decision-making?
 - Has your opinion about the process changed because of your experience with the Grassy Mountain project?

Representational and Recognitional Justice

- In your opinion, how much can you or the community provide input into decisions about industrial developments like coal mines?

Distributional Justice/Just Transition

In every big development there are always some who benefit most, and some people bear more of the burdens, like pollution and noise.

- Who benefits most if the Grassy Mountain Mine is approved? Who bears most of the burdens?

When governments make decisions about projects like coal mines, they need to consider economic development, and consider people's health and protect the environment.

- In the case of Grassy Mountain, how do you think these considerations can be balanced?
- Who do you think should bear the most responsibility of protecting the environment and addressing climate change- government (three levels), private industry, or someone else?
- Do you think these organizations have the ability to effectively protect the environment and promote development?

Conclusion

- Those are all my questions. Is there anything else you'd like to add?
- May I contact you if I have any follow-up questions?
- Thank you so much for your time and insights.

INFORMATION LETTER and CONSENT STATEMENT

Study Title: Environmental Decision-Making in Alberta: The Case of Grassy Mountain Mine

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Background

This project is a research study being conducted as part of the Principal Investigator's graduate degree. We will speak to key informants about their perspectives on the formal and informal processes that contribute to decision-making related to the Grassy Mountain Mine project in Southwest Alberta. Key informants will be recruited to participate in interviews based on their experience with the project and associated formal and informal activities. This project will provide a holistic look at all the factors at play in the proposed Grassy Mountain Mine review process.

Purpose

This study will develop a fuller understanding of how decisions are made about new industrial projects in Alberta. Many factors influence these decisions. Regulatory processes, such as Environmental Impact Assessments and Joint Federal/Provincial Review panels, are the government's tools for assessing whether coal mines are in the public interest. Many informal elements also influence decisions about whether to approve a project, such as letter-writing campaigns, protests, or lobbying.

Study Procedures

You are invited to participate in an interview about the Grassy Mountain Mine project. If you decide to participate, the interview will take place at a convenient time for you, either in person or via a phone or video call. The interview will be a relaxed conversation, about one hour in length. The interview will be recorded, typed, and reviewed by you to ensure accuracy. Any identifying information about participants will be removed when the findings are presented or published. The findings of the interviews will be complemented by an in-depth analysis of documents related to the Grassy Mountain Mine and surrounding communities.

Benefits

By analyzing the formal and informal processes of governance that impacted the Grassy Mountain mine project, we will gain insights into the environmental governance regimes operating in Alberta. As a token of our appreciation, you will receive a \$10 gift card for your participation.



Risk

We do not anticipate any risks associated with participating in this project. Participation in the project will be kept confidential and transcripts will be anonymized in any public data presentation or publication. Participants will have the opportunity to review a transcript of their interview to redact or clarify any statements.

The interview may include conversations about topics that you find difficult to discuss, such as the local and global impacts of coal mining or the economic challenges facing your community. You can skip any questions or topics they do not want to speak about and can end the interview at any time.

Voluntary Participation

You are under no obligation to participate in this study, and your participation is entirely voluntary. You can also skip any specific question or topic you do not want to answer.

Confidentiality & Anonymity

You will be kept anonymous throughout the project. Any information that identifies you, such as your name, will not be shared without your consent. You may also give or withhold your consent to the use of direct quotes from your interview in the public research materials. If you would like to be named in the public research materials, please indicate so below.

The information you share will be used only for the purposes outlined here. If there is any information that you would not like to share publicly, please let me know.

The audio recording and transcription will only be made available to the principal investigator and supervisor. After the transcription is approved, any identifying information will be removed from the transcription. The anonymized data will be encrypted and stored on secure computers and servers. According to University of Alberta policies, the anonymized responses will be stored for 5 years before being destroyed. Other researchers may use this data in future research projects with approval from the Research Ethics Board.

Further Information

- This study is funded by the Social Sciences and Humanities Research Council
- If you have any questions or concerns about this study or this survey, please contact Amy Wilson at amwilso1@ualberta.ca.
- The plan for this study has been reviewed by a Research Ethics Board at the University of Alberta. If you have questions about your rights or how research should be conducted, you can call (780) 492-2615. This office is independent of the researchers.



Consent Statement

Please circle your answers.

Have you received, read, and understand the attached Information Sheet?

Yes No

Do you consent to participating in a conversation about the grassy Mountain Mine?

