

THESIS

COPPER-NICKEL MINING IN MINNESOTA:
CARTOGRAPHY OF A NEWS MEDIA CONTROVERSY

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ABSTRACT

COPPER-NICKEL MINING IN MINNESOTA: CARTOGRAPHY OF A NEWS MEDIA CONTROVERSY

The Iron Range of northeast Minnesota became home to modern environmental controversies when logging and mining companies founded small communities there in the late 1800s. Ever since, news media have consistently engaged in public discourse regarding the management of the region's world-renowned natural resources, such as the Boundary Waters Canoe Area Wilderness and Lake Superior (Searle, 1979; Paddock, 2001). But today, as state and federal governments consider approving a new, potentially environmentally risky copper-nickel mining industry, local news sources are under-equipped to produce coverage that can adequately communicate the complex legal, cultural, and scientific processes involved (Kojola, 2018; 2019; Phadke, 2018). Therefore, this master's thesis uses a novel combination of qualitative research approaches — including a hermeneutic reading of 680 newspaper articles and an actor-network theory (ANT) controversy cartography (CC) analysis — to map the associations and arguments of journalists, stakeholders, and policymakers and provide them with a reference resource they may use to inform their coverage and decision-making moving forward. Ultimately, this study conveys the complicated nature of the controversy, describes patterns of polarization apparent in sampled news coverage, and establishes a platform to empower future academic research, journalistic application, and public deliberation.

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Chapter 1: Introduction

Minnesota has been home to wicked problems of natural resource management since long before it became a state in 1858, as it is the setting of approximately 12,000 years of indigenous human settlement and nearly four centuries of European engagement and colonization. During the Fur Trade era beginning in the 1600s, indigenous tribes of the region held considerable leverage over an inter-continental economy by controlling access to trapping lands prized by French voyageurs (D. Treuer, 2019). Later, however, power imbalances allowed the US federal government and the state of Minnesota to conduct a comprehensive, systematic effort to dispossess native groups of the land's natural resources (A. Treuer, 2015). No discussion of the state's modern environmental controversies can be considered complete without acknowledging this integral history, so that is where this introduction begins.

During the American Civil War, two main indigenous tribes, the Dakota and the Ojibwe, lived in numerous bands and clans across the newly minted state of Minnesota. Both naturally sought to resist the exploitative settlement of their ancestral lands by American colonists, whose governments stood to gain financially from removing indigenous people from the landscape (D. Treuer, 2019). First, to signal an end of the US-Dakota War of 1862, President Abraham Lincoln ordered the largest mass execution in the nation's history to date — 38 Dakota men accused of violence were hanged together in Mankato, MN, on the morning after Christmas Day (Harper's Weekly, 1863; New York Times, 1862). Six months later, state and federal officials signed the Treaty of Old Crossing with a delegation of Ojibwe leaders, from whom 11 million acres of land was taken without intent of compensation (A. Treuer, 2015).

These events set in motion the controversy at the heart of this master's thesis and established a precedent of exploitation that continues to this day, as native groups persist in advocating for the protection of the lands they still control.

In the 1880s with the threat of indigenous resistance largely resolved, extractive prospectors were allowed to found a string of small towns atop the Mesabi and Vermillion iron ore deposits in the vast forests of northeast Minnesota, collectively known as the Iron Range. Here, poor Euro-Scandinavian immigrants with largely socialist political views were employed by logging and mining companies that contributed significant taxes to local governments and helped make the area's growing population relatively wealthy (Manuel, 2015; Nemanic 2007). Hibbing, MN, even boasted at the time the most expensive high school building in the nation, a so-called "castle in the woods" funded with public money in the heyday of the region's iron mining industry (Brown & Jacob, 2020). But eventually, industrialists like US Steel founder J.P. Morgan monopolized the local market and engaged in deadly campaigns of political misinformation and cultural polarization to break the strikes of miners fighting to secure better wages and living conditions for their families (Adams, 2000; Eleff 1998; Stolpestad, 2020). Similarly, lumber baron E.W. Backus led an aggressive but failed campaign in the 1920s to build a series of hydropower dams on the international boundary waters northwest of the Iron Range that would have raised regional water levels by as much as 80 feet, flooding and destroying extensive swaths of wilderness and human settlements for his sole financial benefit (Paddock, 2001).

Galvanized by such attempts of corporate exploitation, environmentalists like Ernest Oberholtzer and Sigurd Olson rallied local, state, and federal governments to help establish the

Boundary Waters Canoe Area Wilderness of the Superior National Forest, a largely road-less, motor-less nature preserve on the Canadian border that limited some commercial development and forced the eviction of dozens of wilderness resort owners in the protected area (Searle, 1979). In the aftermath of World War II, the Minnesota iron mining industry collapsed, and a generation of Americans sought new opportunities for outdoor recreation (Adams, 2000). This decades-long process confirmed the region's second cultural and economic touchstone of environmental stewardship, but it also bitterly divided the population along nuanced fracture-lines.

Politically, northeast Minnesota is an anomaly for not exhibiting the same style of conservatism common in other rural parts of the state. Instead, the Democratic-Farmer-Labor Party of Minnesota (DFL) — the state's unique alternative to the Democratic Party — and its more socialist, populist predecessor the Farmer-Labor Party has dominated Iron Range politics for more than a century (Kojola, 2018). However, as the polarization of mining projects there has increased in recent decades, the region has found itself wading in new political waters. First, a majority of the self-described Iron Rangers of Minnesota's 8th Congressional District, who had twice voted for President Barack Obama, voted to elect Donald Trump in 2016. Though they chose not to reelect him for a second term, they did vote for a Trump-endorsed candidate to represent them in Congress in 2018 — the first time a Republican held such a role there in nearly 75 years. These changes have strong implications on the identity of the region and the ongoing debates about its future (Brown, 2020).

For now, the political and cultural divisions between mining and environmentalism — between the Iron Range and the Boundary Waters — remains an apparent source of societal

tension for locals, who now face the most contentious chapter of the region's ongoing environmental controversy: copper-nickel mining. Otherwise referred to as "hard rock," "nonferrous," or "sulfide" mining, copper-nickel mining poses greater risks to the environment and public health than does the regionally common taconite iron ore mining, which has remained a widely accepted tradition on the Iron Range, despite its modest pollution of community water sources (Baeten et al., 2018) and its effects on local miners, who have died from cancer, mesothelioma, and heart disease at higher rates than non-miners (Allen et al., 2014). The unique processing and storage of waste rock required of copper-nickel mining is likely to disperse more dangerous toxins into the surrounding air and water, while causing other significant environmental consequences (Braslau, 2018; Frelich, 2019; Lapakko, 2013; Myers, 2016). Scientists and doctors, in response, have urgently called for more research into the potential health effects before the state's first copper-nickel mines are approved by government regulators (Jones et al., 2017; Onello, 2016).

Aside from introducing these risks, however, a new hard rock mining industry would also create a number of high-paying mining jobs and benefit the local economy, at least in the short-term (Kojola, 2019; Stock, 2018). Furthermore, as mining proponents argue, the domestic production of metals like copper and nickel may be important for matters of national security to prevent other countries from controlling future supply. But while the global demand for renewable energies and electric technologies that depend on these metals is expected to increase, the profitability of Minnesota's mining proposals is not guaranteed, due to the industry's current over-supply and the ebbing global economic super-cycle that may continue to keep their values low (Grandell et al., 2016; Habib & Wenzel, 2014). With all sides

acknowledging the “boom-and-bust” legacy of taconite mining on the Iron Range, vitriolic debate grows between those seeking to revitalize the economy with a new copper-nickel mining industry and those who emphasize the economic value of the area’s wilderness and clean water resources (Phadke, 2018).

Two proposed copper-nickel mines are sited in the heart of the Iron Range, just 20 miles apart from one another but on opposite sides of the Laurentian Continental Divide. PolyMet, owned by the Swiss conglomerate Glencore, is seeking to secure the state and federal permits required to build an open-pit mine in the St. Louis River watershed, which contains Lake Superior to the south. Twin Metals Minnesota, owned by the Chilean conglomerate Antofagasta, has nearly begun the permitting process to build an underground mine in the Rainy River watershed, which contains the Boundary Waters to the north. Both projects, however, must still overcome years of mounting resistance, legal challenges, and global economic changes that could yet prevent them from becoming approved or profitable for the foreign investors who own them. Meanwhile, the Twin Cities of Minneapolis-St. Paul — the urban capitol center of the state — lie approximately 250 miles to the southwest in a third distinct watershed containing the Mississippi River. The combination of these unique political and ecological landscapes sets the stage for the next era of environmental controversy in the state.

To thoroughly understand or resolve the dynamics of such a rich social controversy may not be possible, but this study nevertheless seeks to learn how communication has played a role in it. Minnesota-based newspapers have increasingly produced coverage about PolyMet’s proposed mine since as early as 1999 (Kojola, 2018), and the story of copper-nickel mining in

the Iron Range has been consistently communicated by news media, government agencies, corporations, and grassroots groups representing a wide variety of stakeholders with diverse views (Huffman, 2000). All these actors have utilized public discourse to influence environmental controversies there for decades, and they will continue to do so in new ways. Thus, this thesis draws attention to areas of academic scholarship, journalistic practice, and public deliberation that could, together, help facilitate conflict resolution in the long-term.

Chapter 2: Literature Review

As the previous introductory chapter argues, Minnesota's legacy of environmental controversy has led to the complex social, political, and cultural dynamics that propagate the wicked problem of copper-nickel mining there today. Thankfully, academic literature provides a multitude of scholarly foundations from which to begin an investigation into such a situation. This thesis research — though abstaining from the use of quantitative methods and limited by the time and length constraints of a master's project — aims to utilize as many perspectives as possible, from the highly diverse disciplines of social and ecological sciences to the professional tradition of journalism. It follows the 4-act structure of a qualitative study as defined by Lindlof & Taylor (2017). First, this Literature Review chapter explains the novelty and value of the study, situating it within a well-defined gap in academic literature. Second, the Methods chapter provides transparent details of the study design and analytical process employed. Third, data interpretations are communicated; while the Findings chapter narrates the foundational facts of the controversy, the Discussion chapter analyzes the emergent themes of controversial discourse. Finally, the Conclusions chapter summarizes the study and its implications on the scholarly and journalistic communities consulted.

Many qualitative researchers practice inductive, not deductive science, by explaining observations in natural settings, rather than testing hypotheses in sterile laboratory-type conditions (Lowhorn, 2007). In other words, deductive perspectives test broad assumptions with hypotheses, while inductive approaches draw generalizations from a set of specific observations. Despite their similarities, qualitative scholars have helped define several

contrasting scientific perspectives that vary greatly in their ontological, epistemological, and methodological values and beliefs. Figure 2.1 shows Guba & Lincoln's (1994; 2005) updated seminal description of these five paradigms, which range from what might be called the "hard science" of positivism to more flexible, interpretive perspectives like constructivism.

<i>Issue</i>	<i>Positivism</i>	<i>Postpositivism</i>	<i>Critical Theory et al.</i>	<i>Constructivism</i>	<i>Participatory^a</i>
Nature of knowledge	verified hypotheses established as facts or laws	nonfalsified hypotheses that are probable facts or laws	structural/historical insights	individual reconstructions coalescing around consensus	extended epistemology: primacy of practical knowing; critical subjectivity; living knowledge
Knowledge accumulation	accretion—"building blocks" adding to "edifice of knowledge"; generalizations and cause-effect linkages		historical revisionism; generalization by similarity	more informed and sophisticated reconstructions; vicarious experience	in communities of inquiry embedded in communities of practice
Goodness or quality criteria	conventional benchmarks of "rigor": internal and external validity, reliability, and objectivity		historical situatedness; erosion of ignorance and misapprehensions; action stimulus	trustworthiness and authenticity	congruence of experiential, presentational, propositional, and practical knowing; leads to action to transform the world in the service of human flourishing
Values	excluded—influence denied		←	included—formative	→
Ethics	Extrinsic—tilt toward deception		intrinsic—moral tilt toward revelation	intrinsic—process tilt toward revelation	
Ontology	naïve realism—"real" reality but apprehendable	critical realism—"real" reality but only imperfectly and probabilistically apprehendable	historical realism—virtual reality shaped by social, political, cultural, economic, ethnic, and gender values crystallized over time	relativism—local and specific constructed realities	participative reality—subjective-objective reality, cocreated by mind and given cosmos
Epistemology	dualist/objectivist; findings true	modified dualist/objectivist; critical tradition/community; findings probably true	Transactional/subjectivist; value-mediated findings	Transactional/subjectivist; created findings	critical subjectivity in participatory transaction with cosmos; extended epistemology of experiential, propositional, and practical knowing; cocreated findings
Methodology	experimental/manipulative; verification of hypotheses; chiefly quantitative methods	modified experimental/manipulative; critical multiplism; falsification of hypotheses; may include qualitative methods	dialogic/dialectic	hermeneutic/dialectic	political participation in collaborative action inquiry; primacy of the practical; use of language grounded in shared experiential context

Figure 2.1. Five scientific paradigms of qualitative research (Guba & Lincoln, 2005).

Furthermore, this paper considers the need to add a sixth column to the table that defines the emerging paradigm of “post-humanism,” which arguably takes another half-step away from the strict adherence to the standards and practices of positivism (Dr. Joseph Champ, personal communication, May 2021). Considering the myriad academic approaches that could have been employed by this study of Minnesota’s hard rock mining controversy, this literature review describes bodies of relevant scholarly research from all six perspectives, then it defines the unique recipe of theoretical frameworks upon which this thesis combines traditional qualitative approaches with novel exploratory strategies across paradigms.

Wicked Problems of Natural Resource Management (Positivism)

Many scholars of natural resource management — including the professors who taught my undergraduate wildlife management courses — identify most with the paradigm of positivism, which believes that science can depend on verified hypotheses to incrementally help reveal the true nature of reality (Guba & Lincoln, 2017). The field of the human dimensions of natural resource management was developed during the wave of environmentalist movements in the 1970s, firmly established in the positivist biological sciences but contending with the social aspects of modern land use decisions (Colorado State University College of Natural Resources, 2004). These researchers address “wicked problems” of natural resource management — controversies characterized by their lack of any clear solution, in which stakeholders know that the scientific, cultural, and political disagreements they hold with their adversaries may endure indefinitely (Lund, 2012). Aware of the multi-faceted nature of wicked problems, managers of natural resources believe that sound science can inform comprehensive plans to ameliorate them, if applied with strong leadership and an inclusive stakeholder

outreach effort (Endl, 2017; Lund, 2012). Indeed, college wildlife biology majors learn on the first day of class that “wildlife management is people management” (Dr. Susan Ellis-Felege, personal communication, September 2013). Unfortunately for overly ambitious graduate students, people and their constantly evolving social networks and communication technologies may be even more difficult to understand than the wild things of nature they first joined the field to learn about.

One conceptual tool used to account for the human element of environmental decision making is called the planning hexagon, visualized in Figure 2.2 (Benson, 2014).

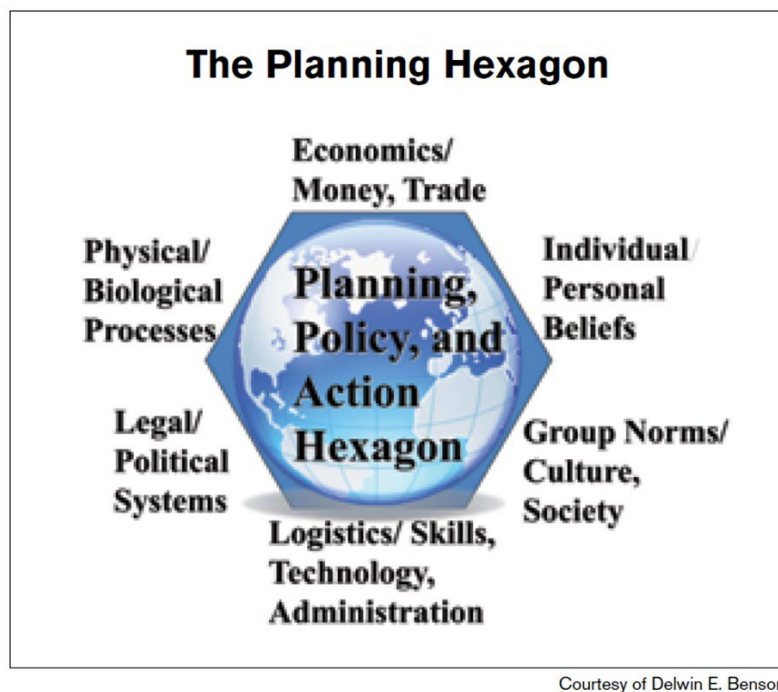


Figure 2.2. The planning hexagon defines six key aspects of the management of natural resources in environmental controversies (Benson, 2014).

By highlighting six main elements of wicked problems, the framework indicates how socioeconomic controversies affect communities in many interconnected ways (Benson & Darracq, 2001; Benson, 2002; Lozano, 2008; Rasouli & Kumarasuriyar, 2016). These factors —

economics, personal identities, group norms, societal laws, natural limitations, and implementation logistics — all represent complex, interrelated bodies of knowledge with which managers should be familiar to best inform their decision-making and contend with their consequences (Benson, 2014). Other researchers have similarly defined “drivers” of wicked problems that span economic, cultural, legal, political, scientific, and communicative factors, in which the roles of journalists, politicians, and special interests are seen to be interconnected and often intractable (Nie, 2003). Mining controversies specifically pose unique wicked challenges and, thus, are the subject of much directed research. One meta-analysis of nearly 350 mining controversies classifies outcomes for local communities into measurable categories, concluding that economic and political factors — not scientific ones — are the most influential (Rodríguez-Labajos & Özkaynak, 2017; Vela-Almeida et al., 2015).

Minnesota’s copper-nickel mining controversy undoubtedly meets criteria to be considered a wicked problem, as it entails connections between all six aspects of the planning hexagon — as revealed by a wide array of qualitative and quantitative studies, including interviews, content analyses, ethnography, and critical histories, in combination with diverse theoretical and analytical frameworks, such as social identification, political ecology, and intersectional justice (Kojola, 2018; 2019; Paddock, 2001; Phadke 2018; Searle, 1979). While ecologists confirm the risks to local water supplies introduced by copper-nickel mining (Frelich, 2019), economists argue over the likely long and short-term effects of the state’s investments in a mining industry reliant on international markets (Stock, 2018). Meanwhile, competing cultural groups negotiate the governance of collective actions affecting shared resources, determining together if a new industry will be granted a social license to mine on the Iron

Range (Phadke, 2018). Whether the state transitions toward or away from socioeconomic models of natural resource extraction, environmental conservation, or both, change is unavoidable. How nature and society may react is the concern of positivist decision-makers and the public at large.

Journalism Studies (Post-positivism)

Post-positivism subscribes to a critical realism, acknowledging the imperfect virtue of science but committing to the concept of an apprehensible understanding of complex realities (Guba & Lincoln, 2017). Furthermore, the post-positivist paradigm arguably resembles the professional perspective of journalism itself, because both believe in the incremental nature of public knowledge-creation and operate under conventional standards of objectivity and validity (Guba & Lincoln, 2017). Journalism studies evolved from the positivist roots of media effects research (Scheufele & Tewksbury, 2007) and cultivation theory (Potter, 2014) to increasingly post-positivist approaches in what journalism studies scholars refer to as the “sociological turn” in the field, which began in the 1970s (Wahl-Jorgensen & Hanitzsch, 2019). This academic community has developed, among many other things, methods of evaluating the reach, engagement, and relational impact of news coverage on civil procedures (Simons et al., 2017). Theories of journalistic framing (Reinecke & Ansari, 2016), agenda setting (Vonbun, Königslöw, & Schoenbach, 2016), and priming (Moy, Tewksbury, & Rinke, 2016) provide more perspectives with which to study the communicative habits and strategies of actors involved in public disputes. Concepts of journalistic objectivity and fair/false balance face unique challenges in ever-changing media environments, making them valuable lenses through which to compare diverse news coverage (Boykoff & Boykoff, 2004, 2007; Fahy, 2017). All these theories help

researchers understand what news sources believe is newsworthy and how their reporting may influence the controversies they cover.

The framing of environmental discourse, specifically, is a highly relevant topic to the research described here. Kojola's (2017) critical discourse analysis of news media coverage of the controversial Keystone XL pipeline argues that the dominant binary journalistic framing of economy against the environment renders alternative solutions invisible and bolsters the stalemate of the status quo. Other common journalistic frames are likely to be important factors, such as the tendency of political discourse to liken environmental politics to a strategic game or serious contest (Rinke et al., 2013) and the conflicting, discursive strategies of competing special interests (Shum, 2015). Furthermore, other frameworks have identified specific ways journalism has failed to properly contextualize the controversial claims of mining companies mired in wicked problems (Barkemeyer et al., 2015; Paliewicz, 2018).

One challenge facing journalism is its increasing reliance on non-impartial sources. While the public continues to get its scientific knowledge through news media, science journalists are increasingly reliant on government agencies and special interests to inform their reporting, which has been repeatedly attributed to a decline in the quality of coverage, especially of scientific debates (Fahy & Nisbet, 2011; Lück et al., 2018; Schäfer, 2017; Sumner et al. 2014; Williams 2015). Environmental communication scholars have shown how news media are affected by the changing political landscapes of the regions they cover, including Hedding (2017), whose content analysis of news coverage on fracking in the United States demonstrates how the sources depended upon by local journalists influence their framing of scientific controversies. As the media landscape changes, communities will be challenged to adapt to

new forms of communication and empower citizen-led journalism — or contend with increasingly influential institutional authorities (Simons et al., 2017).

Science communication scholars have long disagreed about how their research can provide effective management advice to decision-makers regarding wicked problems — whether their role is to resolve, prevent, or merely elucidate such controversies (Engelhardt & Caplan, 1986). In this pursuit, they have defined common tensions between stakeholders, such as regulation against freedom of choice, science against traditional values, political priorities against environmental values, benefits against risks, and efficiency against equity (Nelkin, 1979; 1984; 1991). They have identified aspects of controversies that influence stakeholders' arguments, such as confirmation bias, the reinforcement of assumptions, the burden of proof, group dynamics, vested interests, and individual values (Martin, 2014), and they have discussed different ways wicked problems can become resolved, including through force, consensus, negotiation, loss of interest, and sound argument (Engelhardt & Caplan, 1986). Though this thesis does not conduct complete or exclusive assessments from each of these perspectives, they will all be used to co-evaluate the quality of news media coverage of Minnesota's copper-nickel mining controversy.

Environmental Justice & Corporate Social Responsibility (Critical Theory)

Critical theory adopts a historical realism, questioning hegemonic influences in social situations in open support of certain moral values (Guba & Lincoln, 2017). Positivist approaches to wicked problems of natural resource management — even those that emphasize the role of social forces — generally limit their critical discussion of hegemonic power structures as irrelevant or difficult to demonstrate with empirical evidence. For critical theorists, if decisions

regarding environmental controversies are to be considered *just*, the benefits and costs associated with them ought to be distributed equitably amongst all involved. Therefore, environmental justice (EJ) studies, which critically investigates the use of environmental leverage to take advantage of stakeholders involved in controversy, is one interdisciplinary framework with which to measure the distributional, procedural, and restorative justice outcomes of policy decisions (Burch & Harry, 2004; Holifield, 2009; Rodríguez-Labajos & Özkaynak, 2017; Heffron & McCauley, 2018; McCauley & Heffron, 2018).