Yes No

Do you agree to an audio recording of this interview?

Yes No

Would you like your name to appear in research findings and public materials?

Yes No

Do you consent to the use of your direct quotes in the research findings and public materials?

Yes No

Would you like your direct quotes to be attributed to you? If you select no, the quotes will be anonymized.

Yes No

Signature of research participant

Signature: _____

Date: _____

Signature of researcher

Signature: _____

Date: _____



Appendix C: MCVS Research Protocol

Research Team

Researcher: Amy Wilson
Graduate student, University of Alberta
Email: amwilso1@ualberta.ca

Supervisor: Dr. John Parkins
Professor & Department Chair, Resource Economics & Environmental Sociology (REES), University of Alberta
Email: jparkins@ualberta.ca

Community Research Consultant: Adam North Peigan
Chairman, Mountain Child Valley Society (*Miistakii Pookaw Awahhkoi Kanakkaatsi*)
Email: MCVSpikani@gmail.com

Department: University of Alberta, Department of Resource Economics & Environmental Sociology (REES)

Working Title of the Project:

Grassroots Organizations and the Grassy Mountain Mine: The Case of Mountain Child Valley Society (*Miistakii Pookaw Awahhkoi Kanakkaatsi*)

Timeline

Proposed start date: February 1, 2022
Proposed end date: September 30, 2022

Funding

This project receives funding from by the Social Sciences and Humanities Research Council (Canada).

Research Objectives

Purpose

This project is a case study within a larger project, *Environmental Governance in Alberta: The Case of Grassy Mountain Mine*, which is examining the formal and informal processes that contribute to environmental decision-making related to the proposed Grassy Mountain mine in southern Alberta. Regulatory processes, such as Environmental Impact Assessments and Joint Federal/Provincial Review panels, are the government's tools for assessing whether coal mines are in the public interest. Many informal elements also influence decisions about whether to approve a project. For example, activities such as letter-writing campaigns, protests, or industry lobbying. All these factors make up the governance regime.



As part of this larger study, this case study will focus on the Mountain Child Valley Society (MCVS) *Miistakii Pookaw Awahhkoi Kanakkaatsi* to demonstrate how one organization is participating in the governance regime around the proposed mine. This will provide insights into the role of grassroots organizations in environmental governance in Alberta.

Scope

The scope of this Research Project will involve conversations with key informants about the history, activities and context of the MCVS.

Ethics

This Research Project and Agreement will be submitted to and approved by the University of Alberta Research Ethics Board. The Researcher will adhere to the recommendations of the Ethics Board, as well as the Tri-Council Policy Statement of Ethical Conduct for Research Involving Humans.

Research Design & Methods

Community Research Consultant

Liaising between the research and the MCVS will be led by the Chairman of the MCVS, Adam North Peigan, who will act as Community Research Consultant. The Community Research Consultant will coordinate all communication and activities with members of MCVS and provide regular updates about MCVS activities.

Interviews

The bulk of data collection for this project will be in the form of key informant interviews. The Community Research Consultant will set up interviews with relevant MCVS members and/or Piikáni Elders. Interview guides will be developed with input from and approval by the Community Research Consultant. We would aim to carry out between 2-5 interviews over the duration of the project.

Participants will be encouraged to speak in the language they feel most comfortable with, and a translator will be organized if required. Participants will receive an honorarium or a token of appreciation for sharing their knowledge in the interview, either monetary or another protocol that is deemed appropriate. These interviews will take place at a time and place that is convenient for each participant, and at a location of their choice.

Document & Media Analysis

Other methods of gathering information might include analysis of documents, such as submissions to the Joint Review Panel hearing for Grassy Mountain, Coal Policy engagement submissions, and press releases. The project may also conduct an analysis of media and news coverage related to Grassy Mountain mine and the MCVS.

Informed Consent & Verification

Individuals will be invited to participate in the project in the form of an interview. The participant will receive an Information Sheet and Consent Form to ensure they are aware of the nature of the Research Project. If the participant does not want to participate in an interview, it will not take place. Participants



will be asked to both consent to participate in the interview, and to have the interview results used in reports or publications. Oral or written consent will be obtained from the participant. The participant will indicate if they would like to remain anonymous or be named in association with their interview, and if they consent to direct quotes being used in publication. The Researcher will share the interview transcripts with the interview participant for their verification to ensure the information is accurate.

Intellectual Property

Ownership, Control, Access, & Possession

The information gathered from individuals during the interview process is the personal information of those who have shared it, and it will be treated as such. The interview participants will retain ownership over any knowledge they have shared. Giving consent to participate in an interview does not waive ownership of their personal information and knowledge.

In this partnership, the MCVS will guide and control the research process. This is done by engagement in all phases of the process, from project planning, implementation, analysis, and dissemination of outcomes. The individual interview participants also have the control to voluntarily participate in an interview and to withdraw their consent at any time during the interview without penalty. They may withdraw part or all of the interview within three months of the interview date, and the interview material will not be used.

Individuals will have access to the information they share in the interview process at any time. Written transcripts of audio-recorded interviews will be shared with the interview participants to review and consent to that version being used in the analysis.

Possession of information is the means by which ownership is protected. The researcher will have access to the information during the research process. The information will only be used for the purposes of the project outlined in the Research Agreement. Upon completion of the project as it is outlined here, the information (ie. transcripts and recordings from interviews, focus groups) will be stored with the Community Research Consultant for future use in the community. A copy of this information will also be stored on a university server that is accessible only to the researchers named in this agreement. The information will be used for presentations or publications, pending the written permission of the community. If for any reason the information should be used in the future, the Community Research Consultant will be contacted.

Reporting Research Outcomes

Within the community

This project will continue to evolve and be shaped as community participation in interviews, focus groups, and informal conversations takes place. The lines of communication between the Research Team and community members will be open to report on the project progress throughout each stage of this process. When findings are emerging, these will be shared with the Community Research Consultant. Methods of knowledge sharing may include written platforms such as reports, or other venues as per the Community Research Consultant's advice.



Outside the community

Sharing the outcomes outside the community will have the benefit of creating awareness of the activities of MCVS, and more generally, the role of Indigenous grassroots organizations in environmental governance in Alberta. This will inform other organizations or communities pursuing similar goals. The outcomes of the project may be shared with other organizations, media outlets, and in the form of conference presentations, a master's thesis, and other academic publications which are made available to a wide audience. Co-authorship of publications with the Community Research Consultant will be coordinated and agreed upon prior to publication. Use of outcomes for publications or presentations will be reviewed by the Community Research Consultant before distribution, and all participants will be acknowledged for their participation.

Extension, Termination, or Amendment

In the event that the Community Research Consultant has reason to believe that the terms outlined in this agreement are not being met by the Researcher, they may terminate the Research Project and this Research Agreement. Any amendments to this Research Agreement will be carried out collaboratively between the Researcher and the Community Research Consultant. If the Research Project is terminated, the Researcher will return all original and copies of raw data including video, audio, and written transcripts to the Community Research Consultant.

Role of Community Research Consultant

The Community Research Consultant agrees to:

Support the Researcher in gathering information, such as identifying and coordinating with potential interview participants

Act as cultural advisor as required, for example in the use of appropriate protocol

Participate in and support the project (provide guidance on interview questions, participation in interviews, co-analysis of the results, provide feedback on the project, presentation of research outcomes within and outside the community)

Review any reports and materials intended for public communication and distribution

Role of the Researcher

The Researcher agrees to:

Proceed with the Research Project according to the terms and conditions set out in this Agreement

Provide regular updates to the Community Research Consultant as relevant information emerges

Act as an ongoing resource person for the community with respect to the Research

Draft reports and other documents as necessary

Facilitate provision of honoraria and protocol as discussed



Signatures

Signature of Community Research Consultant:

Community Research Consultant	Name (please print)	Date

Signature of Researcher:

Signature of Researcher	Name (please print)	Date

Signature of Supervisor:

Signature of Supervisor	Name (please print)	Date



Appendix D: Information Letter and Consent Statement MCVS

Study Title: Civil Society Organizations and the Grassy Mountain Mine: The Case of Miistakii Pookaw Awahhkoi Kanakkaatsi (Mountain Child Valley Society)

Principal Investigator:

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Community Research Partner:

Adam North Peigan
Chairman
Mountain Child Valley Society (MCVS)
Email: adamnorthpeigan@gmail.com

Background

This study is part of the Principal Investigator's graduate degree. We will speak to key informants about their perspectives on the formal and informal processes that contribute to decision making about the Grassy Mountain Mine project in Southwest Alberta, and the role and history of the Mountain Child Valley Society in the debate about coal development in Alberta. Key informants will be recruited to participate in interviews with support from the Community Research Partner. This project will provide a holistic look at all the factors at play in the proposed Grassy Mountain Mine review process.