As an extension of the EJ perspective, “just transition” scholarship highlights policy transitions, such as the divestment of fossil fuels in favor of green energy policies, and provides a critical perspective of environmental movements that may nevertheless lead to injustices for underprivileged stakeholders (Healy & Barry, 2017). The creation (or loss) of local jobs, for instance — whether from the construction of oils rigs or wind turbines — would be one important factor to measure in an environmental controversy, but it is equally important to consider the quality, longevity, and distribution of such jobs, too (Miller et al., 2015). In the case of Minnesota’s potential transition to establishing a new hard rock mining industry, EJ scholars question who will benefit from new mining jobs and whether the risks of pollution and boom-and-bust economics could exacerbate existing trends of injustice against rural, working-class, and indigenous populations (Kojola & Pellow, 2021).

Sometimes, proponents of EJ are seen as allies to other environmental movements, but it would be a mistake to believe they are always in agreement. Perhaps unexpectedly, EJ advocates have been shown to be in strong rhetorical opposition to many environmental advocacy groups that prioritize the preservation of so-called “pristine” wilderness areas over

the sovereign rights of local and indigenous communities seeking the autonomy to co-manage the natural resources of their homelands (Bullard & Alston, 1990; Di Chiro, 1996; Taylor, 2002). For example, Walker's (2017) critical discourse analysis reviews the magazine of the national conservation group Sierra Club and argues that its public discourse strategies over-emphasize preservation and work against the narratives and interests of EJ advocates for the purpose of commodifying wilderness resources for a socioeconomic class of elites to whom the magazine advertises expensive, socially-exclusive products, services, and worldviews. Indeed, federal data show that the average age, wealth, and education level of visitors to the Boundary Waters Canoe Area Wilderness have increased dramatically in recent decades, while the majority of visitors continue to be white and male — trends that have caused researchers to highlight the need to make these resources more inclusive to adapt to the emerging values of new generations (Cole, 2016; Dvorak et al., 2012; Eagleston & Marion, 2017; Watson, 2013). Historical studies (Backes, 1991) and discursive analyses (Holifield, 2009; Kojola, 2018) regarding Minnesota's legacy of environmental controversy agree that the efforts of local indigenous groups are often undercut by some environmental activists, who romanticize native lands to justify their preservation for outdoor recreation, rather than collaborate with indigenous stakeholders to collectively organize against the interests of extractive industries they both often oppose.

Another critical theory relevant to the controversy studied here is called corporate social responsibility (CSR) — a field that has identified ways in which mining companies navigate and continually redefine public discourse to suit their interests and achieve a “social license to mine” in affected communities (Curran, 2017; Jenkins & Yakovleva, 2006).

Environmental policy and communication researchers have argued that the dominant standards of CSR in mining industries rely too much on self-reported data and non-binding promises from corporations (Barkemeyer et al., 2015; Leong et al., 2014). Spending hundreds of billions of dollars to promote the concept of “climate smart mining,” powerful international mining companies seek to control the narrative and deflect criticism regarding ongoing violations of environmental justice (Phadke, 2019).

Citing these examples from the academic literature is not meant as targeted criticism of mining companies, environmentalists, or justice advocates. Rather, it is intended to highlight this study’s move away from an overly reductive simplification of social processes in exchange for providing a diverse, maybe messy sense of the many interests that associate in relation to mining projects. These critical theories will be used in the evaluation of Minnesota’s hard rock mining controversy performed by this thesis.

Hermeneutic News Analysis (Constructivism)

Constructivism considers reality to be relative and subjectively defined by every individual experiencing it (Guba & Lincoln, 2017). Rather than attempt to prove their objectivity, constructivist approaches emphasize the rigor and face-value trustworthiness of their study designs to represent reality as perceived by the subjects of their studies. In support of this goal, hermeneutics reflects a constructivist ontology and antifoundationalist epistemology; it is a perspective that embraces the inescapable role of researchers as participants in the emergent discourse they study and prioritizes practical evaluation of texts over strict adherence to methodological assumptions (Patterson et al., 1998). Hermeneutics is

therefore called an interpretive, rather than predictive, approach to research that nonetheless reflects the empirical and analytic virtues of science (Patterson & Williams, 2002).

Beginning from an established “forestructure of understanding,” a hermeneutic study progresses through a reiterative analytical procedure called “the hermeneutic circle,” in which interpretations of sampled texts are always open for critique and modification (Patterson & Williams, 2002). Similar to grounded theory, which was established by Glaser & Strauss (1967) as an inductive alternative to the methodological restrictiveness of the deductive, *a priori* approaches of positivism, hermeneutics allows for the emergence of new data and interpretation strategies throughout the research process. Constant comparison analysis is another related method that similarly reviews and redefines data interpretations repeatedly, categorizing “data bits” into sub-categories on a reiterative, constant-recoding basis (Dye et al., 2000; Glaser & Strauss, 1967; Walker, 2017).

Hermeneutic scholars provide a clear, if flexible, set of procedures to follow while analyzing texts and actor viewpoints (Patterson & Williams, 2002). As researchers code sampled texts, they are encouraged to empathize with each actor in the network and view the controversy from many idiographic (individual) perspectives. Devices such as divination (guessing actors’ intentions) and reenactment (considering their feelings) can support this exercise. Then, hermeneutic analysis turns its focus to the nomothetic (cross-case) level — the space in which actors interact with one another. Whereas quantitative or positivist content analyses are limited to scanning texts for pre-coded themes and classifying them accordingly, hermeneutics allows for holistic characterization of the inter-relationships between themes for their meaningful organization and interpretation (Patterson & Williams, 2002). The entire body

of sampled text is read until it is thoroughly understood by the researcher. Notes are compared to develop an initial global understanding of the project, which is used to read through each part again and again to enrich the global perspective. This is the “hermeneutic circle,” the cyclical process of evaluation and modification of the researcher’s impression of texts, or in this case, the news coverage of Minnesota’s mining controversy. Thus, while natural resource management research usually depends on positivist approaches, hermeneutics provides a bridge from the realm of “hard science” to the more interpretive aspects of qualitative, post-humanist perspectives (Patterson & Williams, 2002).

Public Deliberation (Participatory Paradigm)

The participatory paradigm is, on one hand, inherently critical, arguing for improved accessibility to political participation and public engagement in decision-making processes (Guba & Lincoln, 2017). On the other hand, deliberation studies represent an expressly inclusive, apolitical practice that could help bridge the perspectives of all the other scientific paradigms (Lockie, 2007). Public deliberation can be implemented as outreach activities designed to inform societal processes with thoughtful conversations between small groups of stakeholders and decision-makers (Bächtiger et al., 2018; Parkinson & Mansbridge, 2012). Deliberation of this kind has been shown to inform voters and help people express their opinions and synthesize them with others’ to facilitate the resolution of wicked problems (Gastil et al., 2015). The goal of deliberation is not to diminish individual differences nor easily compromise the pluralistic reality of most controversies. Rather, when actors understand their adversaries’ roles in their network more clearly, they may come to respect or understand them better, which, even if agreement is never achieved, could aid conflict resolution.

Scholars from diverse fields have proposed strategies to improve the deliberative aspects of wicked problems, including normative-analytical frameworks to address deliberation at multiple levels of governance (Klinke, 2012). While specific recommendations vary, most support values of clarity, inclusiveness, transparency, and practicality (Dietz, 2013) aimed to promote discussion and recognition of the uncertainties associated with the risks of controversial decisions like mining approvals (Vela-Almeida et al., 2015). Even journalism studies scholars have shown that journalists believe public deliberation could help local actors resolve controversies (Besley & Roberts, 2010). Nevertheless, journalists have downplayed their roles of participation in public debates by subscribing to a “professional realism” that encourages them to remain objective and disconnected from the arguments they cover (Klocke & McDevitt, 2013).

Minnesota’s copper-nickel mining controversy is ripe for evaluation with these deliberative perspectives because of the importance of government-mandated public meetings and comment periods designed to gather feedback on tentative decisions. Though this thesis does not attempt to perform an exhaustive evaluation in terms of deliberation, the theories cited above will nevertheless assist in a holistic assessment of the deliberative practices that play a role in the wicked problem studied here.

Actor-Network Theory (Post-humanism)

An emerging research paradigm not yet recognized on Guba & Lincoln’s (2005) spectrum of perspectives is “post-humanism,” which avoids some so-called “neo-positivist” approaches that would subject qualitative study designs to positivist criteria that may not be appropriate or necessary (Johnson, 2015; Sun et al., 2017). While positivist scientific

philosophies are designed to filter out researchers' bias and ensure their studies are objective, replicable, and generalizable, Johnson (2015) argues that deductive, hypothesis-centric approaches are not fully equipped to address the multi-subjective processes involved in complex social controversies. Thus, there may be a need to empower a more pluralistic, permissive, and reflexive academic paradigm that researchers can use to reconcile the aims of positivist and humanist perspectives (Sun et al., 2017).

Actor-network theory (ANT) scholars of the post-humanism paradigm see their role as descriptive — not explanatory — a perspective that embraces uncertainty and emphasizes actors' observed actions over researchers' *a priori* conceptions (Latour, 2007). Whereas many positivist qualitative frameworks insist that researchers can and must account for academic bias — using random sampling, inter-coder reliability, *a priori* hypotheses, and other techniques — ANT scholars believe such efforts can be inappropriate, depending on the scholarly task at hand (Latour 2007). Whereas some research paradigms involve data interpretations that arguably explain away the complexity and uncertainty of social situations, ANT refuses the easy trip to the conclusion finish line, forgoing a fast ride on the freeway for a pair of bare feet, to avoid “changing vehicles... shifting gears and flying into stratospheric considerations instead of just walking on foot” (Latour, 2007, p. 178). This painstaking pursuit of localizing global forces bridges the divide between micro and macro understandings of a system (Latour et al., 2012). In other words, without the burden of having to decide which theoretical model might best interpret the nature of a given network — and risk making the wrong assumptions — an ANT scholar instead needs patience and creativity to empirically trace associations between actors in a network. Like the tortoise and the hare, the ANT scholar and the more positivist social

scientist use different means to reach the end — one slowly *describes* findings, while the other may jump to *explain* conclusions.

Like all empirical research, ANT studies depend on data — evidence collected with methods like qualitative interviews, quantitative content analyses, or creative digital methods (Latour, 2007). But ANT is unique in what could be called its over-dependence on data; never is there an excuse to mute the actions or statements of any actor in the name of theoretical wit. To use *a priori* concepts to assume the nature of the network and justify a quick jump over uncertainties instead of a slow crawl through them is not a suitable substitute (Venturini et al., 2015). By listening to actors directly, ANT can often provide a more robust description than other frameworks that might assume to understand a controversy better than those who are living in it. To explain what some model thinks the actors *really mean* is not the way of ANT; to describe what they *actually do* is.

An additional difference between ANT and other traditional network theories is how they define and qualify actors. ANT again is unique for allowing the inclusion of abstract non-human forces as actors (sometimes called actants) to be treated virtually the same as human or institutional actors (Latour, 2007). ANT's belief in the agentic, mediating quality of actors means that each one must be taken seriously, listened to intently, and treated with respect. If actors identify an abstract entity that they claim influences their behavior — such as “nature” or “God,” for example — the ANT scholar is bound to consider them as just as potentially significant as any other (Latour, 2007). In the case of this study, if actors speak of such things as the Boundary Waters or the copper-nickel deposits buried in the ground as if they have agency, they may need to be considered actors.

ANT Translation

To comprehend the dynamics of controversies in terms of ANT, scholars may use a narrative metaphor known as *translation* — the active, four-phase process through which a network is said to be co-created and maintained by the mutual interactions of actors involved (Latour, 1987). First, translation begins with a moment of *problematization* that requires researchers to lay the ground rules of their proposed association tracing by identifying relevant actors and describing the perspectives of one or more so-called focal actors. Without *a priori* commitments, ANT scholars can add or remove actors at any point in the investigation; associations can be traced and reanalyzed as new themes and improved problematizations emerge.

The second moment of translation, *interessement*, begins to describe the relationships between actors in the network. Derived from the French language, this word signals the concept of “being in between” (inter-esse) two or more things, highlighting the efforts of actors to position themselves so that their desired vision of the actor-network can be realized through trials of strength that may establish so-called obligatory points of passage through which the actions of other actors are channeled (Callon, 1984). Thus, *interessement* is achieved as focal actors are shown to manipulate the dynamics of the network and construct associations intended to serve their interests (Ahmed, 2013).

Enrollment is the third moment of translation in which actors, through a series of “mutual negotiations,” involve themselves in the network, either submitting to or rejecting the *interessement* efforts of others (Callon, 1984). Here the ANT scholar’s test is to describe the tensions of forces at the enrollment threshold, determining through the empirical tracing of

associations and arguments how each actor responds to the changing dynamics of the actor-network. To secure enrollment, a focal actor might attempt to establish new relationships or change unfavorable ones, while persuading or manipulating other actors into accepting roles that support their goals.

Finally, *mobilization* is the last moment of translation, as it represents the idealized success of focal actors' visions. If the fully enrolled actor-network is reinforced and focal actors can set up safeguards to maintain it, mobilization is said to have occurred (Lourenço & Tomaél, 2018). This is when the agendas of focal actors may attain more widespread acceptance and controversies could slowly become resolved — but neither of these outcomes are guaranteed (Ahmed, 2013). In fact, mobilization is usually a temporary, if not entirely impossible, state to achieve, because controversial actor-networks may never experience enough stability, or they could evolve into new wicked problems altogether (Huxford, 2010).

Callon's (1984) seminal ANT study exemplifies the translation process by describing a scientific controversy regarding the scallop fishing industry of France. First, the challenge of focal actors is problematized: a group of scientists attempt to establish a new scallop farming practice to preserve wild populations and strengthen the fishing economy. Second, the *interessement* of actors is described: the associations between fishermen, scallop buyers, and the scallops themselves are inter-positioned with inherent conflicts. Third, focal actors attempt to enroll others in their vision of the actor-network: the scientists negotiate with the fishermen to support the experiment, while scallops negotiate with predators and ocean currents threatening their role in it. Fourth, the mobilization of actors' competing visions is assessed: the

fishermen lost patience with the experiment, as the scallops failed to grow in the scientists' experimental farm and the project was abandoned.

ANT studies like this thesis are meant to provide retrodictive descriptions of controversial chronologies, not predictive explanations of social dynamics (Latour, 2007). Thus, in the Conclusions chapter of this paper, I will revisit the concept of ANT translation to provide one more lens through which to review the news coverage of Minnesota's mining controversy.

Controversy Cartography (Post-humanism)

While the previous section explains how ANT scholars understand the interconnected roles of actors in a network, this section describes a more applied method to track and communicate actor associations. Controversy cartography (CC) is a post-humanist approach guided by an ANT sensibility intended to "map" the dynamics of wicked problems with experimental study designs (Marres, 2015; Venturini, 2010a; 2010b). Indeed, in CC:

"There are no definitions to learn; no premises to honor; no hypothesis to demonstrate; no procedure to follow; no correlations to establish... You're not imposing any specific philosophy or procedures, (but using) every observation tool at hand, as well as mixing them without restraint" (Venturini 2010a, p. 259).

There are, however, seven analytic principles that underpin the rigor of this strategy; verbatim, they are as follows (Venturini 2010b, p. 800):

- o You shall listen to actors' voices more than to your own presumptions;
- o You shall observe from as many viewpoints as possible;
- o You shall not restrict your observation to any single theory or methodology;
- o You shall adjust your descriptions and observations recursively;
- o You shall simplify complexity respectfully;
- o You shall attribute to each actor a visibility proportional to its weight;
- o You shall provide descriptions that are adapted, redundant and flexible.

What might sound like a non-scientific approach advising scholars to "*just observe*" (Venturini 2010a, emphasis added) is actually a rigorous challenge to researchers to remain

open-minded about the fallibility of their preconceptions and to incorporate as many relevant scientific perspectives as needed or possible. In fact, scholars from a variety of fields have argued that ANT and CC could serve to inform the public and empower them to act on controversial issues for the benefit of science literacy (Pierce 2015), public discourse (Besel, 2011), and controversy resolution (Whatmore, 2009).

ANT cartographers recognize that all actions and statements made within the actor-network exist in relation to everything else, inherently involved in dialog and debate. With the observational lenses of CC, researchers document these relations and disputes in a cartographic endeavor to “map” developing controversies. The small gray shapes and text box icons in Figure 2.3 and Figure 2.4 represent statements made by and orientations assumed between actors in the network. These small units of analysis will serve as crucial nodes between which all the associations of the network may be traced.

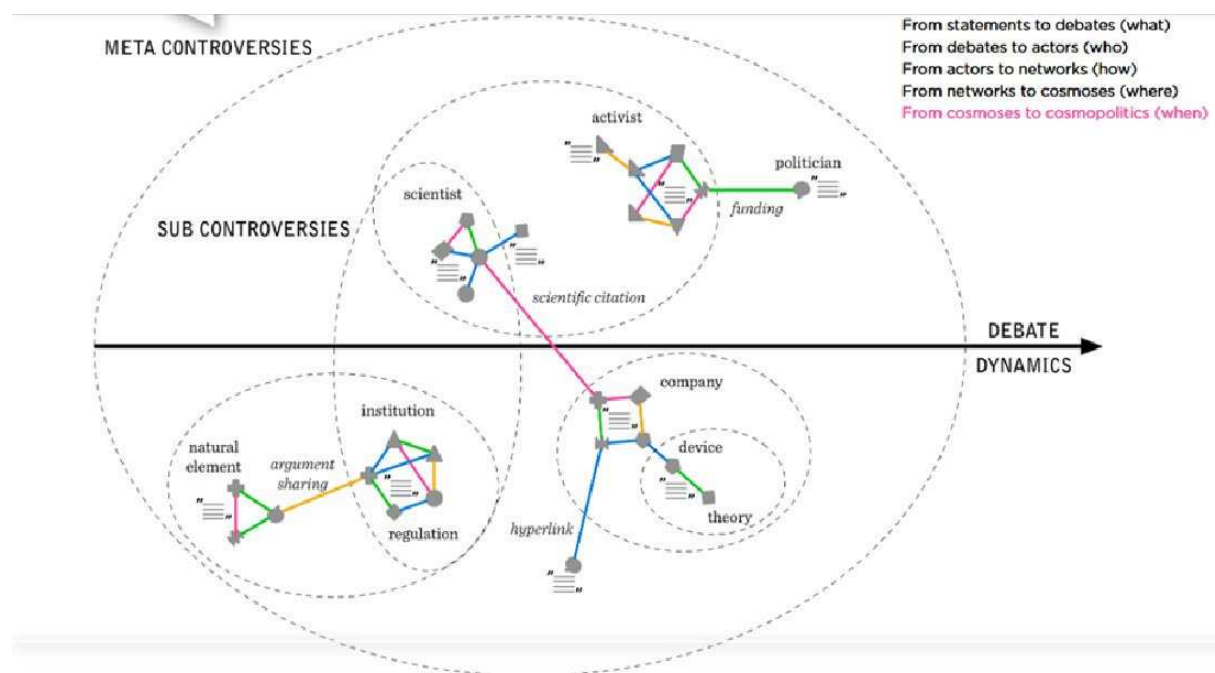


Figure 2.3. Actor-network diagrams designed from a template such as this help visualize the dynamics of social controversies (Venturini, 2013).

WHO? from debates to actors (who)

HOW: From actors to networks

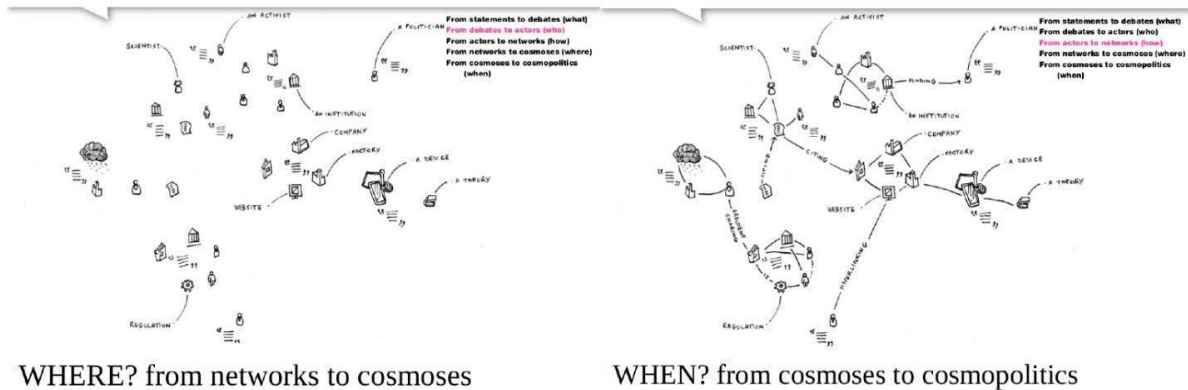


Figure 2.4. The lenses of controversy cartography describe the cartographic process step-by-step (Venturini, 2013).

Next, CC highlights the connections between statements and speakers, actions and actors. It tasks ANT cartographers with contextualizing controversial arguments amid the variety of values and beliefs apparent in the actor-network. The labels adjacent to debate points in Figure 2.3 represent names of actors in the network, the lines connecting nodes represent the associations between them, and the black line through the middle of the diagram in Figure 2.3 and the stack of snapshots illustrated in Figure 2.4 represent the passage of time. Understanding how actors identify themselves in relation to larger debates is critical for researchers' interpretations. Drawing these distinctions is intended to facilitate the interpretive description process.

ANT scholars like Payne (2017) and Potts (2014) have developed standardized methods of visualizing actor-network diagrams, or maps, but their creation is not required to communicate the results of an ANT-CC study. Such maps can be strictly textual, as is this thesis, with each sub-section of the Findings and Discussion chapters standing in for the individual pages of a cartographic “atlas,” which, only when they are viewed (or read) altogether, provide a holistic understanding of the subject territory. Nevertheless, ANT scholars have defined the CC atlas as an interactive web-based resource empowering users to follow any empirical traces they wish as they browse and develop their own opinions about the controversy (Beck & Kropp, 2011).

However their findings are communicated, ANT cartographers seek to describe their controversies of study without acting on prophetic scientific or critical urges to explain things they cannot prove or do not fully understand. The difference between positivist objectivity and the ANT cartographers’ so-called “second-degree objectivity” is the assumption of ANT that all actors define their own truths (Venturini, 2010). This, in tandem with CC’s methodological collaborative nature, may be an excellent vessel through which to unite post-humanist approaches, such as ANT, with the scholarly paradigms described previously.

Research Question & Objectives

Having laid out the preceding foundational ontologies with which scholars have addressed environmental controversies, this chapter ends by describing a cross-paradigmatic alliance of theoretical and methodological approaches utilized in the study design of this thesis. While positivist-leaning social scientists and ontologically likeminded journalists generally believe that good research and communication is capable of informing management decisions,

verifiable hypotheses and universally generalizable conclusions may not have their expected predictive power regarding the multi-faceted wicked problems of environmental controversy (Hiedanpää & Bromley, 2016). Natural resource management scholars have therefore pointed out how traditionally positivist paradigms and managerial biases may struggle to account for everything on their own, encouraging the use of more mixed methods in study designs (Glenna, 2010; Lewenstein, 2017; Sovacool et al., 2020; Star & Griesemer, 1989). Others have made similar arguments regarding mining controversies (Kinchy et al., 2018; Reinecke & Ansari, 2016), as well as wicked problems of environmental management in Minnesota specifically (Holifield, 2009).

Some sociologists and environmental managers have even cited Aldo Leopold, a founder of the field of natural resource management, to justify their arguments that purely positivist approaches to wicked problems could benefit from the assistance of more constructivist perspectives, such as ANT and hermeneutics (Hiedanpää & Bromley, 2016; Sun et al., 2017). In his famous passage from the *Sand County Almanac* titled “Thinking Like a Mountain,” Leopold (1966, pp. 138–139) describes his killing of a wolf as part of a government land management plan and arguably invokes a post-humanist perspective by admitting, “I thought that because fewer wolves meant more deer, that no wolves would mean hunters’ paradise. But... I sensed that neither the wolf nor the mountain agreed with such a view.” This sentiment, which students of wildlife management are taught to interpret metaphorically, could, in fact, be seen as an ontological imperative (Sun et al., 2017). In other words, Leopold knew his positivist assumptions regarding wolf management were ill-equipped to account for the network of

forces at play in this case, and his seminal work opened the door for other perspectives to help positivism elucidate such wicked problems today (Hiedanpää & Bromley, 2016).

Guided by Guba & Lincoln's (2017) spectrum of research paradigms, this literature review has described several scholarly approaches that will each lend something to the study design outlined in the following Methods chapter. From the positivist paradigm, I first consider the planning hexagon (Benson, 2014), the North American Model of Wildlife Conservation (Organ et al., 2012), and the inclusive stakeholder engagement recommendations of the human dimensions of natural resource management researchers (Endl, 2017; Lund, 2012). With post-positivism, I acknowledge scientific uncertainty (Gross, 2007) and consider the impacts of news media on Minnesota's mining controversy (Simons et al., 2017). With critical theory, I adopt frames of environmental justice (Heffron & McCauley, 2018) and corporate social responsibility (Curran, 2017) with which to view the historical and distributional effects of controversial relations between actors. From constructivism, I utilize a hermeneutic methodology of news analysis (Patterson & Williams, 2002). With the participatory paradigm, I invoke principles of public deliberation to assess the quality of public engagement (Gastil et al., 2015). Finally, with the post-humanism perspective, I synthesize all the preceding paradigms in a discursive cartographic endeavor, analyzing data in terms of ANT and describing the controversial actor-network with CC. Together, these academic perspectives feature many overlaps that make them a natural and effective set of principles to employ together (Burch & Harry, 2004; Dousa, 2012; Krieger & Belliger, 2014; Lockie, 2007).

To be clear, this thesis makes no argument that post-humanist approaches are better than any others, but its methods may be more suited to address the specific research objectives

held by this study. Nevertheless, post-humanist scholars agree that ANT analyses can indeed be useful starting points for other theoretical investigations that do depend on *a priori* frameworks, and such researchers would likely be better informed for considering ANT's holistic perspective to complement their study designs, adding to the repertoire of strategies employed by natural resource managers (Holifield, 2009; Lourenço & Tomaél, 2018). Thus, this project intends to ally the similar ontological and theoretical disciplines of ANT, hermeneutics, and news media analysis to provide a unique but proven recipe of theories and methods able to assess the controversy at hand (Krieger & Belliger, 2014).

Ultimately, this thesis aims to map the statements and actions of actors without attempting to conclude or resolve their arguments for them, empowering readers and those involved to interpret and utilize the descriptions provided however they wish (Huxford, 2010; Marres, 2015; Stone, 2018). It is not an exhibition of positivist research nor a subjective assessment lacking an empirical foundation. Instead, the purpose of this qualitative research is to explore and describe the wicked problem of Minnesota's hard rock mining controversy, as portrayed in sampled news media, and lay the foundations for its application in further academic research, journalistic development, and public deliberation activities that could help the people of Minnesota navigate their centuries-long struggles with natural resource management. Its research question and objectives are as follows:

Question: Who are the actors involved in Minnesota's copper-nickel mining controversy, and how are their arguments portrayed by news media?

Objective #1: Conduct a hermeneutic analysis of relevant newspaper coverage.

Objective #2: Trace the associations and compare the arguments of actors involved.

Objective #3: Produce a textual, encyclopedic reference resource to inform ongoing news coverage and stakeholder decision-making.

Chapter 3: Methods

Reflecting the scientific paradigms described in the previous chapter, the methods employed by this study are well-grounded in research and informed by peer-reviewed publications, some of which include similar qualitative news media studies on Minnesota's copper-nickel mining controversy (Kojola, 2018). To achieve the research objectives (RO) of this study, I first conducted the hermeneutic news analysis (RO #1), selecting news sources to study, collecting articles from each source, and embarking upon the hermeneutic circle by reiteratively coding sampled articles. Then, to study the actor-network as revealed by the hermeneutic data (RO #2), I identified actors, traced empirical associations, communicated the chronology of controversial events, and compared the arguments of all involved. Finally, to create a reference resource intended to improve news coverage and stakeholder decision-making (RO #3), I used the observational lenses of controversy cartography to produce a discursive description of the controversy, as portrayed by sampled news coverage.

It is important to understand that hermeneutics and ANT-CC acknowledge the inescapable role of researchers' interpretive biases (Latour, 2007; Patterson & Williams, 2002). Therefore, echoing Kojola's (2018) decision to describe his personal relationship with the Minnesota mining controversy he studied, I will similarly disclose my own now, to help elucidate my "positionality" on the subject to support the analytic objectivity of the study (Kelly, 2013). Having grown up in the rural, conservative, Christian culture of the Red River Valley of North Dakota (a 5-hour drive from both the Minnesota Iron Range and the Twin Cities), I am a white male with progressive but bipartisan political views, an undergraduate

education in wildlife biology, and a passion for both journalism and science. For two summers, I lived at a wilderness center in Ely, MN near the entry to the Boundary Waters Canoe Area Wilderness, where I experienced first-hand the highly controversial atmosphere apparent throughout the divided community regarding the region's proposed copper-nickel mines. Though I personally support many environmental causes, I am sincerely undecided in my opinions regarding the wicked problem at the heart of this thesis. If any of my inherent biases have overly influenced my interpretations, they are hopefully my values of rigorous fact-checking and investigative inquiry — two traits prized by ANT scholars to aid in the tracing of empirical associations in sampled text.

As discussed above, ANT scholars can choose to inform their studies based on any combination of qualitative and quantitative methods, so long as they attune them to their study subject appropriately. In this case, the hermeneutic news analysis provides the corpus of traces to map. Each article provides a written representation of actors' associations to be analyzed for patterns. These hermeneutic data are the ANTian breadcrumbs to be gathered, traced, and appreciated in the production of the discursive cartography of this thesis.

Hermeneutic News Analysis

The distinct hermeneutic research process behind this study required a few key steps, including the selection of texts to analyze and the reiterative analytical reading process (Patterson & Williams, 2002). Following procedures utilized by communication scholars in similar environmental news media studies, I carefully decided which news sources to select and how to sample their published articles for analysis (Hedding, 2017). Kojola's (2018) dissertation focuses on Minnesota's copper-nickel mining controversy specifically, and its methods of

selection of local news sources, sampling of articles, and differentiation between news and editorial reporting provide a significant foundation for the study design of this thesis; his analysis is concordant with my own regarding the political stances and local reputations of the Minnesota newspapers we both included in our analyses.

First, I selected four Minnesota-based news outlets with unique editorial perspectives and large bodies of work on the state's hard rock mining controversy. These include the *Star Tribune* (the Twin Cities-based, billionaire-owned, state paper of record), the *MinnPost* (a Twin Cities-based nonprofit news outlet), and two small, politically opposed newspapers in the Iron Range called the *Timberjay* (liberal) and the *Ely Echo* (conservative). Additionally, I consulted a database of national newspaper coverage called US Major Dailies from ProQuest, available through CSU Libraries. This collection included comprehensive coverage from the five largest newspapers in the United States — the *New York Times*, the *Washington Post*, the *Wall Street Journal*, the *Los Angeles Times*, and the *Chicago Tribune*.

Searching through the entire publicly available online archives of each source, I sampled as many articles as possible that included any mention of PolyMet, Twin Metals, or variations of the phrases “copper-nickel,” “nonferrous,” and “hard rock mining.” While this sampling procedure includes the complete coverage of articles published between January 2016 and January 2020, the archives of articles published between 2007-2015 may not be quite as comprehensive. Furthermore, due to time constraints in the research process, only the *Star Tribune* was sampled for articles published after January 2020, and no articles from 2021 are included from any source. One article from the *Columbia Journalism Review* is also included in the study to provide further background information. A very small number of articles across the

local outlets were locked behind paywalls, and I was only able to read their headlines and opening paragraphs.

In total, 680 articles are included in this analysis. While most of them are considered hard news stories, many are editorial columns written by the papers' editors and other stakeholders involved in the controversy. Using a private window of the Firefox browser, I accessed, copied, organized, and annotated every sampled article with the Scrivener software and documented their citation information with the free Zotero program. In the Findings and Discussion chapters, sampled news articles are cited in an atypical format that does not conform with the standards of APA style, to which the rest of this thesis does.

Whereas APA guidelines would use in-text citations that include the last name of the article's writer and the year it was published, I utilize a custom format that deliberately draws attention to the publication, rather than the reporter, and the exact date of publication, rather than just its year. For example, an article published by the *Star Tribune* on January 15, 2015, would feature in this paper an in-text citation like this: (ST, 01/15/2015), with "ST" standing in as an abbreviated publication name. While processing the following chapters, readers are encouraged to take note of which publications are being referenced and the timing of their published reports. Doing so will provide additional information about the practices of each source. The complete list of publication abbreviations — and the number of articles sampled from each source — is as follows:

Minnesota Sources:

- EE: *Ely Echo*, 128 articles
- MP: *MinnPost*, 123 articles
- ST: *Star Tribune*, 243 articles
- TJ: *Timberjay*, 153 articles

National Sources:

- CT: *Chicago Tribune*, 0 articles
- CJR: *Columbia Journalism Review*, 1 article
- LAT: *Los Angeles Times*, 2 articles
- NYT: *New York Times*, 10 articles
- WSJ: *Wall Street Journal*, 14 articles
- WP: *Washington Post*, 7 articles

Having sampled and processed all the articles, I utilized Walker's (2017) methodology of constant comparison and the analytical methods of Kojola's (2019b) discourse analysis case study, by adopting a fluid emergent coding process with some special attention paid to concepts such as economic impacts, environmental risks, human health, gender, race, and social identity. First, I read every sampled article in full, following their chronological publication across outlets, taking extensive notes about the main themes, actors, and arguments apparent in the coverage. Then I read them all again and took even more notes, this time processing each outlet's chronological archive of sampled coverage one after the other. Following the reiterative process of hermeneutics, I constantly revised the themes, or "meaning units," with which I was building my understanding of the controversy, through each cycle of the "hermeneutic circle" alternatively complexifying and simplifying the study's corpus of data (Patterson & Williams, 2002). In total, I read every article in full at least three times and spent countless hours synthesizing their associated notes and empirically tracing the connections between them.

ANT-CC Association/Argument Analysis

With the hermeneutic process complete, I began an actor-network theory (ANT) analysis using concepts of controversy cartography (CC) as a guiding framework to construct a discursive description of the wicked problem. Many ANT studies provide instructions on how to interpret

controversies in terms of translation — the problematization, interessement, enrollment, and mobilization of an actor-network (Ahmed, 2013; Huxford, 2010; Lourenço & Tomaél, 2018; Rodger et al., 2009; Star & Gresemer, 1989; Wrye, 2012).

First, I followed instructions on how to identify actors and designate focal actors, whose contrasting visions of the actor-network I would go on to describe and compare (Ahmed, 2013; Huxford, 2010; Lourenço & Tomaél, 2018; Star and Gresemer, 1989). Kelly's (2013) ANT study concerning land use near a hiking trail in Arizona, for example, describes its actor-network from the focal perspective of the trail itself. Similarly, Pierce's (2015) ANT study regarding the management of salmon populations chooses for its focal actor the very salmon at the center of the controversy. Additionally, ANT studies of a mining town in Russia (Didyk et al., 2018) and a large dam in Bulgaria (Mitev, 2015) provide further justification for the distinctions between actors' groups made in this study. This actor selection process furthermore echoes Kojola's (2018) dissertation on the Minnesota mining controversy by identifying similar actor groups and their spokespeople. These examples inform my decision to consider the proposed copper-nickel mines themselves as the focal actors of the actor-network at hand.

Next, I followed ANT instructions on how to trace associations between actors and highlight emergent themes in analyzed texts (Ahmed, 2013; Dousa, 2012; Spoel, 2018; Stone, 2018). I identified "floating statements" apparent throughout sampled news articles (Lepawsky et al., 2019) and traced their empirical associations using the observational lenses of CC to interpret the hermeneutic news analysis data and understand the relationships between statements, actors, and networks throughout the controversy (Venturini et al., 2015).

Finally, I followed ANT instructions to compare actors' arguments and document their oppositional patterns of language use, characterizing each sub-argument in this paper's Discussion chapter (Leong et al., 2014; Poole, 2018; Walker, 2017). These exemplar studies explain how to narrate actor-networks and classify actors' narratives into distinct sections for description and analysis (Barkemeyer et al., 2015; Bounergru et al., 2017; Reinecke & Ansari, 2016; Rodger et al., 2009). Differentiating between arguments over matters of fact and those of ideology helps map the argumentation patterns apparent in sampled news coverage (Huttunen & Hildén, 2014).

Like most ANT studies, this thesis does not aim to provide explanations of its own but rather describe the many conflicting perspectives of actors and their increasingly polarized associations, tracking the partisanship and influence of controversial arguments in public discourse (Burgess et al., 2000; Whatmore, 2009). By the end of this empirical, interpretive process, I had crafted a textual description of the controversy and cataloged three main components of it: the actors involved, the general associations of polarization and politicization between them, and the specific arguments they develop throughout sampled news coverage. The following Findings and Discussion chapters, therefore, serve to summarize the chronology of the controversy thus far and illuminate the entanglements of conflicting claims and positions staked by actors throughout.

Chapter 4: Findings

Instead of obscuring what can be an overwhelmingly complicated situation into a series of highly reduced or over-quantified interpretations, the Findings and Discussion chapters are, by design, extensive and potentially exhausting to read. But like good tour guides of a bustling city, they promise a comprehensive trip to every landmark you might want to see, even if it requires doubling back, waiting in traffic, or taking detours around obstacles in the road. In other words, readers should not be too concerned with the details of each example included in the analysis, but, rather, sit back and experience the ride. Just as I, the researcher, repeatedly traveled the hermeneutic circle through the sampled coverage, so too can readers experience the actor-network in a similarly uncensored, reiterative way, letting each story wash over them naturally, before moving on to the next. By the end, readers will have seen everything for themselves from as many perspectives as possible and will be free to establish their own opinions about it.

In the same way a cartographic atlas contains many separate visual representations of one territory filtered to communicate different aspects of it, this paper consists of dozens of separate textual descriptions that, when considered in combination with the others, may contribute to a holistic understanding of the situation. It is more encyclopedic than narrative. First, this chapter lists and defines the types of actor groups that participate in the controversy. Then it describes the associations of polarization and politicization between them. Finally, it narrates the approval processes of both PolyMet and Twin Metals, recounting journalists' coverage of what they consider the newsworthy events thus far. Each section begins with a

brief summary and explanation of its significance to help readers contextualize descriptions along the way.

Actors

This section lists the human and institutional actors involved in the controversy — the ones participating in public discourse — and classifies them into three groups: 1) the sampled news sources, 2) the stakeholders engaged in debate, and 3) the public servants and government bodies responsible for regulating its outcomes. Each group consists of factions with distinct goals and communicative practices. Readers should expect the following descriptions to provide an initial understanding of where actors stand on the major issues at the heart of Minnesota’s copper-nickel mining controversy. Notice is paid to the differences between local and national news sources, conservative and liberal special interests, and distinct political movements of all kinds.

News Sources

The coverage of sampled news sources is summarized below, with emphasis on their editorial stances toward PolyMet and Twin Metals, in addition to the criticisms and praise they have received from their colleagues in the journalism industry. All these sources demonstrate diverse and often conflicting journalistic perspectives and biases in their reporting on public opinion polls, scientific studies, legal developments, and more. Significant differences exist between sources with local or national audiences and even between Minnesota sources based in the Iron Range, Duluth, and the Twin Cities. Understanding these foundational distinctions will help readers contextualize news sources’ statements and actions throughout the controversy.

Minnesota News Sources.

While the *Star Tribune* (ST) editorial board has “lauded” support of PolyMet (ST, 10/31/2017) and given its official endorsement of the project (ST, 01/12/2018), the paper is far less supportive of Twin Metals, calling it “risky” and urging state officials to “stand up to special interests wielding political pressure” on both sides (ST, 06/08/2018a). Despite the paper’s cautious approval of mining, the *Star Tribune* consistently expresses skepticism of the ultra-wealthy investors who own both proposed mines, criticizing their “dark suits... flashy rings and ... limousines” (ST, 03/18/2016a) and their refusal to answer certain scientific questions (ST, 11/23/2019a). One editorial column about the paper’s opposition to Twin Metals titled “Not this mine. Not this location” was recognized as a finalist for a Pulitzer Prize (ST, 05/04/2020). They are also repeatedly criticized by conservative lawmakers for not supporting Twin Metals (ST, 08/30/2019; EE, 09/05/2019; ST, 01/21/2020a). Finally, they are the only publication to produce comic cartoons about the controversy, all of which favor conservationists’ arguments against both proposed mines (ST, 05/17/2019; ST, 06/22/2019; ST, 01/18/2020b).

Like the *Star Tribune*, the *Timberjay* (TJ) of Tower, MN has been generally supportive of PolyMet, but not Twin Metals, due to its potential effect on the Boundary Waters (TJ, 12/22/2016). *Timberjay* editor Marshall Helmberger wrote that PolyMet supporters “have reason to celebrate” the company’s “remarkably persistent” progress over the last 20 years (TJ, 01/10/2018a). Despite these nuanced underlying views, the *Timberjay* has received both criticism and high praise from stakeholders on both sides of the controversy (CJR, 07/25/2018; TJ, 07/25/2018).

In its news coverage, the *Ely Echo* (EE) often writes empathetically of mining supporters (EE, 06/01/2017) and frames proposed mines favorably as “modern, environmentally responsible” projects that “would provide hundreds of jobs for generations of Minnesotans” (EE, 09/12/2016). The paper’s editors have supported hard rock mining since at least 2009 when they successfully predicted that the coming years would see mining companies and environmentalists mired in controversy (EE, 11/21/2009). They believe there are “two different realities, different visions” between those who support mining and those who do not (NYT, 10/12/2017) and that the extraction of Minnesota’s copper-nickel deposits is inevitable (EE, 08/24/2014). In 2017, the paper reported on its third-place small newspaper award from the Minnesota Newspaper Association for its “balanced... well-written” coverage of the hard rock mining controversy (EE, 02/07/2017). Furthermore, columnists from the *Star Tribune* have written nostalgically about the legacy of the *Ely Echo* and its influential role today (ST, 01/18/2018).

Since at least 2008, the *MinnPost* (MP) has been reporting on the PolyMet proposal, which it called then “perhaps the most important environmental document in Minnesota’s mining history” (MP, 10/06/2008). While remaining critical of the mining industry, the *MinnPost* regularly reports on the area’s apparent support of mining, writing once that “signs with slogans like ‘We Support Mining’ are pretty much permanent fixtures in this part of the state, where mining has been an important pillar of the economy for well over a century” (MP, 10/17/2018). Additionally, the paper has published numerous guest editorials from actors with diverse opinions.

Many sampled articles involve collaborations between these four outlets and other Minnesota-based news sources. The *Ely Echo* and the *MinnPost* have worked in coordination with the *Mesabi Daily News* (MP, 10/30/2019; TJ, 10/30/2019a), another conservative Iron Range paper that the *Timberjay* has criticized publicly for celebrating a “slug of staunchly pro-mining” stakeholders, who it says represent “the machine” of corrupt mining politics (TJ, 06/06/2018). The *MinnPost* has published *Timberjay* articles in full (MP, 06/14/2019), while regularly citing local independent journalists like Aaron Brown as expert sources (MP, 06/28/2019). The *Star Tribune* often works with Minnesota Public Radio, once commissioning a public opinion poll together (ST, 02/25/2020a; ST, 02/25/2020b). The *Star Tribune* also once petitioned a court with the *MinnPost* to deny PolyMet’s request to ban journalists from filming a permit hearing (MP, 01/17/2020). The *Duluth News Tribune*, meanwhile, has published guest editorials in the *Star Tribune* (ST, 12/21/2016), been referenced in *MinnPost* news coverage (MP, 09/15/2017), and received both criticism and praise from actors throughout the network (EE, 12/25/2016). All these relationships speak to the professional identity of each news source and the audiences and advertisers they aim to attract.

National News Sources.

The database of major national daily newspapers sampled in this study contains references to Minnesota’s mining controversies from the four news outlets described in brief below. The fifth publication in the database, the *Chicago Tribune*, had written no articles relevant to the controversy. Overall, national news media seem most interested in stories that involve presidential politics, and they almost always adopt the same classic framing of the

controversy as a two-sided conflict. (Specific stories mentioned here are described further later in this paper).

With 14 relevant sampled articles, the *Wall Street Journal* (WSJ) provides the most coverage of the national outlets sampled. Specializing in business and economic news, it provides unique, consistent reporting on the international metals market (WSJ, 06/05/2018) and updates on Glencore's financial prowess worldwide (WSJ, 02/22/2018).

With 10 sampled articles, the *New York Times* (NYT) provides the most feature/profile stories (NYT, 10/23/2016) and guest editorials (NYT, 05/17/2018). Some of its coverage has caused significant controversy between stakeholders in Minnesota, such as its magazine article originally entitled "Water War" (NYT, 10/12/2017).

With 7 sampled articles, the *Washington Post* (WP) joins the WSJ and NYT in similarly covering three specific stories in the national spotlight: President Obama's decisions regarding Twin Metals (WP, 12/16/2016), the Antofagasta landlord scandal (WP, 03/09/2017), and the Trump legal opinion that reversed Obama's decisions (WP, 12/25/2017).

The two sampled *Los Angeles Times* (LAT) articles both feature the economic hardship experienced by mining supporters on the Iron Range, while thoroughly criticizing the safety record of the hard rock mining industry and reviewing the international metals markets (LAT, 08/13/2015; LAT, 03/13/2016).