Purpose

This study will develop a fuller understanding of the role of Indigenous organizations in environmental governance in Alberta, as part of a larger study titled *Environmental Governance in Alberta: The Case of Grassy Mountain Mine*, which is examining the formal and informal processes that contribute to environmental decision-making related to the proposed Grassy Mountain mine in southern Alberta. Many factors influence these decisions. Regulatory processes, such as Environmental Impact Assessments and Joint Federal/Provincial Review panels, are the government's tools for assessing whether coal mines are in the public interest. Many informal elements also influence decisions about whether to approve a project. For example, activities such as letter-writing campaigns, protests, or industry lobbying.

Study Procedures

You are invited to participate in an interview about the MCVS and Grassy Mountain Mine. If you decide to participate, the interview will take place at a convenient time for you. With your permission, the interview will be recorded, typed up, and reviewed by you to ensure accuracy. Any identifying information about participants will be removed when the findings are presented or published. The findings of the interviews will be complemented by an in-depth analysis of documents related to the Grassy Mountain Mine and surrounding communities.

Benefits

By analyzing the formal and informal processes that impacted the Grassy Mountain mine project, we will gain insights into how decisions about new industry are made in Alberta and who is involved in formal or informal processes. There may not be any direct benefits for participating in this research.

Risk

We do not anticipate any risks associated with participating in this project. Participation in the study will be kept confidential and transcripts will be anonymized in any public data presentation or publication. Participants will have the opportunity to review a transcript of their interview to redact or clarify any statements.

The interview may include conversations about topics that you find difficult to discuss, such as the local and global impacts of coal mining or the challenges facing your community. You can skip any questions or topics they do not want to speak about and can end the interview at any time.

Voluntary Participation

You are under no obligation to participate in this study, and your participation is entirely voluntary. You can also skip any specific topic or question do not want to answer. After the interview, you may withdraw part or all of the interview within three months of the interview date, and the interview material will not be used. You will also receive a copy of your written interview transcript.

Confidentiality & Anonymity

You will be kept anonymous throughout the project. Any information that identifies you, such as your name, will not be shared without your consent. You may also give or withhold your consent to the use of direct quotes from your interview in the public research materials. If you would like to be named in the public research materials, please indicate so below. The information you share will be used only for the purposes outlined here. If there is any information that you would not like to share publicly, please let me know. The audio recording and transcription will only be made available to the principal investigator and supervisor. After the transcription is approved, any identifying information will be removed from the transcription. The anonymized data will be encrypted and stored on secure computers and servers. According to University of Alberta policies, the anonymized responses will be stored for 5 years before being destroyed. Other researchers may use this data in future research projects with approval from the Research Ethics Board.

Further Information

- This study is funded by the Social Sciences and Humanities Research Council (Canada).
- If you have any questions or concerns about this study or this survey, please contact Amy Wilson at amwilso1@ualberta.ca.
- The plan for this study has been reviewed by a Research Ethics Board at the University of Alberta. If you have questions about your rights or how research should be conducted, you can call (780) 492-2615. This office is independent of the researchers.

Consent Statement

Signing this form indicates that you understand the information on this consent form and that you agree to participate voluntarily. You may also give your oral consent to all or part of the study as it is outlined here. The information gathered during the interview process is your personal information and it will be treated as such. You retain ownership over any knowledge you have shared. Giving consent to participate in an interview does not waive ownership of your personal information and knowledge.

Please circle your answers.

Have you received, read, and understand the attached Information Sheet? YES / NO

Do you consent to participate in a discussion about Grassy Mountain Mine? YES / NO

Do you agree to an audio recording of this interview? YES / NO

Would you like your direct quote attributed to you? If you select no, the quotes will be anonymized. YES / NO

Would you like your name to appear in research findings and public materials? YES / NO

Do you consent to the use of your direct quotes in the research findings and public materials? YES / NO

I consent to a copy of my interview being stored at the University of Alberta YES / NO

Oral consent given YES / NO

Signature of research participant:

Signature of Participant

Name (please print)

Date

I, as the researcher, agree to abide by the terms and conditions described in the information sheet referenced above.

Signature of Researcher

Name (please print)

Date