Stakeholders

Virtually every stakeholder involved in the controversy self-identifies as being a member of one of the two primary perceived sides in the debate. Therefore, this paper divides stakeholders into two classifications: conservatives (those who strongly support copper-nickel

mining) and conservationists (who are less supportive of mining). These broad terms should draw attention to the oppositional relationship of the two groups but also the many values they share. In the next chapter, these terms will be found to be ill-equipped to communicate the far more complicated reality of the situation.

Conservatives.

A major objective of conservative actors on the Iron Range is to secure for their children economic success in the area through employment in the mining industry (EE, 02/12/2018). As portrayed in sampled news coverage, they are represented by several organizations and corporations that support a variety of interests, described next.

Mining Companies.

Two focal actors to consider are PolyMet and Twin Metals. PolyMet, a Canadian company today, used to be based in Colorado with sponsorship from an Australian company called North Mining, Inc., which failed to assume majority ownership of the mine and support it up to production as it had promised (EE, 06/11/2000). PolyMet CEO Jon Cherry was formerly the project manager for Rio Tinto Kennecott's Eagle Mine in Michigan (WP, 04/03/2007), which was sold to another company after it obtained its permits to mine (MP, 08/30/2013; MP, 11/02/2018). Because it is significantly less advanced in the approval process than PolyMet is, Twin Metals will not be ready to complete an environmental impact statement or permit applications for several years. Its original investors, Antofagasta of Chile and Duluth Metals, had been optimistically fundraising for plans to mine since at least 2010 (WSJ, 11/17/2010). But after Duluth Metals pulled out of the joint effort early on, Antofagasta paused its investments,

and the project temporarily stalled under the faltering international metals market (TJ, 09/07/2017).

Sampled news sources frequently report on Glencore, whose owners are “some of the world’s richest individuals” (TJ, 06/27/2019a), with an annual revenue of approximately \$220 billion, “roughly the same” as world’s largest healthcare company, the Minnesota-based UnitedHealth Group (MP, 06/28/2019) or the Minnesota-based Cargill, “the world’s largest private company and a competitor in agricultural markets” (ST, 07/13/2019). News outlets agree that Glencore could be the “biggest company you never heard of” (MP, 06/28/2019), with a 50-year history of “aggressive” business strategies in “risky” markets (ST, 12/04/2018), a “higher tolerance for politically murky situations” (TJ, 07/03/2018a), and a “willingness to operate in difficult jurisdictions” (ST, 07/31/2019a). These traits are credited for its rise and survival since the collapse of international markets in 2015-2016 (TJ, 08/22/2018a). In addition to its assets around the world, Glencore owns a “little-known” plant in the Twin Cities that processes mustard seeds (ST, 07/13/2019).

Finally, other mining companies may be considered actors, including those that previously owned the hard rock mining projects proposed today, such as International Nickel (WSJ, 11/17/2010), those that have opened hard rock mines in other states, such as the Flambeau Mining Company (MP, 12/18/2015), those that have considered proposing more hard rock mines in Minnesota in the future, such as Teck (EE, 11/15/2017), and those that have operated or closed iron ore mines in the region, such as US Steel (ST, 05/02/2016). All these companies have set or challenged precedents and significantly influenced the dynamics of the ongoing controversy.

Pro-Mining Organizations.

One set of conservative actors to consider are several Minnesota-based organizations dedicated to supporting mining projects of all kinds. Such groups often portray themselves as unfairly criticized by mining opponents, like Nancy Norr of Jobs for Minnesotans, who claims to represent “the silent majority” of mining supporters (EE, 07/16/2016), and Gerald Tyler of Up North Jobs, who believes efforts to prevent hard rock mining will “devastate” (MP, 02/27/2014) and “decimate” the local economy (EE, 07/13/2018). These and other organizations, like Conservationists with Common Sense and Minnesota Miners, advocate for mining projects by writing guest editorials to local news outlets that support the statements of mining companies and conservative politicians, while organizing outreach events and legal actions to promote and support them (ST, 05/30/2019).

Labor Unions.

Labor unions in Minnesota play a nuanced role in this controversy, by simultaneously supporting the proposed mines in principle, while also strongly criticizing, at times, the companies that own them. In the words of one union member, “We really don’t care if you’re Republican or Democrat; we want people who will support local union jobs... for everybody” (MP, 08/20/2019). Nevertheless, representatives from the United Steelworkers union have both declared metaphorical war against conservationists (EE, 07/01/2017) and accused Republicans of corrupt elitism (TJ, 08/21/2014), while naming Glencore “one of the most irresponsible companies on the planet” for having “mistreated workers and harmed communities on nearly every continent” (TJ, 06/27/2019a). Furthermore, the union even awarded Glencore in 2015 with a “silver medal in corporate irresponsibility” for its actions

against union workers at the Sherwin Alumina plant in Texas (MP, 06/28/2019). In 2019, Twin Metals signed an agreement with the Iron Range Building and Construction Trades Council to commit to using union labor during the construction of its mine. The *Ely Echo*, with a celebratory tone, wrote, “Twin Metals, labor unite,” while the company said it was “proud to partner with Minnesota’s union trades” (EE, 08/23/2019). Other outlets reported that Twin Metals would not commit to using union workers in the production phase (TJ, 08/21/2019; MP, 12/18/2019a). Such coverage emphasizes the tense associations between unions and mining companies. Though they stand to support each other, their relationships are by no means static or simple.

Conservationists.

The values of conservationists are described differently by actors throughout the network. Some emphasize an admiration for wilderness, reciting President Theodore Roosevelt’s passionate pleas to protect the nation’s “natural wonders” from “selfish men or greedy interests” that would strip the land of “its beauty, its riches or its romance” (NYT, 07/02/2016; NYT, 05/17/2018). Retired Minnesota state scientist Dr. Judy Helgren describes “a spiritual side” to the environmentalist values of Minnesotans (MP, 11/30/2018). Other conservationists say bluntly that economic impacts are “not as important as the national interest of preserving this wilderness experience” (EE, 07/20/2016). A second major value consistently expressed by conservationists is corporate and government skepticism. As early as 2008, the *MinnPost* reported that environmentalists distrusted hard rock mining advocates (MP, 01/24/2008), believing, “The more informed one gets about copper mining, the more one learns not to trust the industry and to fear the scale and persistence of its pollution” (MP,

10/06/2008). Younger conservationists have expressed other critiques of the system, such as first-year Macalester College student Kiwa Anisman, who blamed a “continual adherence to the principles of capitalism” for exacerbating exploitation and said voting and coalition-building are critical tools to support environmental justice (MP, 04/12/2019).

Environmentalist Organizations.

There are many conservation groups to consider as actors in the network. Some are national nonprofits, like the Sierra Club (NYT, 06/26/2019) and the Center for Biological Diversity (ST, 01/10/2017), which participate by filing lawsuits against mining companies and drawing national attention to mining in Minnesota. Some represent Minnesota-based legal activists, like Water Legacy and the Minnesota Center for Environmental Advocacy (MCEA), whose staff of “lobbyists, litigators, and experts” have taken credit for preventing mining projects from taking rise in Minnesota (TJ, 08/01/2018; TJ, 10/10/2018), while asserting that their position is not to be “against every mine,” rather, “it is about thinking differently” (TJ, 11/02/2016; ST, 01/18/2018) and targeting an audience of “suburban moderates” (MP, 05/09/2019). Nevertheless, MCEA has said they are “really skeptical of any press release we see from a mine company” (TJ, 08/08/2019). Groups like the Twin Cities-based Climate Generation also work to influence decision-making by training state employees to promote inclusion and diversity in the hiring practices of regulatory agencies (MP, 07/30/2019).

Other environmental groups explicitly oppose Twin Metals, such as the Campaign to Save the Boundary Waters (SBW) (03/23/2016), Friends of the Boundary Waters Wilderness (ST, 03/09/2016), Sportsmen for the Boundary Waters (ST, 02/05/2019), Sustainable Ely (MP, 05/31/2013), and more. Becky Rom of SBW, for example, has reportedly “led the fight” against

hard rock mining (TJ, 07/11/2019) to preserve “the last, pure, great experience” of the north (EE, 07/14/2017). Conversely, some groups, like Duluth for Clean Water, work more toward opposing PolyMet and preventing pollution in the St. Louis River watershed, instead. These actors do not emphasize wilderness preservation, but, rather, the sanctity of public drinking water and the treaty rights of the indigenous populations of the state.

Outdoor Recreation Businesses.

Some conservationist actors represent wilderness outfitter businesses, including Patagonia on the national level and the Voyageur Outward Bound School locally, many of which have collaborated to file lawsuits against efforts to mine in the Rainy River watershed. They argue that damage to the Boundary Waters will decrease tourism in the region and harm the local economy, along with the wilderness. For example, Ely business owner Steve Piragis said he is “not anti-mining” but “deeply concerned” about hard rock mining’s potential threats (EE, 07/14/2017; EE, 12/08/2017). Adam Fetcher, communications director of Patagonia, board member of the Boundary Waters Trust, and former Obama Administration press secretary, similarly argues for Minnesota’s outdoor values, which he says bring together “hunters and anglers, executives and blue collar workers, urban and rural families, liberals and conservatives, and everyone else” (MP, 03/28/2016).

Indigenous Stakeholders.

Indigenous stakeholders are classified in this thesis as conservationists, because they arguably hold the strongest opposition to industrial projects that stand to pollute the environment on which they depend for natural resources and cultural spirituality. By no means, however, are these stakeholders a monolith, operating under the same set of values or

opinions. Some tribal government officials and citizens do support mining, but most tribal institutions and organizations referenced in sampled coverage oppose it — along with other proposed fossil fuel projects such as Enbridge’s Line 3 pipeline (MP, 12/30/2019; ST, 06/02/2020; ST, 06/04/2020). The Minnesota Chippewa (Ojibwe) Tribe includes the Bands of Bois Forte, Fond du Lac, Grand Portage, Leech Lake, Mille Lacs, and White Earth. The Red Lake Band of Chippewa (Ojibwe) has a distinct tribal government called the Red Lake Nation. Additionally, there are four small Dakota communities in the state. These entities and their diverse coalition of members make up the indigenous stakeholders in the actor-network. Holding treaty rights granted by the United States, they have been promised the right to use the natural resources of the region, and, thus, frame many of their legal arguments around the health of these resources.

Public Servants

Actors classified as public servants include all the governmental entities and political figures involved in the controversy (excluding tribal governments). Between the hierarchy of federal, state, and local governing bodies and the internal divisions within political parties, these actors possess diverse views that change over time.

Government Bodies.

On the federal level, the most relevant public bodies with influence on Minnesota’s copper-nickel mining controversy include Congress, the courts, and a number of executive departments and agencies. The Department of the Interior includes the Environmental Protection Agency (EPA), which oversees states’ regulation of industrial pollution, and the Bureau of Land Management (BLM), which must grant mineral leases to Minnesota’s proposed

mining projects. The Department of Agriculture is home to the US Forest Service (USFS), which manages the Boundary Waters Canoe Area Wilderness (BWCAW) of the Superior National Forest in Minnesota; it also authorized an exchange of federal land with PolyMet. The Justice Department is investigating potentially corrupt practices in Glencore, and the Department of the Military's Army Corps of Engineers monitors the nation's dams and must also grant its own approval to both mines.

On the state level, two Democratic governors Mark Dayton and Tim Walz have overseen the MN Department of Natural Resources (DNR) and the MN Pollution Control Agency (MPCA) — in addition to holding great influence over entities like the state's attorney general, legislative auditor, investment board, and historical preservation office, which are all involved to different extents. Additionally, the MN Legislature and court system are significant actors, alongside local mayors and city councils, county commissioners, chambers of commerce, and regional economic spending bodies, like the Iron Range Resources and Rehabilitation Board (IRRRB) and the MN Department of Employment and Economic Development (DEED).

Political Parties.

The majority of Republican lawmakers in Minnesota support both PolyMet and Twin Metals and believe government "at every level" should be "a partner and referee rather than an adversary for job creating projects" (EE, 12/22/2017). Iron Range mayors, including Andrea Zupancich of Babbitt and Chuck Novak of Ely, have called certain government meetings a "farce" (EE, 07/01/2017) and opposed both President Obama and Gov. Dayton's mining decisions (ST, 12/15/2016a; EE, 03/03/2017). Such conservative politicians have consistently aligned themselves with the pro-business rhetoric of Donald Trump (MP, 06/27/2018; MP, 08/01/2018;

WSJ, 09/15/2018; ST, 07/01/2019; TJ, 12/18/2019a; TJ, 01/16/2020), while responding to social criticism by claiming that “mining lives matter as well” (ST, 07/13/2016). US Rep. Pete Stauber, for example, said he would “fight” efforts of “killing mining jobs... every step of the way” (TJ, 01/16/2020).

Democrats are split between those who support both PolyMet and Twin Metals and those who oppose only Twin Metals, due to its proximity to the Boundary Waters. Some of the fully pro-mining MN Democrats, including State Sen. Tom Bakk (EE, 12/06/2019) and US Rep. Rick Nolan (TJ, 04/19/2017a), share an opposition to conservationists with Republicans (EE, 12/16/2016; EE, 03/12/2017). Nevertheless, Nolan concedes that “mining was never done right” in the past, but he still argues that efforts to prevent new mines today threaten the “essential... way of life” on the Iron Range (TJ, 04/19/2017a). Despite his many criticisms of President Trump and his support of things like Obama’s Affordable Care Act, Nolan worked with Republicans to help Trump reverse Obama’s mining decisions (MP, 01/20/2017; TJ, 04/19/2017a; ST, 05/19/2017; ST, 05/06/2018; MP, 05/24/2017; MP, 02/23/2018; TJ, 07/26/2018). Other Democrats, such as US Sen. Amy Klobuchar, largely support or claim indifference to PolyMet, while demonstrating at least some opposition to Twin Metals. US Rep. Betty McCollum is among the leaders of this group of actors, having consistently worked to prevent mining near the Boundary Waters (MP, 11/21/2018). Through her position as chair of the House Interior-Environment Appropriations Subcommittee, she has repeatedly claimed to “do everything I can to fight back to protect this special place” (MP, 09/19/2018; MP, 11/21/2018; MP, 05/16/2019; MP, 07/02/2019).

Associations

Actors on all sides on the debate continually reinforce associations that lead to controversial conflicts. To communicate how and why, this section attempts to describe some of the main polarizing factors apparent in sampled coverage. Considered together, the following themes help identify the multifaceted relationships actors engage in with one another. In the context of this study, *polarization* and *politicization* refers to the increasing self-identification of actors as opponents of one another. Though these terms may possess a negative connotation, they are not necessarily meant to give the impression that all such connections are hostile. ANT scholars have agreed that the best place to witness the inner workings of such a controversy are on its fringes, where conflict renders the usually unseen forces visible in retrospect (Latour, 2007). Whereas the previous section defined each actor group, readers should expect this section to reveal patterns of interaction between them.

Polarization

The polarization of stakeholders along cultural lines is apparent and abundant in sampled coverage. Some of these divides pit racial, gender, and class identities against each other, as described by the following sub-sections.

Cultural Identity.

While most conservative actors cherish and identify with a nostalgic vision of Minnesota's mining history (LAT, 03/13/2016; ST, 04/07/2018; EE, 12/16/2018), most conservationists argue that Ely's culture is instead more rooted in outdoor recreation (MP, 03/28/2016). Emphasizing this tension, the New York Time's "Water War" article claims, "Some people call (Ely) a mining town, others a tourist town, but East Sheridan Street shows it to be

both” (NYT, 10/12/2017). To many actors, there is even an apparently political overtone associated with canoes, as the *Ely Echo* acknowledged when they wrote, “Many who would never paddle a canoe nonetheless love Ely,” implying that the two are usually mutually exclusive (EE, 01/02/2017). Conservationist JT Haines argues that the image of canoes “taps into a real tension involving legitimate and historical regional issues,” but it only serves to increase the polarization of cultural identity (MP, 03/10/2014).

Whether they like canoes or not, actors on all sides of the controversy may still share an identity of being a multi-generation Iron Range resident, a title understood to grant one additional credibility in the controversy. Conservatives especially emphasize such ancestral roots when seeking to celebrate their allies and disparage their opponents (EE, 04/18/2016; EE, 07/20/2016), such as one mining supporter who told *Timberjay* editor Marshal Helmberger to “go back to the Twin Cities,” even though he first moved to the Iron Range 34 years before (CJR, 07/25/2018). The *Ely Echo* once criticized conservationist Becky Rom for “pontificating on high” as a lawyer in the Twin Cities, a move they claimed shows “she has a closed mind and has forgotten her Ely roots” (EE, 10/22/2017). Some conservationists agree the “Iron Range’s way of life centers on taconite mining” but still believe that local people are “increasingly skeptical” of hard rock mining (TJ, 03/08/2018). Conservatives have said environmentalists are “nuts” (EE, 07/16/2016) and claimed, “If these people were around when the Wright brothers were around nobody would be flying” (EE, 02/12/2018). Even state legislators are reportedly “sick and tired of listening to people who don’t live where we live trying to tell us what we can and can’t do” (ST, 03/11/2016a).

Furthermore, many actors are sensitive to the use of specific labels of identification. Whereas most conservatives refer to hard rock mining as “copper-nickel” mining, many conservationists call it “sulfide” mining to emphasize the potential sulfate pollution associated with it (ST, 03/11/2016a). As one conservative said, “There is no such thing as sulfide mining... The Range delegation takes great offense at people who call it that” (MP, 03/06/2012). Conservatives and the *Ely Echo*, on the other hand, call conservationists “the anti crowd” (EE, 12/25/2016; EE, 07/16/2017; EE, 07/30/2017) because “‘no’ (is) the only word... that they’ve used” (EE, 02/12/2018). Once, the paper even demanded the author of a USFS press release be “fired on the spot” for its “shameful” use of the phrase “sulfide mining” (EE, 06/26/2016). One self-described “Life Long Ely Resident” argued the federal government was “only listening to deep pocket environmental groups and the Governor who seems to be beholden to those eekillogical (sic) groups” (EE, 06/25/2016). Some conservationists are similarly sensitive about their self-identification, claiming, “It is time for reciprocation... Those who would attack our waters... are ‘anti-water’” (MP, 02/17/2017). But others condemn the use of any cynical terms intended to antagonize opponents and argue that a good label is one that at least signals a distinction between traditional taconite mining of the region and the uniquely risky hard rock mining new to the area (MP, 03/10/2014).

Elitism.

For many conservatives, environmentalism has been “a symbol of the arrogance and elitism of the Twin Cities” (MP, 01/15/2014), criticizing “the privileged few” who fancy themselves the keepers of the Boundary Waters (MP, 02/27/2014), while “flying around the world in their private jets” (NYT, 10/12/2017). One state legislator said conservationists wanted

to “shut down mining and logging completely and then we would turn into nothing but a wasteland for the city slickers to enjoy on their days off” (ST, 03/11/2016a). While most news outlets seem to acknowledge this historic image of elitism, some produce coverage that may tend to exacerbate it. The *Star Tribune*, for example, once wrote a warm feature about conservationist Becky Rom, who they said “learned you could still be friends with someone even if you disagreed with them,” while also explaining why conservatives like Ely Mayor Chuck Novak call Rom’s supporters “Ely’s 1 percent” who are “comfortable because they have all this money,” and miners “don’t have a chance” (ST, 11/27/2016). Nevertheless, the article calls Rom someone who “by now... was supposed to be retired” and promotes her exposure in the national media and her connections with national Democrats and big corporations like Patagonia — the very symbols of elitism conservatives like Novak claim to resent (ST, 11/27/2016).

Another infamous demonstration of the apparent tension between actors’ concepts of self-identity appears in a *New York Times Magazine* article originally entitled “Water War” (NYT, 10/12/2017). It describes Iron Range miner Dan Forsman’s disdain of “elitists” and “hypocrites” like Rom, whose so-called “condescension” allegedly comes across in her interview statement that, “Danny Forsman drives to the mine in his truck, comes home and watches TV, and he doesn’t know this world exists... We’ll never change a Dan Forsman’s mind... Because they’re not open to a conversation” (NYT, 10/12/2017). Rom’s husband Reid Carron agreed, telling the reporter, “They want somebody to just give them a job so they can all drink beer with their buddies and... not have to think about anything except punching a clock... they are resentful

that other people have come here and been successful while they were sitting around waiting for a big mining company” (NYT, 10/12/2017).

The *Ely Echo* said Rom and Carrons’ “disgusting” comments painting mining supporters as “resentful” simpletons who would be defeated “one funeral at a time” have “greatly damaged the anti-mining movement,” leaving leading environmental activists “looking like fools” (EE, 07/14/2017; EE, 10/22/2017; EE, 12/08/2017). Furthermore, the paper called their apology a lie and noted that it includes Rom’s first use of the phrase “copper mining” instead of “sulfide mining,” a change they consider a small but significant shift in power, writing, “Apparently when you’ve stepped in poop you need to try to clean up your act while wiping off your soul” (EE, 10/22/2017). Two former Ely mayors agreed that Rom’s comments proved conservationists believe “miners and blue collar people are in that basket of deplorables that Hillary Clinton talked about” (EE, 11/01/2017; EE, 02/12/2018).

Sex & Gender

Many conservatives reportedly believe that, due to the pressures of masculine culture, a male “breadwinner” who cannot find industrial employment will “lose (his) dignity,” thereby contributing to the anxiety felt by hard rock mining supporters regarding declines in the mining industry (EE, 06/01/2017). They repeatedly relate the concept of trading a mining job for a service industry job in wilderness tourism as degrading, saying “I don’t want to be anybody’s Sherpa,” because “the loss of respect is a big deal” (NYT, 10/12/2017; ST, 10/28/2017).

In a pair of dueling 2009 guest editorials in the *MinnPost*, retired Iron Range elementary school teacher Elanne Palcich and environmental professional Julie C. Klejeski debated the effects of the controversy in terms of women’s values (MP, 12/14/2009; MP, 11/23/2009).

Palcich asked, “how will women benefit from this mining project?... When the mining economy slumps... and domestic abuse increases, who receives the brunt of that abuse?” (MP, 11/23/2009) In response, Klejski defends men “who are often unfairly lambasted,” telling them, “you are still solid husbands and fathers... You encourage your wives and daughters in their career choices or cheer them on as stay-at-home moms” (MP, 12/14/2009).

Other issues that predominately affect women are sometimes used by conservatives to disparage mining opponents, such as when mining supporter Mike Banovetz interrupted a question-and-answer period at a public presentation with two female environmentalists to describe an unrelated article from an academic journal that he said defines “eco-sexual” as “a person that finds nature sensual or sexy” and uses “environmentally-friendly sex products... to have sex with nature itself” — then he asked, “is this the underlying reason for constant litigation by you, your organization and your supporters?” (TJ, 08/30/2018) One *Ely Echo* editorial about mining expresses annoyance over the national media attention of sexual assault awareness and repeats a claim that “Washington, D.C. can’t be a fun place to be... That’s why we live right here in Ely, Minnesota” (EE, 11/19/2017).

Whether any of these examples indicate a subtle influence of sexism or patriarchy behind some conservative arguments or not, gender identity certainly plays some role in the actor-network. This role has furthermore been acknowledged by politicians like US Sen. Amy Klobuchar, who once criticized federal agents in the Obama Administration for not bothering to answer “some pesky questions from a woman senator from the Midwest” (WSJ, 06/07/2019; TJ, 06/13/2019a), and normal citizens, like one elderly woman who told reporters, “I own a uterus and, therefore, I must vote... but I refuse to be a one-party voter” (NYT, 09/15/2018).

Underdog of the Majority.

Both perceived sides of the controversy claim to be simultaneously the underdog and, in the majority, using public opinion polls and the coverage of public meetings to justify their claims. Hard rock mining supporters claim only “a very vocal minority” of Minnesotans disagree with them (MP, 02/27/2014; EE, 07/27/2017; EE, 02/12/2018), and environmentalists claim, “almost everybody you see walking down the street has a ‘we support the Boundary Waters’ sign” (EE, 07/20/2016). While the *Ely Echo* has consistently reported on polls that “overwhelmingly” favor pro-mining actors (EE, 11/26/2016; EE, 12/02/2016; EE, 03/21/2017), the *Timberjay* and conservation groups do the same for those that show “overwhelming” opposition to hard rock mining (TJ, 12/04/2013; TJ, 03/09/2016; MP, 07/28/2017; TJ, 03/01/2018; TJ, 03/08/2018a; TJ, 04/27/2018; MP, 09/24/2018). The *Star Tribune*, meanwhile, once produced its own high-quality poll that revealed “overwhelming” support for conservationists (ST, 02/25/2020a; ST, 02/25/2020b; ST, 03/04/2020). Beyond the conflicting nature of these poll results, local sampled news outlets consistently report on well-attended, “highly charged” public debates that usually feature an equal amount of conservationists and conservatives (EE, 07/11/2011; ST, 03/18/2016b; TJ, 04/20/2016; ST, 07/13/2016; TJ, 11/02/2016; EE, 03/10/2017; ST, 03/13/2017; ST, 03/17/2017; TJ, 04/19/2017a; EE, 06/16/2017; EE, 07/14/2017; EE, 07/16/2017; MP, 09/15/2017; TJ, 07/11/2018; TJ, 08/01/2018; TJ, 08/30/2018; TJ, 10/10/2018; TJ, 07/11/2019; TJ, 08/06/2019; TJ, 08/08/2019).

Of all the local outlets, the *Ely Echo* provides by far the most detailed information about the deliberative process set forth by government agencies, advising stakeholders on how to make their voices heard (EE, 03/18/2016a; EE, 06/19/2016; EE, 01/22/2017; EE, 03/13/2017;

EE, 01/05/2018a; EE, 01/05/2018b; EE, 01/30/2018; (EE, 01/31/2018; EE, 11/01/2018). In the news, the paper often claims that mining supporters “dominate” most public meetings, (EE, 07/01/2016; EE, 07/16/2016; EE, 07/20/2016; EE, 03/17/2017; EE, 06/01/2017; EE, 02/06/2018; EE, 02/12/2018; EE, 11/02/2018). In editorials, they hope for a “big turnout” of the “silent majority” of mining supporters whenever “the circus comes to town” for government meetings (EE, 07/17/2016). Furthermore, the *Ely Echo* has also expressed frustration when public meetings are held in Duluth, rather than Ely, for being a two-hour drive away from the “people on the Range who work for a living,” and it has repeatedly celebrated conservatives who have chosen to boycott them (EE, 06/26/2016; EE, 07/01/2017), even though some conservatives have implied that only those who attend public meetings deserve to have their opinions heard (ST, 08/16/2019). Environmentalists, meanwhile, have said the boycott of public meetings only “perpetuates divisive rhetoric” (ST, 07/19/2017).

The Binary Narrative: Us vs. Them.

Consistent through virtually all sampled news coverage is an understood conception of the region’s mining controversy as involving two clearly defined opposing sides. This binary narrative is a classic framing of the controversy naturally adopted by the vast majority of actors in the network. Early coverage from national outlets said, “two sides clashed” over “the prospect of new jobs against concern about environmental damage” (WP, 04/03/2007; WSJ, 12/15/2011). The *Star Tribune* has consistently adopted the binary frame, explaining that “on one side are environmentalists and tribal governments... on the other are mining and business interests” (ST, 12/05/2010). A decade later, the story is still told through periodic “latest twists”

in plot with high stakes and simple characters like “job creation vs. environmental risks” (ST, 08/07/2019a).

Though they universally adopt this narrative frame, nearly all the news sources in this study have also published criticisms against the media’s two-sided storytelling fixation. In the words of one Iron Ranger, reporters depend on the “rusty cliché” of boom-and-bust political storytelling “as if fulfilling a stylistic mandate” (ST, 03/11/2016a). Conservationists have argued that the news is “too often... boiled down to a far too simple ‘jobs versus the environment’ frame” (MP, 08/16/2013) or “as a debate between conservationists and business, between jobs and the environment” (MP, 04/15/2015). *Timberjay* editor Marshall Helmberger agrees the debate has been wrongly portrayed “as the stereotypical clash between jobs and the environment,” which he said obscures the economic arguments against hard rock mining (TJ, 09/12/2018; MP, 09/18/2018). Similarly, both the *Ely Echo* and mining supporters have criticized the fact that miners and environmentalists are “painted as rivals” and “positioned as adversaries” in news media (EE, 04/24/2017). The paper blames “well-placed individuals” of the “anti-mining contingent” and “gullible or left-leaning media outlets” for producing “well crafted propaganda” that seeks to push a false narrative that Ely is “a town divided” on the copper-nickel controversy (EE, 07/17/2016; EE, 11/26/2016).

Words of War.

All sampled news outlets claim to uphold a shared value of compassion and a desire to decrease polarization (EE, 07/16/2017; TJ, 07/26/2017a; ST, n.d.), which they make a point of expressing near holidays like Thanksgiving (EE, 11/26/2016), Christmas (TJ, 12/22/2016), and New Years’ Eve (ST, 12/30/2018; ST, 12/31/2019). But despite their values, the classic binary

narrative frame these outlets promote includes a core concept internalized by nearly every actor in the network: that the “fight” over hard rock mining is nothing short of “war.” Since the very earliest sampled coverage to the most recent, language reminiscent of war is abundant, as virtually every news outlet and stakeholder uses it consistently. One early *Ely Echo* editorial claimed, “The new war on mining has begun... and Ely is a battlefield,” after what they call the first “shots fired” in a 2009 public meeting (EE, 11/21/2009). Stakeholders, they say, are “forces” in an ongoing “fight” (EE, 07/24/2016; EE, 03/12/2017). In one news headline, “Mayor takes aim at (Governor)” (EE, 04/18/2016).

The *MinnPost* has compared the controversy to a war since at least 2008 (MP, 10/06/2008; MP, 10/20/2008), using phrases like “political landmines,” “battleground,” “battle,” and “fight” (MP, 03/06/2012; MP, 06/13/2018; MP, 11/21/2018; MP, 09/19/2018; MP, 12/18/2019b). As early as 2014, the *Star Tribune* has also used analogies of war, including its coverage of a political decision it called the “Iron Range Rebellion” (ST, 04/07/2014). The *Timberjay* occasionally does the same (TJ, 03/09/2016; MP, 09/19/2017), as do national outlets, such as the *New York Times*, whose “Water War” article triggered much contempt between stakeholders for months afterward (NYT, 10/12/2017), as evidenced by the letters-to-the-editor they published in response, in which both an environmentalist and a taconite miner called the article’s “culture war” framing “extremely unhelpful” (NYT, 10/27/2017).

Conservative stakeholders have also used language of war, including Gerald Tyler of Up North Jobs (MP, 02/27/2014) and one pro-mining DFL state representative, who said, “We’re fighting the anti-mining folks every day down there, and you know who they are” (EE, 12/06/2019; TJ, 12/11/2019). Conservationists respond in kind, accusing conservatives of

coordinating “planned assaults” in the “war over water... a war on Minnesota’s children” (MP, 07/28/2017; MP, 08/24/2017), while referring to the “drumbeat” of their opponents (MP, 12/06/2018) and the ongoing “shockwave” they say mining has inflicted on the region (MP, 09/19/2018).

Words like “victory” and “defeat” appear in sampled news coverage dozens, if not hundreds of times, to recognize many different occasions, including favorable election results (MP, 11/21/2018), agency actions (MP, 11/02/2018), courtroom decisions (ST, 06/25/2019), acts of Congress (EE, 12/01/2017), and more. As one mining supporter said, even “a small victory... is a victory,” emphasizing the understood value of having victories and defeats to share with news media to continue lobbying for their cause (ST, 05/06/2018). Often, such alleged victories are hyperbolically portrayed as superlative successes, while defeats are catastrophized as existential failures (MP, 09/19/2018; MP, 12/21/2018), such as one “jubilant” conservationist’s interpretation of one “victory” he claimed guaranteed that “PolyMet will never operate in the state of Minnesota” (MP, 01/14/2020). Another time, the *Timberjay* reported on competing “major victories” for conservationists and conservatives in one week-long period (TJ, 08/06/2019; TJ, 08/11/2019). Only rarely do actors on either side temper the celebrations of their colleagues (TJ, 07/24/2018; TJ, 07/25/2018), such as when Trump succeeded in reversing Obama’s 2016 decisions, and the *Star Tribune* editorial board blamed environmentalists’ past narrative of victory for blinding them to a predictable later defeat (ST, 12/27/2017). Even one conservationist’s editorial disparaging the celebration of “ephemeral” victories nevertheless agrees with the notion that “only one victor can emerge” in the two-sided controversy (MP, 04/12/2019).

Escalations of Conflict.

The Iron Range has experienced bitter tension between conservatives and conservationists since at least the 1960s and 70s, when federal buildings were burned down in riots, environmentalists were intimidated by conservative vigilantes, and conservationist Sigurd Olson was hanged in effigy off the back of a logging truck (MP, 11/12/2015; NYT, 10/23/2016; NYT, 10/12/2017). Olson's biographer, David Backes, told the *MinnPost* that the famous environmentalist would be fighting "tooth and nail" to oppose Twin Metals, if he were still alive (MP, 09/30/2019). The "contentious hearings" of the past reportedly resemble those of today (MP, 10/06/2008; MP, 01/15/2014; MP, 07/27/2016; NYT, 10/23/2016; MP, 02/23/2018; TJ, 08/07/2018; TJ, 10/24/2018; MP, 12/06/2018; MP, 04/01/2019; TJ, 07/11/2019), as polarization between actors groups ranges from the hurling of insults and accusations to the leveling of existential threats (MP, 09/10/2012; EE, 03/13/2016; EE, 07/14/2017; CJR, 07/25/2018; MP, 09/24/2018; MP, 07/02/2019). While conservationists frame these similarities as confirming "fears that a new mining surge could mean history repeating itself" (WP, 03/04/2007), conservatives like the *Ely Echo* relent that "political power and the fear factor" trumped common sense when laws to preserve the Boundary Waters were enacted in the first place (EE, 07/30/2017). One *Star Tribune* columnist cites earlier similarities, such as Sigurd Olson's 1957 persuasion of the Eisenhower administration to deny mining leases to Twin Metals' predecessor, International Nickel (ST, 01/18/2018).

Conservatives blame environmentalists for antagonizing them and exacerbating the trend of polarization, like US Rep. Pete Stauber (R), who said conservationists' "utter disregard for our way of life is insulting" (ST, 01/16/2020a). The *Ely Echo*, for its part, consistently accuses

conservationists of using tactics of “delay (and) denial” to “create... controversy” and “sell memberships and fund lawsuits with high priced lawyers” and cater to elitists with “\$10,000 a plate fundraisers in the Twin Cities” (EE, 04/14/2013; EE, 07/24/2016; EE, 07/30/2017).

Sometimes, actors on either side state their mutually polarizing relationships clearly. While one mining supporter said, “These uninformed activists... have inspired us, generally soft spoken Iron Rangers, to... yell a little louder” (EE, 02/12/2018), conservationists claimed to speak “loudly for a quiet place” (ST, 07/13/2016) asking, “Where is the outrage? Minnesotans need to speak loudly, clearly” against those who would “turn our lake country into a sulfide mining cesspool” (MP, 03/06/2012; MP, 12/12/2017). Ironically, what representatives of one side calls a “real slap in the face” to the Iron Range (MP, 09/15/2017), the other calls a “slap in the face to... the Boundary Waters” (ST, 03/18/2020a).

Finally, each side blames the other for introducing existential threats to their community, like retired MPCA scientist Dr. Judy Helgren, who asked, “Is it time to sing a Requiem for our precious wetlands? Should the bells toll?” (MP, 11/30/2018), journalist Don Shelby, who said damage to the Boundary Waters would be “for millions of people, the end of the world” (MP, 07/26/2011), Patagonia executive Adam Fetcher, who has claimed, “Without the Boundary Waters, we’re just flyover country” (MP, 03/28/2016), and US Rep. Betty McCollum, who said hard rock mining would “create an industrial wasteland” of the Iron Range (ST, 11/29/2017). Former DNR Commissioner Tom Landwehr also said approving Twin Metals would be a “knife in the heart” to the state, while others told mining supporters to “Ask yourselves how many people have died... (due to) your actions or inactions” (MP, 04/15/2014). Conversely, the *Ely Echo* repeatedly describes environmentalists’ concerns that pollution from

copper mines would “destroy” the livelihoods of those in the outdoor recreation industry (EE, 10/09/2017; EE, 07/14/2017; EE, 07/31/2017; EE, 02/06/2018; EE, 05/09/2018).

Politicization

This section describes the patterns of action and debate between political actors, as portrayed by sampled coverage. Both major political parties show signs of increasing internal divides, and it is uncertain how political dynamics will evolve through the presidency of Joe Biden, who was one of the only Democratic candidates (alongside US Sen. Amy Klobuchar of Minnesota) to not come out against Twin Metals. While most Republicans support copper-nickel mining as they do fossil fuels, Democrats of the MN DFL are split between those who support PolyMet but not Twin Metals and those who support neither or both. Progressive Democrats who prefer environmental protections have sometimes pushed back against the DFL party establishment, which is more supportive of mining, by running primary campaigns against pro-mining Democrats. But they have also submitted to party leaders by dropping progressive resolutions and reluctantly endorsing pro-mining candidates like US Sens. Klobuchar and Tina Smith, whose campaign contributors include mining companies. Members of all these groups exhibit a wide variety of priorities and allegiances, and many on both sides receive campaign contributions from mining companies and special interests. Additionally, some oversee the regulation of the very same industries in which they have directed the investment of millions of dollars.

Conservationists consistently express their lack of confidence in the political system of the state (MP, 02/23/2018; TJ, 05/09/2018), such as *Timberjay* editor Marshall Helmberger, who said the system is “rigged” by “well-connected” special interests (TJ, 07/19/2017; TJ,

06/06/2018). Even former DNR Commissioner Tom Landwehr accused the agency under Gov. Walz of deliberately hiding from the “complicated, controversial” issue of hard rock mining (ST, 01/18/2020a). Conservatives, on the other hand, mistrust politicians in their own way, like the *Ely Echo*, which advocates for enhanced freedoms for corporate interests and lambasts the “travesty” of Democrats’ executive actions to oppose Twin Metals (EE, 03/13/2016; EE, 12/25/2016; EE, 01/02/2017). Despite these differences, all people of the Iron Range are said to take pride in the region’s “vaunted political clout” (TJ, 04/27/2018), where a unique political landscape has reportedly “scrambled an issue that defies easy partisan categorization” (MP, 09/15/2017).

DFL Dividing.

Most actors are aware of the unique nature of northern Minnesota’s political history and the growing divide between conservatives and liberals within the Democratic Farmer-Labor Party of Minnesota (DFL) (EE, 03/18/2016b), which runs “more along urban-rural lines than red-blue ones” (MP, 09/15/2017), leaving rural communities to “feel left behind” by some of their “metro counterparts who seem to mistrust them” (ST, 12/31/2019). Many wonder if Republicans or progressive Democrats will one day take power from pro-mining DFLers of the Iron Range for the first time in modern history (TJ, 08/21/2014; MP, 04/14/2015; MP, 11/12/2015; TJ, 11/29/2017; TJ, 03/08/2018a; MP, 03/16/2018; ST, 08/03/2020). Despite the DFL’s “crushing victories” that swept the MN House, US Senate, and MN Gubernatorial elections in 2018, US Rep. Pete Stauber’s victory was just the second time in 75 years that a Republican would represent the Iron Range in Congress — thereby reportedly giving the DFL’s “Blue wave... a Red tint” (EE, 11/09/2018). Furthermore, the *Ely Echo* challenged pro-mining

DFLer Rick Nolan to go further in his support, predicting that his attempt to “please both sides” could backfire (EE, 11/19/2017).

Independent journalist Aaron Brown draws attention to the region’s “bar-stool independents... frustrated folks who aren’t getting what they want from the Democrats, but... haven’t forgotten what was taken from them when Republicans had power” (MP, 06/13/2014). Some voted for Obama twice, before drifting over to the populist, pro-mining rhetoric of Trump (NYT, 09/15/2018). One Republican state House member said voters care most about economic realities, asking, “Do they have a paycheck? Are they doing better than they did last year?” (ST, 03/02/2019)

In 2016, the MN Legislature authorized a 26-week extension of unemployment benefits to laid-off iron miners, and both Democrats and Republicans agreed it was “about time” (ST, 03/24/2016; MP, 03/25/2016). Minnesota House Speaker Kurt Daudt (R) had been holding out to insert a “toothless” resolution stating the Legislature’s support of mining, but he retracted the statement and allowed the bill to pass, celebrating his decision to “show some leadership and be the adult” (ST, 03/24/2016), while blaming Democrats for delaying the process (MP, 03/25/2016). Despite this conflict, legislators were reportedly “optimistic” about collaborating in the future, though their decision only tabled the emotional debate for another day (ST, 03/24/2016). Although most were pleased that “help is on the way” (MP, 03/25/2016), the *Los Angeles Times* noted that the unemployment aid did not apply to those who lost non-mining jobs in the community (LAT, 03/13/2016).

Although other moments of “optimistic” collaboration between political parties are described in sampled news coverage, they are rare (EE, 02/14/2017). One of the last joint state

Senate-House hearings on mining controversies reportedly happened in 2008 (MP, 01/24/2008), and figures like former Gov. Arne Carlson (R) have since criticized the lack of transparency in the PolyMet permitting process, accusing both sides of failing to schedule more legislative hearings out of political expediency (ST, 09/23/2019). Some cynically note how state lawmakers were more than eager to hold such hearings about the controversial re-naming of a small lake in the Twin Cities, but they have not held a single public hearing on copper-nickel mining in more than a decade (ST, 06/21/2019; ST, 08/13/2019; MP, 12/06/2019).

Minnesota Governors.

Gov. Mark Dayton consistently supported PolyMet but not Twin Metals (EE, 04/09/2016). While he established a legacy of challenging Republicans with his controversial actions to reduce the amount of agriculture fertilizer runoff into state waterways (MP, 05/07/2015), he also “stunned” Democrats by stripping the MN Historical Society of its independent ability to oversee the preservation of cultural resources, accusing the group of using “stall tactics” to delay PolyMet’s construction — a claim vigorously disputed by Ojibwe leaders and the society itself (ST, 04/24/2017; ST, 03/13/2018).

Before the 2018 elections (during which Dayton chose not to seek reelection), the DFL had trouble selecting a candidate with the best message on mining; many seeking nominations avoided the topic to focus instead on progressive policies like Medicare for All (MP, 08/01/2018; NYT, 09/15/2018). Days before the election and weeks after Gov. Dayton signaled his personal approval of PolyMet, the DNR granted PolyMet’s final approval, reportedly signaling to voters that another Democratic administration under Tim Walz would also support mining, despite the criticisms of conservationists (ST, 10/24/2017; ST, 11/01/2018; MP,

11/02/2018). Like most other state Democrats, both Dayton and Walz have generally approved of PolyMet, while signaling opposition to Twin Metals (TJ, 04/02/2016; EE, 01/01/2017; EE, 02/14/2017; TJ, 10/25/2017; EE, 10/27/2017; MP, 11/19/2018; MP, 12/21/2018; TJ, 11/22/2019). But Walz goes further in advocating for the progressive awareness of climate change and renewable energy (ST, 09/23/2019). He reportedly won the DFL primary and general election by claiming to support science, promising not to overuse executive powers, and refusing to take a hard stance against hard rock mining (TJ, 03/08/2018a; ST, 08/18/2018; ST, 11/01/2018; MP, 11/02/2018; ST, 01/04/2020).

When Walz came into office, he replaced Dayton's agency heads, which came as a surprise to former DNR Commissioner Tom Landwehr, who had expected to keep his job (MP, 03/19/2019). Instead, Walz selected former MN mayor and conservationist Sarah Strommen to lead the DNR, what one DFL lawmaker called "the most hated place to be in any state government anywhere in the country" (MP, 03/13/2019), and a former Best Buy executive as head of the MPCA — choices that seemed to earn bipartisan approval (MP, 12/21/2018; MP, 01/04/2019; ST, 03/16/2019), but not from the *Mesabi Daily News* or the *Ely Echo* (EE, 03/09/2019). Walz's two chiefs of staff, however, reportedly used to work for a PolyMet law firm — a choice criticized by conservationists (MP, 12/06/2019).

Progressive Challenges.

In 2016, a Cook County Commissioner proposed a non-binding resolution to support Gov. Dayton's opposition to mining near the Boundary Waters, about which state Senate majority leader Tom Bakk (DFL) expressed concern that the Iron Range Resources and Rehabilitation Board (IRRRB) might retaliate by reducing its property tax relief funding to Cook

County — a reaction some described as deliberately “intimidating” (ST, 03/15/2016). The *Star Tribune* editorial board, however, defended Bakk’s “friendly advice,” concluding that he would never intentionally support the defunding of his own constituents, while acknowledging that the temporary nature of the IRRRB’s funding capacity is indeed a serious limitation to all communities that rely on mining economies (ST, 04/18/2016). But after local business leaders expressed their disapproval of the resolution, the “commissioners quickly dropped the idea” (ST, 04/15/2016).

When US Sen. Tina Smith (DFL) was appointed to replace Sen. Al Franken (DFL) after his resignation, she reportedly “stopped short of giving PolyMet a blanket endorsement” but still worked to ensure its land exchange with the USFS (EE, 04/14/2018; MP, 06/13/2018; MP, 06/15/2018). In preparing for her first election, Smith faced criticism from environment Democrat Molly Parker Hoof for having accepted campaign contributions from PolyMet, behavior Parker Hoof said she would expect from “Republicans, but not Democrats” (ST, 06/15/2018). Another Smith primary challenge came from former Republican attorney and professor Richard Painter, who railed against President Trump and the billionaire investors behind Minnesota’s hard rock mining proposals (MP, 06/13/2018; TJ, 07/11/2018). He accused DFL “party bosses” of having “split the baby” by supporting PolyMet while signaling opposition to Twin Metals (TJ, 05/09/2018; EE, 07/18/2018). On the other hand, Smith’s GOP opponent said Smith did not “truly have miners’ interests at heart” (MP, 06/13/2018).

In another 2018 “rebellion” against DFL leadership, Iron Range lawmakers only “narrowly convinced” environment Democrats in Duluth to rescind their resolution refusing to support the party’s endorsed US Senate candidates Klobuchar and Smith, due to their support

of and financial contributions from PolyMet (TJ, 07/19/2018). Additionally, other conservationists criticized Duluth Mayor Emily Larson for failing to join a neighboring town in passing a resolution stating its opposition to mining near the Boundary Waters (MP, 02/23/2018). Other primary challengers in 2020 from progressive candidates reportedly expose “a deepening divide inside the DFL” between establishment DFL figures like Gov. Walz, who call themselves “realists, not purists,” and progressives who accuse party leadership of “cognitive dissonance” with their members (ST, 08/03/2020).

2016 Presidential Election.

After a “wake up call” election in 2016 that saw a Republican candidate for president win over Iron Range voters for the first time in decades (MP, 03/16/2018), DFL party leadership decided to put off their discussion of copper-nickel mining, because, as one DFL state representative said, “Democrats fighting among ourselves is not a good thing” (ST, 12/08/2016). Although Trump’s election “was hardly a referendum on copper-nickel mining,” the *Ely Echo* said his resounding victory in the Iron Range has sent “political shockwaves” through the fracturing DFL, claiming that “not a single candidate” for public office who did not support Twin Metals and PolyMet was elected that year (EE, 11/26/2016).

Some journalists said Trump won the unprecedented victory in the Iron Range due to miners’ opposition to Hillary Clinton’s campaign promise to “put a lot of coal miners and coal companies out of business,” comments some reportedly called “evidence of a Democratic Party pandering to a radical, politically correct environmental fringe” (NYT, 10/12/2017). Though some were not sure if Trump would do good for the Range, one cautious supporter said after his 2016 election, “Now... at least we have hope” (MP, 01/20/2017).

Trump's government appointees initially received mixed reviews in sampled news coverage, such as New York billionaire Wilbur Ross as Secretary of Commerce, who has been responsible for the overseas outsourcing of 2,700 US jobs during his career (MP, 01/20/2017), and the reportedly disgraced former Wisconsin DNR Commissioner Cathy Stepp as head of the EPA's Great Lakes division, who would go on to be involved in the PolyMet's MPCA permitting scandal described later (TJ, 02/06/2019; TJ, 06/26/2019a).

Obama's Lame Duck Decisions.

In Obama's final weeks in office, news outlets covered his decisions to block Twin Metals' leases and initiate a two-year USFS study on the Boundary Waters, adopting the binary narrative frame and calling them a victory for environmentalists and an offense to mining advocates; some agreed it was not "clear" whether Trump would be able to reverse the decision, but the *Washington Post* argued the opposite and correctly predicted that "any unilateral termination of the review would likely prompt a backlash from activists" (WSJ, 12/15/2016; WP, 12/16/2016). While some conservationists agreed it was a victory, others "cautioned" they had much more work to do (WP, 12/16/2016; MP, 09/15/2017; NYT, 08/31/2019). Conservatives decried the moves as "spiteful" (MP, 01/20/2017), and the *Ely Echo* called them a "blunder of epic proportions" for galvanizing resistance to environmental movements (EE, 12/25/2016; EE, 07/12/2019).

When Trump completed his reversal of Obama's mining decisions a year later, "enthused" conservatives cheered and "enraged" conservationists like Gov. Dayton called the reversal "a disgrace" (ST, 12/23/2017; WP, 12/25/2017; EE, 12/29/2017; ST, 06/25/2018; MP, 12/21/2018). One such critic is former DNR Commissioner Tom Landwehr, who repeatedly

expressed “outrage” and disappointment that Trump sought to reverse Obama’s executive decisions (TJ, 03/05/2019; ST, 05/15/2019; TJ, 05/23/2019; ST, 06/26/2019; TJ, 12/18/2019a). News outlets, however, were less surprised at Trump’s reversal, like the *Star Tribune* editorial board, who called it “troubling” but “a shock to no one,” nevertheless framing it as another jubilant victory for one side of the debate and an existential defeat for the other (ST, 12/27/2017; TJ, 09/06/2018a; ST, 09/10/2018).

Trump’s Environmental Legacy.

Whereas President Obama seemed supportive of PolyMet but not Twin Metals, President Trump claimed to support them both. Regarding the federal enforcement of environmental laws, the two administrations were opposites, with Obama instituting a number of policies — like the Clean Water Act, certain wilderness protections, and the Paris climate accord — and Trump reversing many of them and eliminating even more (WSJ, 12/15/2016; MP, 01/20/2017; WP, 05/12/2017; ST, 12/23/2017; MP, 11/21/2018; MP, 04/12/2019; TJ, 04/25/2019a; MP, 08/30/2019; NYT, 08/31/2019; ST, 11/23/2019a; ST, 01/13/2020; ST, 04/25/2020).

Conservationists and news outlets excluding the *Ely Echo* consistently criticize Trump’s legacy of diminishing scientific studies and environmental protections (EE, 01/01/2017; WP, 05/12/2017; TJ, 05/17/2017; WP, 01/26/2018; ST, 01/26/2018; EE, 02/06/2018; MP, 12/06/2018; ST, 12/20/2018; MP, 04/12/2019; TJ, 05/04/2019; NYT, 08/31/2019). *Timberjay* editor Marshall Helmberger, for one, says Trump “simply cannot be trusted to protect the environment” (TJ, 11/25/2019). Some of his administration’s changes include discontinuing a proposal that would have increased requirements of financial assurance for industrial projects

(TJ, 12/27/2017), reducing the EPA's enforcement of pollution violations by 80% in his first year (TJ, 02/06/2019), and generally ordering federal agencies to defer to state regulators for pollution control (TJ, 02/21/2019a). Obama also received criticism from conservationists for withdrawing certain environmental laws (WSJ, 12/15/2011) and failing to meet a deadline set by a federal judge to "fulfill a 30-year-old obligation to create rules for financial protections for mines" that would have pre-empted Minnesota law (ST, 03/03/2016). Additionally, Trump, for his part, approved a few mining moratoriums to protect federal land near Yellowstone National Park and Washington state's Methow Valley (MP, 10/23/2019).

These decisions indicate that the issue is not so simply two-sided as many believe. While most conservatives celebrated Trump for what they call his "willingness to lift the regulatory burden" on mining industries, not all have approved of his actions, like Nancy Norr of Up North Jobs, who criticized Trump for fueling polarization of the controversy in a way that she said "tends to make people feel like shortcuts are being taken when they're not" (MP, 06/20/2019). In fact, near the end of Trump's term, local outlets covered a New York University study that showed Trump had "lost roughly 95%" of court cases filed against his administration for violating procedural decision-making rules, far more than most other presidents (ST, 04/17/2019a; TJ, 04/25/2019a).

2020 Presidential Race.

Minnesota mining reached the radar of presidential candidates after the Boundary Waters Action Fund traveled to Iowa to lobby Democrats ahead of the state's caucus. US Sen. Elizabeth Warren was the first to announce her opposition to Twin Metals, which one of the project's supporters said, "pisses me off," because the company had not yet submitted a formal

mining plan (MP, 08/20/2019; ST, 08/20/2019). Next, the other Democratic candidates also announced their opposition, with the notable exceptions of Joe Biden and Amy Klobuchar (MP, 10/16/2019; MP, 12/18/2019b; ST, 02/19/2020).

Klobuchar identifies as a “Heartland Democrat... the granddaughter of an iron ore miner” and appeals to conservatives by supporting PolyMet since at least 2008 (MP, 06/20/2019; MP, 10/16/2019). At the same time, she consistently avoids taking a public stance on Twin Metals, so as not to draw the ire of either side of the debate (MP, 05/16/2019). Her other conflicting associations include supporting Enbridge’s Line 3 pipeline and speeding up federal mine permit reviews, while also convincing the Obama Administration to impose successful steel tariffs on China and earning praise from wildlife and climate activists for some of her progressive views (ST, 08/06/2019). Nevertheless, many conservationists and the *Star Tribune* editorial board agreed her “failure to respond (to Twin Metals) reflects poorly” on her presidential bid (ST, 01/17/2020a).

To complicate her campaign further, the Trump Administration leaked an Obama-era email to a *Wall Street Journal* columnist who revealed Klobuchar’s 2016 criticisms against Obama’s decision to cancel Twin Metals’ mineral leases, predicting, “Trump will reverse this... I will be left with the mess,” arguing that the federal government’s behavior on mining issues is partly “why we have the Trump administration to begin with” (WSJ, 06/07/2019; TJ, 06/13/2019a; EE, 07/12/2019). While the conservative WSJ columnist argued that Klobuchar’s critiques should invalidate all future accusations of corruption from “the left” (WSJ, 06/07/2019), other mining supporters called the leaked statements “evidence that the Obama Administration decision was (an) unjust and politically motivated... scandal-plagued land grab”

(EE, 07/12/2019). Klobuchar’s staff were reportedly “quick to respond,” saying the senator “feared that (Obama’s) strategy would actually politicize the project and decrease the possibility of it getting a good and fair scientific review” (TJ, 06/13/2019; MP, 06/20/2019).

President Trump, meanwhile, continually campaigned by supporting pro-mining Minnesota lawmakers who had spent his entire term working to advance both Twin Metals and PolyMet (MP, 01/20/2017; TJ, 09/08/2017; MP, 09/15/2017; WSJ, 12/23/2017; MP, 03/16/2018; NYT, 09/15/2018). During one of his campaign rallies in northern Minnesota, Trump said, “I’ll never forget, a man came up to me and said, ‘Sir, you saved our way of life... by opening up the Iron Range’” (MP, 10/16/2019). Furthermore, he claimed his actions meant the Range was now “doing fantastically” — a statement that even his conservative supporters would likely agree was premature (MP, 10/16/2019).

Events

At the heart of the controversy are two mining proposals from PolyMet and Twin Metals. Each has embarked on a lengthy, multifaceted endeavor to approve their proposals and attain permits to mine. While previous sections have defined the actor groups involved and described the associations between them, this section concisely explains the government approval processes engaged in by each company and the main submissions, authorizations, and challenges they have faced along the way. Readers should expect to learn how these approval processes are portrayed by sampled news media.

Arranged in order of general significance for coherent retelling, the sub-sections below are chronological accounts unto themselves dedicated to their respective subjects. As is apparent in the stories of both PolyMet and Twin Metals, the review process is complicated,

and even the most dedicated readers of any of the sampled news outlets can be forgiven for getting confused. Thus, this section has done the work to provide a concise account of the newsworthy approval processes. This chronology is the foundation upon which controversial arguments develop.

PolyMet Approval Process

PolyMet’s approval process has entailed a complex series of authorizations and critiques from courts and state and federal agencies lasting many years (EE, 01/05/2018). As the first copper-nickel mine in the state, it would likely establish precedents that could influence the consideration of future mining proposals. The sub-sections below describe most of the specific challenges faced by PolyMet so far, as portrayed by sampled coverage. These include the approval of its environmental impact statement, its finalization of a controversial land exchange with the USFS of the Obama Administration, and its approval of permits regarding wetlands, dam safety, and air and water pollution — some of which are contested and under further review today.

Environmental Impact Statement.

Environmental impact statements (EIS) are lengthy documents intended to assess the likely ecological effects of large industrial projects. They require approvals from both state and federal regulators. As the DNR granted its final approval of PolyMet’s EIS in 2016, DNR Commissioner Tom Landwehr said the company’s “thoughtful” mining proposal met state safety standards and would “actually improve the quality of water coming from the site” (ST, 11/10/2015; ST, 03/03/2016; EE, 03/03/2016; MP, 03/04/2016). While conservatives rejoiced (ST, 03/11/2016b), conservationists criticized the approved EIS for failing to address the

potential effects on human health nor requiring the company to guarantee financial assurance in the case of the project's failure (MP, 05/21/2014; MP, 12/11/2015; MP, 03/04/2016; MP, 06/30/2016).

In the EPA's approval, the federal government noted that questions regarding the impact on wetlands, wildlife, and groundwater would be answered by state agencies during the upcoming permitting process (ST, 12/22/2015; TJ, 03/04/2016). Then days before leaving office, President Obama's USFS granted its approval of the EIS, which the *Timberjay* described as the second major "green light" kicking off the multi-agency permitting process (TJ, 01/12/2017). When PolyMet announced changes to its approved mining plan, conservationists claimed it was a "bait-and-switch" intended to reduce costs at the expense of safety (TJ, 07/03/2017). Another proposed change would require using a pipeline to annually transport 3.7 billion gallons of toxic water nine miles from the mine site to a water treatment plant, which the DNR assured is "less than meets the eye" in terms of risk, deferring to federal agencies to judge the appropriateness of the change in the upcoming permitting process (TJ, 07/03/2017; TJ, 08/23/2017).

DNR Permit to Mine.

PolyMet submitted its permit to mine application to the DNR days before the 2016 election (ST, 11/03/2016; TJ, 11/09/2016; EE, 11/11/2016), and by early 2018, DNR Commissioner Tom Landwehr again commended the company's proposal, saying, it was "sad to say" that despite the "big milestone... we are nowhere near done" (ST, 01/05/2018; TJ, 01/10/2018b; ST, 03/02/2018; TJ, 03/08/2018b). While conservatives boasted the proposal as "one of the most comprehensive documents ever seen" (EE, 02/12/2018), conservationists criticized it for leaving many important questions unanswered, as did the EIS (ST, 03/09/2016;

TJ, 12/21/2017; EE, 01/05/2018b; EE, 12/14/2018). Then just days before the 2018 midterm elections, Gov. Dayton’s DNR denied conservationists’ challenges and issued PolyMet’s final permit to mine in a “surprise” announcement (ST, 11/01/2018; TJ, 11/01/2018b; ST, 11/08/2018; EE, 11/01/2018).

Army Corps of Engineers Authorizations.

Other federal approvals needed by PolyMet come from the Army Corps of Engineers. Citing risks to wetlands and wildlife, conservationists have argued that the Corps not grant PolyMet its approval and wetlands restoration permit (TJ, 10/10/2018). But the Trump Administration did so in 2019 (ST, 03/22/2019; TJ, 03/22/2019; EE, 03/22/2019a), and conservationists and the Fond du Lac Band of Chippewa, who had been “met with silence” from federal agencies for years regarding their concerns, filed lawsuits against it for allegedly violating federal laws (ST, 09/11/2019). By 2020, the appeal was being conducted in federal district court (ST, 03/23/2020).

DNR Dam Permit.

In 2016 and 2017, PolyMet submitted applications to the DNR for its dam permit and public water works permit, which the *Ely Echo* celebrated as comprehensive documents (EE, 09/16/2017). Conservationists have consistently argued against the “upstream” dam plan and petitioned the DNR to require more stringent review or alternative methods of waste management (ST, 09/29/2017; ST, 01/18/2018; TJ, 02/09/2019; MP, 08/13/2019; MP, 08/30/2019). But the agency declined, sharing its “confidence” in the approved plan, in agreement with conservative lawmakers (ST, 08/07/2019c; TJ, 08/15/2019; WSJ, 10/15/2019).

USFS Land Exchange.

Before PolyMet could mine at its intended site, it reportedly needed to acquire nearly 7,000 acres of federal land in the Superior National Forest, where it expects to drawdown about 1,000 acres of wetlands and, to a lesser extent, damage up to 8,000 more (MP, 05/24/2018; MP, 11/30/2018). According to the Weeks Act and the Federal Land Policy Management Act, PolyMet could not simply purchase the public land, but, rather, replace it with equal number of privately-owned acres in the vicinity (TJ, 04/20/2016; TJ, 03/15/2017; TJ, 06/13/2018). PolyMet had been seeking to finalize such a land exchange since at least 2008, but it did not happen until the final days of the Obama Administration, when the USFS finally approved it (EE, 01/09/2017; ST, 01/09/2017; ST, 01/10/2017; TJ, 01/12/2017; ST, 01/31/2017).

Soon after, conservationists succeeded in obtaining long-sought land appraisal documents that revealed the federal government had arguably traded the land at an illegally low value, classifying it as cheaper timber land instead of mining land (ST, 03/27/2017). Furthermore, PolyMet consistently reduced its estimates of wetland loss by reportedly misclassifying “fen” peatlands as “raised bogs” that would not be impacted by ground water — a claim disputed by independent scientists (MP, 05/24/2018; MP, 11/30/2018). This way, PolyMet was required to purchase and exchange less land with the federal government, while reducing its debt to the state’s Board of Water and Soil Resources wetland credit system (MP, 05/24/2018). For more than two years, the Obama Administration had denied or ignored Freedom of Information Act requests from journalists and activists to release the details of the land appraisal, even after the exchange was finalized (TJ, 02/04/2017; TJ, 03/15/2017; TJ, 03/29/2017). As some environmentalists filed a lawsuit against the land evaluation, *Timberjay*

editor Marshall Helmberger argued “PolyMet officials should be livid” at the “banana peel” land swap, which “could quickly turn a sweetheart deal into a very costly fiasco” if they were required to renegotiate it (TJ, 03/16/2017).

By the end of Trump’s first year in office, bipartisan pro-mining US House members passed a bill to nullify the outstanding lawsuits against the land exchange and eliminate the \$425,000 “equalization payment” that the USFS had intended to give PolyMet in addition to the agreed upon trade (TJ, 07/05/2017; EE, 07/11/2017; MP, 07/28/2017; ST, 11/29/2017; TJ, 11/29/2017; MP, 12/12/2017; EE, 12/01/2017). The *Ely Echo* did not report on the Obama Administration’s land evaluation at the center of the scandal, but rather they emphasized the “12 years of scrupulous review” that justified their support of the exchange enshrinement bill (EE, 07/21/2017).

In 2018, Sens. Smith and Klobuchar “quietly” proposed and passed companion legislation in the Senate as a rider to a federal spending bill, as they argued there was nothing inappropriate about the “trivial” USFS land evaluation, which, they noted, had been approved by Obama (MP, 06/13/2018; ST, 03/13/2018; TJ, 06/14/2018; EE, 06/14/2018; ST, 06/15/2018; TJ, 06/20/2018; EE, 06/28/2018). However, Democrats on the joint Senate-House committee responsible for approving the government’s final spending bill took credit for eliminating the “toxic” land exchange enshrinement rider — a “defeat” for Sen. Smith, who “expressed disappointment” over the “considerable heat” she had taken from conservationists over the futile gesture to support PolyMet, soon before her election against a GOP candidate critical of Smith’s so-called “thinly-veiled political pandering” (TJ, 07/24/2018; TJ, 07/25/2018).

In 2019, a federal judge dismissed all the lawsuits against the land exchange anyway, on the grounds that those who filed them could not prove they were directly “harmed” by the proposed mine (TJ, 10/02/2019a). While PolyMet repeatedly expressed its entitlement to finally gain “exclusive control... over our ore body” (EE, 06/14/2018; EE, 06/28/2018), conservationists argued that both the Obama and Trump Administrations have gotten away with violating the Weeks Act, which is reportedly supposed to prohibit open-pit mining methods on land acquired through it (MP, 06/15/2018). Whereas *Timberjay* editor Marshall Helmberger blames the Obama Administration for giving PolyMet “what it wanted... rather than defend the Weeks Act in court” (TJ, 06/14/2018), others believe Obama “never really supported” the land exchange but rather “knuckled under to PolyMet’s threats” of litigation (TJ, 06/13/2018). While the *MinnPost* criticized Klobuchar for being secretive about her opinions on the dramatic land exchange story (MP, 06/20/2019), her support for it should not come as a surprise to the same publication that reported on her efforts to help PolyMet “force a land sale” more than 10 years before, shortly after she became a US senator (MP, 10/06/2008).

MPCA-EPA Air & Water Quality Permits.

Just before Gov. Walz assumed power in 2018, the MPCA under Gov. Dayton granted PolyMet’s water quality permit, air quality permit, and draft Section 401 Certification (EE, 01/18/2018; EE, 01/24/2018; EE, 01/31/2018; EE, 12/23/2018), which environmentalists filed lawsuits against over their failure to establish toxicity limits on sulfate, one of the main potential pollutants of hard rock mining (TJ, 01/24/2019). The next year, information requests from activists and news outlets and documents leaked by federal whistleblowers suggested the MPCA and EPA had worked together to prevent the criticisms of state scientists from being

made accessible to the public before the comment period preceding the permits' approvals (TJ, 01/16/2019). While the EPA told conservationists they had to pay up to \$10,000 just to get the government to search for the comments, the MPCA offered them free of charge with notes detailing the EPA's efforts to delay the release of the state's concerns — allegations initially denied by MPCA leadership (TJ, 02/06/2019; ST, 02/06/2019). Other information requests about the MPCA-EPA permitting process were similarly ignored or delayed, with excuses from the agencies that, since the comments in question were in "draft form," they were not required to be released (TJ, 02/21/2019; TJ, 02/24/2019; TJ, 02/28/2019a; TJ, 04/25/2019b; ST, 06/20/2019).

The MPCA insisted it did nothing wrong, while simultaneously promising to "work on being more transparent in the future" (MP, 06/21/2019) — claims that did not satisfy conservationists (TJ, 06/12/2019; MP, 06/14/2019; TJ, 06/20/2019a; ST, 06/20/2019; TJ, 06/26/2019a). Despite his continued confidence that his agency acted appropriately (MP, 08/12/2019), Gov. Walz nonetheless announced promises to set stricter standards on state employees for recording information for the public (ST, 06/21/2019; ST, 06/24/2019a; TJ, 06/26/2019a).

Facing pressure from conservationists, Gov. Walz and MN Attorney General Keith Ellison announced an investigation by the state legislative auditor to scrutinize the MPCA's role in the potential scandal, focused solely on the process by which the permit was written — not the permit's final decisions (TJ, 06/19/2019; TJ, 06/20/2019b; ST, 06/21/2019; ST, 06/28/2019; MP, 07/11/2019; ST, 07/25/2019). Meanwhile, Trump's EPA announced an investigation into the agency's role in the permitting process (TJ, 06/13/2019b; TJ, 06/20/2019b), later expanding its

probe to include its permit approvals in other states — a move that conservationists said meant the investigation had begun to uncover evidence of serious problems (ST, 09/09/2019; TJ, 09/18/2019; ST, 01/20/2020).

One day after the state announced its investigation, the MN Court of Appeals agreed to temporarily suspend PolyMet’s MPCA permits and conduct its own hearing on the lawsuits against the permitting process — a decision news outlets called a “huge win” for conservationists, while PolyMet reportedly “downplayed the significance” of the ruling and conservative lawmakers “vigorously defended the MPCA” by claiming activists were mischaracterizing the review process (ST, 06/24/2019b; ST, 06/25/2019; TJ, 06/26/2019a; TJ, 06/27/2019b; MP, 07/11/2019; TJ, 08/06/2019; ST, 08/07/2019a; ST, 08/07/2019c; ST, 08/07/2019d; TJ, 08/15/2019; MP, 01/14/2020).

Before the multi-day trial-esque hearing, another batch of leaked emails implicated former MPCA Commissioner John Linc Stine as being directly involved in hiding the comments (ST, 09/13/2019; TJ, 09/13/2019). Following this, the Ramsey County District Court Judge John Guthmann “ordered an independent forensic investigation” of the MPCA’s computers, seeking more information about the agencies’ communication (TJ, 11/20/2019).

Nearly all sampled local outlets covered the hearing in detail. First, MPCA officials admitted to deleting potentially incriminating emails off its former chief’s computer before destroying the computer entirely — an act the *Star Tribune* called a violation of the agency’s own document retention protocol (ST, 01/21/2020b). Next, the former chief of water quality permits at the EPA (the original whistleblower) claimed he was ordered to hide the state’s concerns from the public comment period to avoid “a good deal of press” (MP, 01/22/2020).

Initially, MPCA Commissioner Stine denied discussing PolyMet with the EPA at all, but he admitted otherwise under oath, though he still defended the actions as standard practice (ST, 01/23/2020a; ST, 01/23/2020b). Former MPCA Assistant Commissioner Shannon Lotthammer (who transferred to working for the DNR after Tim Walz became governor) also testified, admitting that, despite her previous statements to the contrary, she requested the EPA via email to “consider holding off on comments on the public notice draft,” then she deleted the email despite its “unique and unusual, one-of-a-kind request” that memorialized a special arrangement between the two agencies — essentially performing a forbidden “preproposal permit” review to which the public was not privy (ST, 01/25/2020; MP, 01/28/2020).

Conservatives celebrated the permit approval and dismissed the potential scandal as “hogwash” (MP, 12/21/2018; EE, 12/23/2018; ST, 08/07/2019a). While the *Ely Echo* lauded the permit for establishing “specific limits” to prevent the contamination of waterways, they do not mention that these “specific limits” do not include any limits on several contaminants associated with hard rock mining, including sulfate (EE, 01/18/2018; EE, 01/24/2018). Meanwhile, conservationists, including *Timberjay* editor Marshall Helmberger, were predictably “alarmed” about the allegations of transparency violations (TJ, 02/21/2019a; MP, 06/21/2019; TJ, 08/06/2019; MP, 08/30/2019; TJ, 01/29/2020).

Investor Support.

As a “junior” mining company that has never operated a mine before, PolyMet is described by many news outlets as primarily motivated not to begin mining but, first, to “win the permits,” after which a more experienced company could get involved to bring the mine to production and make it profitable for investors (MP, 01/16/2015; TJ, 03/04/2016; ST,

03/06/2016; ST, 06/29/2019). After predicting in 2008 that it would need more than a 30% rate of return to achieve financial viability, PolyMet estimated later that its rate of return, even with slightly improved metals prices, would still be less than 10% (TJ, 03/28/2018). News outlets routinely call PolyMet's stock value "muted" (TJ, 01/16/2020), suffering "historic" (TJ, 09/07/2017) "all-time" (TJ, 07/05/2017) "14-year" lows (ST, 06/24/2019b) due to investor hesitancy and the generally poor state of the international metals market (ST, 11/10/2015; TJ, 03/04/2016; TJ, 12/21/2017; TJ, 03/28/2018). Only in the wake of permitting milestones does PolyMet's stock price ever experience "momentary" improvements (TJ, 07/05/2017; TJ, 09/07/2017; TJ, 01/10/2018a; TJ, 03/22/2019).

Glencore, on the other hand, is one the world's largest commodity traders and owns hard rock mines around the world (TJ, 04/03/2019; TJ, 06/27/2019a). In the words of one conservationist, PolyMet would be a tiny portion of Glencore's portfolio and "barely a bug on the windshield of the global copper market" (MP, 09/11/2019). In fact, Glencore has a record of reducing or ceasing the production capacity at its own mines to increase the price of metals on the international market (ST, 08/07/2019b), as it did in 2016 when it reportedly closed a mine that produced 14 times as much ore as PolyMet is ever expected to (ST, 03/06/2016). As one conservationist argued, "that will have to come back before... PolyMet will ever come on line" (TJ, 11/21/2016).

Some conservationists have wondered if PolyMet intended to sell the project once it obtained its mining permits (MP, 12/04/2008; MP, 01/16/2015) or if Glencore would delay operations until the international metals markets improved (MP, 04/15/2015; TJ, 02/03/2016; ST, 03/06/2016; TJ, 11/21/2016; TJ, 06/27/2019a; MP, 06/28/2019). One PolyMet executive did

not rule out either possibility in 2008, saying, “as a publicly-traded company... as you know, anything can happen” (MP, 12/04/2008). Eleven years later, PolyMet still said they “won’t speculate” on whether Glencore would pay for the mine’s construction, while teasing the possibility that they could (ST, 06/24/2019b; TJ, 06/27/2019a).

For years, sampled news outlets reported on Glencore’s increasing investments in PolyMet (MP, 10/20/2008; MP, 12/04/2008; WSJ, 11/17/2010; MP, 03/24/2014; ST, 03/06/2016; TJ, 04/20/2016; ST, 06/16/2016; TJ, 03/28/2018; TJ, 03/22/2019; ST, 03/19/2020), which often occurred just before or after milestones in the company’s permitting process, such as the submission of its permit to mine application (ST, 11/03/2016). Finally, citing documents required of PolyMet by the Canadian government, news outlets began to say it was apparent that Glencore “may end up” with majority ownership (TJ, 04/03/2019; ST, 05/07/2019a), and in June 2019, it happened in a “takeover” share transaction that gave Glencore 71.7% ownership of PolyMet (TJ, 06/27/2019a; ST, 06/27/2019; MP, 06/28/2019). *Star Tribune* columnist Lee Schafer claimed the state should have predicted Glencore’s inevitable buyout of PolyMet when the companies’ first financial agreement was put in place (ST, 03/31/2018; ST, 06/29/2019). One conservationist even accused Gov. Walz of feigning surprise when Glencore finally did assume ownership (MP, 08/30/2019).

The *Ely Echo*, on the other hand, downplayed Glencore’s involvement, obscuring their coverage of the transaction in an unrelated article about PolyMet’s final permit approval, providing an opaque explanation that the “debt extension agreement” was merely a loan (EE, 03/22/2019a). While many conservatives believe that “having Glencore as a partner is the best thing (PolyMet has) going for them” (MP, 06/28/2019), such as Nany Norr of Jobs for

Minnesotans, who compared the buyout to “signing my daughter’s lease in Madison” (MP, 06/28/2019), conservationists have consistently argued the opposite (MP, 10/20/2008; ST, 07/13/2019). The *Timberjay*, for example, often frames PolyMet as bullied by Glencore for forcing “loan shark interest rates” on its loans (TJ, 02/03/2016) and negotiating its way to owning the rights to sell all the mined minerals, while boasting direct representation on PolyMet’s board of directors (TJ, 07/03/2018a).

Financial Assurance.

Since PolyMet first entered a relationship with Glencore in 2008, the question of financial assurance has been hotly debated — that is, how it will guarantee to pay for damages it may cause beyond the scope of its permits (MP, 01/24/2008; MP, 10/20/2008). While such agreements are reportedly highly effective when set up properly (ST, 05/13/2017), financial consultants hired by the state determined that PolyMet would be unlikely to provide adequate assurance against spills, mistakes, or bankruptcy that could leave the state with a pollution problem requiring expensive, perpetual remediation (ST, 01/18/2017). While PolyMet said it would not update its financial expectations again until the state granted its permits, Gov. Dayton’s DNR declined to perform further financial feasibility studies suggested by its own hired experts (TJ, 01/18/2017; TJ, 11/01/2018b; MP, 05/08/2019).

By the end of 2017, PolyMet offered to set aside \$544 million for financial assurances as bonds and lines of credit — \$200 million more than its previous offer, but still \$400 million less than the amount some conservationists suggested (ST, 12/13/2017; EE, 12/19/2017; TJ, 12/21/2017). But a week later, the DNR called the proposal inadequate and counter-offered with a total of more than \$1 billion (TJ, 12/27/2017; MP, 11/02/2018), to the pleasant surprise

of conservationists, who had not expected such a serious amount (MP, 05/08/2019). This figure is a far cry from the original \$70 million proposed by one conservation group in 2008 (MP, 01/24/2008), nor does it include the incalculable expense of perpetual water treatment after the mine's closure (ST, 05/13/2017; TJ, 01/10/2018a; MP, 05/08/2019). Nevertheless, some conservationists criticize the type of financial assurance the state has suggested; rather than setting aside cash, PolyMet "persuaded the DNR to rely on complex financial instruments" which may be impossible for banks to set up or enforce (MP, 05/08/2019).

Once Glencore assumed majority ownership of PolyMet, Gov. Walz faced pressure from conservationists to ask it to co-sign PolyMet's permits and sponsor its financial assurances, to which conservatives responded by accusing opponents of spreading misinformation and delaying the appropriate approval process (TJ, 07/25/2019a; ST, 07/25/2019a; ST, 07/25/2019b; ST, 06/27/2019; ST, 08/09/2019; ST, 08/12/2019; TJ, 08/15/2019; MP, 08/12/2019). Despite the "pretty firm" stance of Gov. Walz to require the co-signing, Glencore has not yet agreed to do so (TJ, 08/15/2019).

Potential Expansion Review.

One of the most controversial topics regarding PolyMet's approvals is the possibility that it could eventually request to expand the size of its proposed mine, thereby increasing both the profitability of the project and the amount of waste rock it would produce. In a 2018 filing required by Canadian law, PolyMet officials admitted its interest in tripling the size of its proposed mine, which they said would increase its rate of return to 24% (TJ, 03/28/2018; ST, 04/07/2018; ST, 11/08/2018). Though conservationists contended PolyMet had been planning the expansion from the beginning, the company insisted otherwise, defending the prospect by

noting that any expansion requests would have to undergo review by state and federal agencies (ST, 03/31/2018; TJ, 04/11/2018).

Environmentalists consistently call this strategy a “bait-and-switch” and argue that, by the time PolyMet officially requests an expansion, it will be too late for the state to reasonably decline (TJ, 12/21/2017; TJ, 11/01/2018b; ST, 11/08/2018; TJ, 11/15/2018; TJ, 12/21/2018a; TJ, 01/24/2019; TJ, 04/04/2019; MP, 05/08/2019). As the *Timberjay* explained, if “PolyMet begins operations and hires mine workers, the (DNR) would have little choice but to approve any expansion proposal... or face blame and potential political fallout for mining layoffs” (TJ, 10/11/2018). Similar delayed expansion strategies were reportedly involved in the Mt. Polley dam collapse in Canada and a deadly dam failure in Brazil (ST, 06/08/2018b).

Another option to achieve profitability PolyMet has considered includes increasing the rate of production, which would result in the 20-year expected lifetime of the mine being reduced to only five years of operation — thereby reducing the project’s long-term job creation potential (TJ, 03/28/2018). But PolyMet CEO Jon Cherry dismissed contentions that the project’s jobs would be short-term, once again teasing the possibility of tripling the size of the current proposal and extending the life of the mine (EE, 12/14/2018).

In 2018, the DNR rejected calls to review the effects of a potential expansion and granted PolyMet’s EIS (ST, 11/08/2018; MP, 11/02/2018), arguing there was no need for the state to concern itself with the mine’s potential profitability, because, in the words of DNR Commissioner Tom Landwehr, “That’s the subject that the market determines” (TJ, 04/04/2019). In their petition to the MN Court of Appeals to force the DNR to reconsider its approval of the EIS, conservationists additionally cited issues with PolyMet’s proposed dam and

the possibility of perpetual water treatment — concerns decried as a disingenuous attempt to delay the project by conservatives (ST, 12/03/2018; TJ, 10/04/2018).

Then, offering split decisions, the court announced “a victory for PolyMet” by ruling against requiring immediate review of PolyMet’s potential expansion (ST, 05/28/2019), while later giving a “win for environmentalists” by concluding they “raise serious, justifiable concerns” about the dam plan and financial assurance, suspending PolyMet’s permits and ordering the DNR to provide clarification on these points during a mandated contested case hearing (ST, 09/19/2019; TJ, 09/19/2019; WSJ, 10/15/2019; TJ, 10/23/2019; ST, 10/23/2019; ST, 10/24/2019; TJ, 10/30/2019b; TJ, 01/13/2020; ST, 01/14/2020; TJ, 01/29/2020; ST, 02/11/2020; ST, 03/23/2020). Immediately, PolyMet and the DNR announced their intention to appeal to the Minnesota Supreme Court to avoid the hearing (MP, 01/14/2020; ST, 01/17/2020a; TJ, 01/22/2020; MP, 01/24/2020; ST, 02/13/2020), and the state’s highest court agreed to take the case (ST, 03/25/2020; ST, 06/17/2020).

Twin Metals Approval Process

In its pursuit to build an underground mine on federal land near the Boundary Waters, Twin Metals has faced three main challenges, as portrayed by sampled coverage: submitting a mine plan, renewing its mineral leases, and deflecting a 2-year scientific study ordered by the USFS. The nature of all these challenges changed dramatically after the 2016 presidential election, and today they remain largely accomplished, despite the ongoing actions of many to counter them. Nevertheless, Twin Metals faces a long road ahead before it may begin the permitting process.

Mineral Lease Renewal.

In 1966, the federal government granted mineral leases near the Boundary Waters to the International Nickel mining company, which later sold them to Twin Metals on the government condition that future renewals would only be guaranteed if the company had started mining (TJ, 03/09/2016; TJ, 05/02/2018; ST, 05/03/2018). While considering the leases' third and final scheduled renewal, the company had not yet begun mining, and the Obama Administration decided it was not required to automatically renew them; then weeks before leaving office, Obama's BLM canceled them outright, forcing Twin Metals to face reapplication and updated reviews (ST, 03/08/2016; ST, 06/13/2016; EE, 06/19/2016; EE, 06/26/2016; WP, 12/16/2016; WSJ, 12/15/2016; EE, 03/01/2017; WP, 12/25/2017; TJ, 06/21/2018).

In response, Twin Metals filed a lawsuit against the government's decision claiming the "unlawful" moves "deprive Minnesota of hundreds of jobs and billions of dollars in environmentally responsible economic growth" (EE, 09/12/2016; ST, 09/13/2016; EE, 04/03/2017). The *Ely Echo* agreed the USFS had "taken aim" at Twin Metals (EE, 06/19/2016), claiming the agency's decision to seek public comment was a "travesty of trust" and "a sham from the word go" (EE, 06/26/2016), or what one conservative called a "charade of garbage" (EE, 07/28/2017). Furthermore, pro-mining lawmakers "narrowly" passed a US House measure called the MINER bill to guarantee the reinstatement and renewal of the leases, while furthermore requiring Congressional approval of presidential decisions to prohibit mining on federal lands in Minnesota, a power possessed by the USFS (EE, 06/23/2017; EE, 07/31/2017; EE, 10/09/2017; EE, 12/01/2017; EE, 12/08/2017; MP, 12/12/2017). But while a companion bill failed to find traction in the Senate, the Trump Administration wrote a legal opinion to nullify

Obama’s decision not to automatically renew the leases (EE, 12/22/2017; EE, 12/29/2017; WSJ, 12/23/2017; WP, 12/25/2017; ST, 12/27/2017).

Environmentalists filed lawsuits questioning the legality of the change and the motivations of the operatives behind it (EE, 06/22/2018; TJ, 06/21/2018; ST, 06/25/2018; TJ, 06/27/2018; ST, 06/28/2018; EE, 07/02/2018; TJ, 07/03/2018b). Although an investigative report from the *Timberjay* detailing government memos from the 1960s seemed to refute Trump’s argument (TJ, 12/05/2018; TJ, 12/27/2018; TJ, 03/02/2019), by the end of 2018 with lawsuits ongoing, the BLM reinstated and renewed Twin Metals’ leases, and “the project was resurrected” with new terms that were not vetted by public review, including provisions granting Antofagasta near-perpetual renewal rights and eliminating requirements that mined metals be sold to American businesses, while boasting heightened restrictions against strip mining and open-pit methods, which the company had never intended to propose (TJ, 05/02/2018; EE, 05/02/2018a; EE, 05/09/2018; EE, 12/21/2018; MP, 05/16/2019; EE, 05/17/2019a; TJ, 12/21/2018a; MP, 12/21/2018; TJ, 09/11/2019; ST, 12/20/2019). The outstanding lawsuits against the lease renewal were finally resolved when US District Judge Trevor McFadden, who was appointed by Trump after donating to his presidential campaign, gave Twin Metals a “major win in the fight over mining” by defending Trump’s legal opinion on the lease renewal (TJ, 07/03/2018c; ST, 04/17/2019a; ST, 03/18/2020a; ST, 04/17/2020b; ST, 05/06/2020).

USFS Withdrawal Consideration Study.

During Obama’s last weeks in office, the USFS initiated a 2-year study to consider a 20-year ban on hard rock mining near the Boundary Waters watershed — a move that delighted

conservationists and galvanized resistance from conservatives (ST 12/15/2016a; EE, 12/16/2016; ST, 12/17/2016; EE, 12/23/2016; TJ, 12/22/2016; EE, 01/22/2017; EE, 03/12/2017; EE, 04/03/2017; MP, 09/19/2018; MP, 11/21/2018; MP, 10/23/2019). The Trump Administration initially promised to continue the study, as Agriculture Secretary Sonny Purdue said, “(Interior) Secretary Zinke and I (are) not smart enough to know to do without the facts base and the sound science” (WP, 05/12/2017; EE, 05/27/2017). But after pro-mining Minnesota US lawmakers lobbied to call off the study (TJ, 07/26/2017b; TJ, 09/08/2017; EE, 10/09/2017; MP, 12/12/2017), the USFS canceled it in favor of a far less rigorous environmental assessment (ST, 12/02/2017; WP, 12/25/2017; ST, 12/27/2017; EE, 02/06/2018; TJ, 09/06/2018a; TJ, 09/13/2018).

While a group of 170 wilderness outfitters and conservation organizations challenged the decision (NYT, 05/17/2018; TJ, 05/31/2018), the Trump Administration consistently refused to release any data from the prematurely ended study (ST, 06/22/2018; TJ, 06/27/2018; EE, 09/07/2018; ST, 09/07/2018; ST, 12/27/2019). Some wondered if any data had been collected at all, suspicions that were both corroborated and refuted by different USFS staff members at different times (TJ, 09/06/2018a; TJ, 09/13/2018; TJ, 10/24/2018; TJ, 03/02/2019). In 2019, Gov. Walz had grown frustrated with Trump’s refusal to share the USFS study data, so the DNR announced it would conduct its own study, rather than depend on a joint review with the BLM as expected (TJ, 11/22/2019; TJ, 11/25/2019). Such decisions have been made by the state several times before, including during its 2011 review of a flood mitigation project in the Red River Valley (ST, 11/25/2019). Whereas many conservationists were pleased with the state’s insistence on an independent review, Becky Rom of the Campaign to Save the Boundary Waters

said she wished the DNR would have waited to announce a separate study until her group's lawsuit had been resolved (ST, 11/25/2019).

Meanwhile, US Rep. Betty McCollum led other failed efforts with Sens. Klobuchar and Smith to reinstate the study (MP, 09/19/2018; TJ, 03/02/2019; TJ, 10/02/2019b; MP, 10/23/2019), including proposing a government spending provision that would have mandated the study's completion (ST, 05/07/2019b; ST, 05/22/2019; TJ, 10/02/2019; MP, 12/17/2019), and invoking a 1909 treaty with Canada as justification to require researching and protecting internationally-shared waters (ST, 12/24/2019; ST, 02/20/2020). When these plans failed, McCollum proposed a standalone US House bill to ban hard rock mining in the Boundary Waters watershed altogether, which journalists agreed had essentially no chance of passing (ST, 01/16/2020; TJ, 01/16/2020; EE, 01/17/2020; ST, 03/17/2017), due in part to the open hostility between conservative politicians and McCollum, who asked reporters, "Why would I ever consult with Mr. Stauber or Mr. Emmer who are quite well known as champions of the toxic mining industry?" (ST, 02/05/2020)

Finally, in response to a public records request in 2020, the Trump Administration was forced to release the USFS study data, but the documents it shared contained "sixty blacked-out (censored) pages," earning the ire of conservationists and news outlets alike for its consistent resistance to transparency (ST, 04/13/2019; ST, 05/24/2019; ST, 02/07/2020; ST, 03/03/2020; ST, 03/18/2020b; ST, 04/17/2020a; ST, 05/02/2020). For more than two years, conservatives have complained that the two-year study could be "devastating," a "job killer," and a "death sentence" for the Iron Range (EE, 03/17/2017; TJ, 09/08/2017; EE, 12/06/2019), to which some conservationists said if Congress had not attempted to delay and derail efforts

to study the project, “This could have been done by now” (TJ, 07/24/2018; TJ, 07/25/2018).

When conservatives cite the Trump Administration assertion that the USFS study did not reveal any new scientific information, they do not mention the fact that it was withheld from public view for more than two years and then eventually censored entirely (EE, 06/07/2019).

On one hand, the *Ely Echo* provides uniquely comprehensive background information that seems to celebrate the thorough nature of the USFS study, which would “invite participation by the public, tribes, environmental groups, industry, (and) state and local government” during a two-year mining “timeout” (EE, 01/22/2017). But in a later attempt to discredit the study, the paper wrote a headline featuring the phrase “BREAKING NEWS” (sic) that described an inconsequential typo in the Federal Register temporarily misstating the end-date of the two-year study (EE, 03/13/2017).

Mine Plan Application.

In 2018, Twin Metals announced a reduction in the size of its intended mine and changed the proposed location of its concentrator facility so that it would not be necessary to pump toxic water with a pipeline under Birch Lake and the Kawishiwi River (ST, 05/24/2018; TJ, 5/25/2018; TJ, 05/30/2018). The next year, the company announced another change to use dry stack waste management, which would mean it would no longer need to transport toxic water from the south side of the Laurentian Divide to the north closer to the mine site, thereby isolating potential pollution to the Rainy River watershed of the Boundary Waters (TJ, 07/18/2019; MP, 07/18/2019; EE, 07/19/2019; ST, 07/19/2019). Both these decisions were framed as conservation-minded efforts to reduce the footprint of the proposal, but they

received mixed reviews from conservationists and newspaper editorial boards (ST, 09/27/2019; EE, 12/18/2019).

Twin Metals submitted its mine plan amid ongoing lawsuits days after Democrats failed to reinstate the two-year USFS study (TJ, 12/18/2019a). While the DNR guessed the state scoping period could last up to two years, Twin Metals said it would then take 5-7 years before permitting could begin (MP, 12/18/2019a). Furthermore, the state reiterated its position that it would not complete its review until it received the uncensored data from the canceled USFS study (ST, 12/18/2019; MP, 12/30/2019). By then, the company had spent nearly \$1 billion and expected construction to cost \$1.7 billion more (ST, 12/16/2016; MP, 02/17/2017; ST, 07/19/2019; MP, 12/18/2019a). But after months of review, the DNR returned nearly 800 comments on the “incomplete” mine plan, telling Twin Metals to provide more information on the potential pollution associated with dry stacks, while the BLM continues its review for another year (ST, 06/24/2020).

Chapter 5: Discussion of Arguments

The previous chapter defined the actors involved in the controversy, the associations between them, and the series of events about which they debate in sampled news coverage. With that accomplished, this chapter compiles and compares the specific pragmatic and ideological arguments actors make to justify or influence their associations in the actor-network. In general, actors debate three types of questions, regarding: 1) the social norms and etiquette of public discourse, or the “Rules of War” and “Avenues of Activism,” 2) the scientific, economic, and regulatory realities in play, or the “Matters of Fact,” and 3) the moral and ontological differences in perspective of those involved, or the “Questions of Ideology.” The sections that follow explore these categories in depth and provide evidence of the impact of controversial arguments in sampled news coverage. Having traveled the hermeneutic circle of this study’s findings, readers are ready to sift through the encyclopedia of argumentation that describes the actions of the controversy, one sub-debate at a time.

Rules of Public Dispute

Actors argue often about the rules of public debate — what they consider to be fair play in their shared oppositional relationships. Both sides expect each other to conduct themselves according to an understood, “thorough and transparent process” outlined by existing laws (ST, 02/07/2019). Attempts by either side to suggest any deviation of this process are often accused by their adversaries of violating established norms in search of shortcuts or unfair delays (EE, 06/07/2019). In the words of one Twin Metals executive, “There are no shortcuts to opening a mine!” (EE, 06/10/2018) Both conservatives and conservationists use claims of process

adherence or violation to justify or disparage certain arguments about how the controversy should be resolved. So, to understand how these “rules of war” are weaponized in the controversy, this section describes each one as thoroughly and concisely as possible — as they have been portrayed in sampled news coverage.

Process & Participation

Whenever an agency action or court decision happens to favor their side of the controversy, both conservative and conservationist actors are eager to boast of the “rigorous” nature of the process that led to it (MP, 03/28/2016; EE, 06/19/2016; EE, 01/09/2017; NYT, 05/17/2018). Although *Timberjay* editor Marshall Helmberger calls “due process” a “sacred... bedrock of conservative principle” (TJ, 07/03/2018c), he agrees with conservationists that most calls to “let the process play out” are disingenuous (MP, 03/10/2014; TJ, 07/05/2017), due in part to the “inherent bias” of the EIS process, which “always shows that the mine can operate within the existing rules,” whether it can do so safely or not (MP, 05/24/2017; TJ, 08/01/2018).

Gov. Dayton’s 2016 temporary executive block of Twin Metals, for example, is framed as a process violation by conservatives who said, “Dayton did not let the process work” (EE, 03/13/2016; TJ, 04/02/2016), by acting outside the “usual permitting process” (WP, 12/16/2016). Later, Twin Metals CEO Kelly Osborne said his opponents refuse to “let the mine permit process work” (ST, 11/30/2019). Even pro-mining Democrats like Sen. Amy Klobuchar, argue that the legal process in place is “complete enough” without creating more reviews (MP, 05/21/2014). Conservationists consistently defend themselves in the press against such accusations, by claiming they are not “trying to stop any ongoing process” (MP, 08/28/2015). Others have accused mining supporters of process violations for trying to use Congressional

action to cancel scientific studies (MP, 09/15/2017) and nullify citizen lawsuits (MP, 07/28/2017; MP, 08/01/2018; TJ, 07/03/2018c).

At one public meeting in Ely, MN, state Sen. Tom Bakk (DFL) reportedly made “remarkably candid comments,” admitting, “The truth is, the environmental review process is not intended to stop projects... so once they start down that road of applying for those permits it’s pretty hard to stop” (TJ, 12/11/2019). *Timberjay* editor Marshal Helmberger said Bakk finally “spoke the truth,” but not in a way that benefits his argument (TJ, 12/18/2019b). While the *Star Tribune* said Bakk “faced outcry” over his comments (ST, 12/05/2019; ST, 12/18/2019), the *Ely Echo* described them far more casually (EE, 12/06/2019). Whereas conservationists accuse conservatives of having “blind faith in regulatory regimes” (MP, 02/23/2018), pro-miners claim the opposite (EE, 07/01/2017; MP, 03/01/2018). The *Ely Echo*, for example, once criticized a “mining foe” for violating process rules when he reportedly said, “No. No matter what” to hard rock mining (EE, 12/08/2017). Meanwhile, the paper seemed to agree with Twin Metals’ claim that the company’s “own commitment to the environment” was sufficient justification to trust its plans (EE, 04/03/2017).

Additionally, some actors argue about who is allowed to participate in the debate. Pro-mining conservatives have said that, since the Lake Superior watershed has already been polluted by mining companies, Minnesotans from Duluth, whose alleged “silence” on this issue has been “deafening,” have no right to participate in debate about the Boundary Waters (EE, 07/24/2016; EE, 07/01/2017). Conservatives cite the MPCA 2016 Impaired Waters List to support their claim that, although mining has degraded water quality across the state, none of the impaired waters “are up here (in the Iron Range),” sarcastically, calling it a “miracle” that

the water on the Range is still drinkable “even out of a mine pit” (EE, 07/30/2017). Similar arguments are made by mining supporters in the *MinnPost* (MP, 10/06/2008), who ask conservationists, “Why don’t you people clean up Minneapolis and St. Paul?” (MP, 01/15/2014). Some conservatives even claim that anyone who uses a cell phone is a hypocrite if they oppose hard rock mining in Minnesota, because the metals it brings are present in such technology (EE, 02/12/2018; ST, 12/11/2019). But conservationist JT Haines consistently counters these “well-worn” arguments as “flawed” and disingenuous (MP, 03/10/2014; MP, 02/23/2018).

Too Soon to Study, Too Late to Stop.

One argument often made by conservatives and state regulators is that conservationists’ requests for extensive scientific studies come too soon, claiming they should occur later in the pre-determined process (MP, 06/18/2015; MP, 11/30/2015; MP, 09/15/2017; EE, 01/07/2018; MP, 05/24/2018; EE, 12/06/2019). Ely Mayor Chuck Novak, for example, called requests for scientific reviews of Twin Metals an “insult,” because “we’re not permitting a mine, we’re permitting exploration” (EE, 07/16/2016). The *Ely Echo* argued that no scientific discussion of Twin Metals should begin until they submit a formal mine plan, because “there are no studies being conducted” and “nothing has changed” since the renewal of Twin Metals’ leases in 1989 and 2004 (EE, 06/26/2016). As Twin Metals said, “the idea is to update the public along the way” (EE, 05/25/2018). What the DNR calls a strategy of “adaptive management,” *Timberjay* editor Marshall Helmberger says is “a sophisticated way of saying, ‘We don’t know what will happen’” (TJ, 05/29/2019; TJ, 09/25/2019; MP, 09/30/2019). Other conservationists summarize this argument as if pro-miners are saying, “Don’t worry about this now, worry about it later” (MP, 03/10/2014; ST, 11/10/2015; TJ, 07/26/2017a).

Despite their views on Twin Metals, conservatives also argue that it is too late to study PolyMet, because doing so would only “replicate” earlier studies, claiming repeatedly that “no project in the history of Minnesota has been more thoroughly evaluated” (MP, 03/04/2016; EE, 05/27/2017; EE, 08/28/2017; MP, 03/01/2018; EE, 06/28/2018; MP, 11/02/2018; TJ, 12/21/2018b; ST, 05/22/2019; EE, 07/25/2019; TJ, 08/01/2019; WSJ, 10/15/2019; EE, 12/06/2019; ST, 01/17/2020c; ST, 02/11/2020; ST, 02/28/2020). Conservationists consistently counter that a lengthy review process should not guarantee approval (MP, 03/04/2016; MP, 08/30/2019). Helmberger agrees, arguing that while pro-miners have “touted” the lengthy review process, key concerns have remained deliberately unaddressed, so that, by the time they are, “politics invariably supersedes the science and the law” (MP, 05/24/2017; TJ, 09/25/2019; MP, 09/30/2019). Though he sympathizes with those who are “quite understandably, impatient” over the “lengthy” environmental review process, no company should reach “a magic amount of time and money spent, at which point it becomes necessary to move it forward” (MP, 03/10/2014).

Violations of Transparency

Opposing actors often accuse each other of violating unspoken standards of transparency by committing information “cover up(s)” (ST, 07/17/2019), denying Freedom of Information Act requests (ST, 09/11/2019), failing to distribute government or corporate data (WSJ, 10/15/2019), and more (TJ, 01/16/2019). Furthermore, government bodies are criticized for lacking transparency if they provide too little time for the public to respond to comment periods on state decisions (MP, 04/17/2014; MP, 12/11/2015; EE, 02/06/2018; ST, 01/22/2019; ST, 02/05/2019a; TJ, 02/21/2019b).

In 2019, conservative actors accused conservationists of violating transparency rules by “secretly” organizing an “unadvertised listening session” with Sen. Amy Klobuchar’s staff (TJ, 09/05/2019), which the *Ely Echo* framed as a conspiracy exposed by the investigative work of pro-miners “tipped off” with “leaked” emails that instructed attendees “not to tell anyone” about the gathering (EE, 08/19/2019). Klobuchar’s staff said they “weren’t trying to be sneaky... There was confusion about what the meeting was” (EE, 08/19/2019). Furthermore, the *Ely Echo* claimed that another unnamed news source had been notified of the “apparently... secret” meeting and implied that conservationists had an “underhanded” relationship with the publication (EE, 08/19/2019).

PolyMet has faced its own accusations of transparency violations. In 2015, the company refused to allow a University of Minnesota professor access to a company-owned road to reach the federal lands of the mine site, preventing him from performing valuable wetlands research approved by the USFS (MP, 08/28/2015). Defending the decision, PolyMet executive Brad Moore said, “We feel no obligation to allow a non-federal third party... access across private roads as requested” (MP, 08/28/2015). In another instance, PolyMet refused entry to a state expert looking to identify the type of bogs present on the wetlands near the proposed mine, an important factor for assessing the risks to groundwater in the area (MP, 11/30/2018).

PolyMet has also been accused of restricting journalists. Before a court-mandated hearing to investigate its air and water quality permits in 2020, PolyMet requested the Ramsey County District Court that journalists not be allowed to record the hearing because doing so could “increase the chance that the proceedings... will be misconstrued by the media” and create “viral media moments” (ST, 01/16/2020b) — something the *MinnPost* and *Star Tribune*

challenged together in a court filing submitted by a shared attorney, who said the public has “inherent interest” in “taxpayer-funded courts” and that recordings would benefit the transparency and accuracy of coverage (MP, 01/17/2020). The judge agreed that PolyMet had “not identified a single, legitimate reason why it or this matter deserve special treatment,” and so filming was allowed, and no reporters were barred from attendance as the company requested (ST, 01/17/2020b). Individual witnesses, however, were explicitly allowed to opt out of having their testimonies filmed, which two of them did: PolyMet executive Brad Moore, himself a former MPCA commissioner, and company employee Christine Kearney (MP, 01/17/2020).

One more criticism against PolyMet regards Gov. Waltz’s stay-at-home order during the COVID-19 pandemic, in which the MPCA initiated a pandemic support program to give permit holders the opportunity to loosen the enforcement of permit requirements temporarily. PolyMet applied, seeking to pause its water quality measurements on the wetlands and the pollution-leaking former taconite tailings basin it owns (ST, 05/13/2020). But the MPCA denied the request, and the *Star Tribune* concluded its pandemic support program had not become the pollution “free-for-all” it could have (ST, 05/13/2020).

Conflicts of Interest

One understood rule of the controversy is that conflicts of interest should be avoided. Nevertheless, accusations of them are apparent and abundant throughout sampled coverage. According to state law, the Minnesota DNR is mandated to advocate for the mining industry while simultaneously regulating it, which to many conservationists is a fundamental conflict of interest — especially when groups like PolyMet are also represented on the MN Chamber of

Commerce board of directors (MP, 04/15/2014; MP, 03/04/2016). The Minnesota state legislature passed its first law regarding the safety of closed mining sites in 1969, then expanded it in 1977, when the Iron Range Resource Rehabilitation Board (IRRRB) was mandated to relinquish its responsibility of approving and regulating new mines to the DNR and MPCA (MP, 08/26/2015). In 2019, DFL state House representatives proposed to move the mining advocacy mandate from the DNR to the non-regulatory state Department of Employment and Economic Development (DEED) (MP, 04/25/2019). A companion bill in the state Senate even featured one Republican co-sponsor, but Gov. Walz's DNR opposed them both and convinced the lawmakers to retract them (MP, 04/25/2019).

Perhaps more revealing of the state's priorities may be its financial investments. The MN State Investment Board, for example, is responsible for "ensuring solid returns" on investing \$95.7 billion in retirement funds of Minnesota state employees (ST, 08/01/2019). As of 2019, the 4-person board — consisting entirely of state officials: the governor, attorney general, secretary of state, and state auditor — had invested nearly \$37 million in Glencore and \$5 million in Twin Metals, with another \$32 million in the controversial Enbridge Line 3 pipeline (ST, 08/01/2019). The National Association of State Retirement Administrators calls the makeup of Minnesota's investment board "unusual," and MN Attorney General Keith Ellison (DFL) agrees the apparent "optics issue... does a lot of damage just for public trust," but he still defended the investments, because "professional portfolio managers do 99% of the investment work" (ST, 08/01/2019).

While groups like Divest-Invest Minnesota oppose many of the state's investments in controversial projects, the board argues, "it can be more effective to retain the stocks or bonds,

keep a seat at the table and push the company to change” (ST, 08/01/2019). *Star Tribune* columnist Lee Schafer, however, believes management decisions are “always about politics” (ST, 01/31/2020) and warns of the state’s failed investment in the 2000s with Twin Metals’ predecessors, which resulted in the IRRRB and the state losing \$500,000 when the companies involved folded (ST, 03/09/2016a).

Another potential conflict of interest is the state’s relationship with its contract attorneys. In 2015, Gov. Dayton hired lawyers who worked for the National Mining Association, claiming they will “be able to create an ethical wall between (their other) clients and the state of Minnesota” (ST, 12/04/2015). Conservationists were “dismayed” at the choice of expensive, pro-mining lawyers, arguing the state could have instead hired dozens of legal advisors from the Iron Range who could have had “good-paying jobs with benefits... to clean up” their homeland (TJ, 04/05/2017; MP, 01/24/2020). They criticized the state for spending \$750,000 on the Washington, D.C.-based law firm, arguing that its record “makes one wonder whether the decision to approve PolyMet may have already been made” (MP, 12/11/2015). By the next year, Gov. Dayton had asked the legislature for an additional \$4 million to pay the lawyers, who for an undisclosed reason claimed to charge the state only “half of the firm’s standard rate” (ST, 03/21/2016). Nevertheless, by 2019, state agencies had spent or requested nearly \$14 million more (TJ, 04/05/2017; ST, 05/16/2019).

Environmentalists are not free from accusations of conflicts of interest either. When former DNR Commissioner Tom Landwehr accepted a new job as executive director of the Campaign to Save the Boundary Waters, the *Ely Echo* reported on conservatives’ claim that this posed a conflict of interest, while the *Star Tribune* did not (ST, 03/05/2019). Landwehr

defended his decision by claiming there is no state law that prevents him from making it and that he “never heard this discussion when a former commissioner of (MPCA) went to PolyMet... So it’s a little paradoxical... why do I get this question and other commissioners don’t?” (MP, 03/19/2019) Becky Rom called him “the right person at the right time to lead our campaign” (TJ, 03/05/2019), but former MN Gov. Arne Carlson (R) criticized Landwehr for the “obvious hypocrisy” of his claims that the Twin Metals is more dangerous than PolyMet, asking, “What has changed? The answer — Landwehr’s job” (MP, 04/01/2019). Before leaving the DNR, Landwehr was the subject of much criticism from conservationist Paula Maccabee, who railed against his guest editorial in the *Star Tribune* (ST, 04/18/2018) and accused him and his department of serious conflicts of interests and disingenuous deliberative outreach in which the DNR allegedly entered public comments “into spreadsheets and paid consultants to write a series of dismissive responses” (ST, 04/25/2018).

One of the most-covered potential conflicts of interest in sampled coverage involves the relationship between the owner of Antofagasta and President Trump’s children. Days after the 2016 election, Antofagasta owner Andrónico Luksic bought a luxury house in Washington, D.C. for \$5.5 million and immediately rented it to Ivanka Trump and her husband White House advisor Jared Kushner — something Luksic’s rental company insisted was purely coincidental, despite having never listed the house for rent, filed the required paperwork to legally collect rent payments, nor revealed how much its new tenants had agreed to pay (WSJ, 03/09/2017; WP, 03/09/2017; WSJ, 04/03/2017). While the White House insisted the couple had “never met their landlord,” a Luksic representative noted the owner had met Donald Trump at a New England Patriots game four years before (WP, 12/25/2017; WSJ, 03/09/2017). Furthermore,

Luksic reportedly has a history of similar corrupt dealings in Chile, where he “came under fire” for apparently attempting to “win favor” with the incoming President of Chile Michelle Bachelet by granting her children a \$10 million loan near her election in 2013 (NYT, 06/26/2019). Local outlets and conservationists were critical of the landlord scandal, drawing attention to it in coverage for years to come (ST, 03/09/2017; ST, 12/27/2017; TJ, 05/09/2018; MP, 09/24/2018; TJ, 12/27/2018; TJ, 03/05/2019; ST, 12/20/2019; ST, 03/18/2020), a practice criticized by a conservative columnist at the *Wall Street Journal* (WSJ, 06/07/2019) and the *Mesabi Daily News*, who equated the landlord scandal to the conflict of interest inherent in former DNR Commissioner Tom Landwehr’s new job at Save the Boundary Waters (EE, 03/09/2019).

Avenues of Activism

Another set of debates apparent in sampled news coverage concerns the use of strategic actions that are perceived by actors on one side or the other to be unfair or ineffective. Among the avenues of activism at actors’ disposal, some are considered more scrupulous or useful than others. For example, many state politicians reportedly consider non-binding legislative resolutions a “waste of time... a big joke” (EE, 12/06/2019; TJ, 12/11/2019). Nevertheless, it is a strategy both sides employ frequently (MP, 05/21/2014; ST, 04/18/2016; ST, 12/08/2016; ST, 02/10/2017; ST, 03/05/2020). Other actions, however, are treated more seriously. Conservatives consistently accuse conservationists of depending on “scare tactics” (EE, 07/30/2017; ST, 07/01/2019; TJ, 12/18/2019a; MP, 03/01/2018), and PolyMet has reportedly “dismissed” environmentalists’ arguments out of hand for having “attacked the project in every way (they) can” (TJ, 07/03/2017; TJ, 07/25/2019b; TJ, 07/31/2019).

To understand actors' relationships with their most commonly used avenues of activism, the following sections describe the arguments made about them in sampled coverage. Such strategies include lobbying, fundraising, philanthropy, advertisement, protest, boycott, lawsuits, executive action, and more.

Lobbying: American Dream or Capitalist Nightmare?

Political lobbying is one contested avenue of activism with actors on both sides boasting of their own successful lobbying actions, while simultaneously criticizing their opponents for doing the same thing. Many sampled Minnesota news outlets cover the lobbying efforts of the rich and powerful, which reportedly concerned Gov. Dayton, who said, "When the only people represented (in Congress) are the people who have money to be represented, then that skews legislation" (ST, 03/16/2017). The *Star Tribune*, for example, reported on the \$2.3 million spent on lobbying for lighter regulation by the MN Chamber of Commerce in 2016 — "more than triple the amount" spent by anyone else, with PolyMet being another notably high spender (ST, 03/16/2017). In the first two and a half years since Trump took office, Twin Metals spent \$900,000 lobbying Congress (NYT, 06/26/2019; MP, 12/17/2019). Additionally, the *Star Tribune* wrote about the Koch brothers' "vast, well-funded web of influence," which in 2018 donated to five congressional candidates in Minnesota (four Republicans and one Democrat) and watched its associates assume "key roles in the (Trump) White House," like lawyer Daniel Jorjani, who wrote the legal opinion to reverse Obama's cancellation of Twin Metals' mineral leases (ST, 06/10/2018).

Lobbying efforts conducted by local, grassroots stakeholders are comparatively minuscule. Nevertheless, they receive the most attention from critical opponents. Conservative

actors consistently refer to themselves as “up against large environmental groups flush with cash” (MP, 01/20/2017; EE, 09/07/2018) in a “David and Goliath situation” in terms of relative fundraising power (ST, 12/15/2019). Conservationists, meanwhile, frame themselves as equally outmatched by billionaire mining investors. Former DNR Commissioner Tom Landwehr even used the same analogy of a “David and Goliath battle, with a small nonprofit going up against a huge foreign corporation” to make the opposite argument (TJ, 03/05/2019).

Conservationists agree that Trump’s anti-environmentalism persona galvanized their fundraising efforts and put environmental controversies “at the front of people’s minds” (MP, 09/19/2018), increasing their lobbying power (ST, 02/01/2020). The Campaign to Save the Boundary Waters, for example, reportedly raised \$228,000 in 2019, including \$10,000 at their highly publicized “Wild Waters” benefit concert in Duluth (ST, 08/16/2019; ST, 12/15/2019). In 2020, they also helped create a political action committee that they said would “give a voice to... millions of Minnesotans,” although they intended to target “the outer suburbs of the Twin Cities” (ST, 02/19/2020). The group’s stated lobbying goal “to convince both Congress and Obama that (the Boundary Waters) is worthy of protection” (MP, 04/14/2015) is given a negative connotation by the *Ely Echo*, which consistently implies its agreement with conservatives who call Rom’s lobbying a “clear and pervasive... high-profile campaign” to unfairly stop Twin Metals “in collusion” with Twin Cities-based Democrats (EE, 06/19/2016; EE, 07/13/2018; EE, 08/28/2017).

On the other hand, the *Ely Echo* frames the lobbying efforts of Twin Metals as good, due to its association with local governments and grassroots supporters (EE, 05/09/2018). In one instance, the paper acknowledged the similarity of each side’s lobbying efforts, when, “In a

twist of irony,” pro-mining politicians “crossed paths with anti-mining activists... on a D.C. sidewalk.... who were apparently in Washington on a similar mission” (EE, 11/01/2017).

Nevertheless, both sides accuse each other of nefarious lobbying and regularly request government agencies to release email communications of their opponents to prove it. In 2016, the conservative Up North Jobs group filed a FOIA request to access emails from Gov. Dayton, his ex-wife, and local conservationists that it claimed would reveal corruption between them (EE, 04/14/2016). Two years later, the *Ely Echo* claimed that the released emails did substantiate conservatives’ concerns, implying that the environmentalists’ efforts to arrange a meeting with government officials was unscrupulous (EE, 07/13/2018). Later, the *Ely Echo* covered another similar data request from conservatives seeking emails from the Obama Administration for “uncovering the truth” about what they called a “politically-motivated... scandal” (EE, 07/12/2019).

The *Star Tribune*, meanwhile, has filed several similar public records requests, most of which were initially ignored and denied by government agencies (ST, 06/26/2019). In 2018, conservationists claimed that one such round of eventually-released emails showed that US Rep. Pete Stauber used his government e-mail address to discuss his upcoming election with allies — an action that led the Campaign to Save the Boundary Waters to speculate that “the plot to undermine the Boundary Waters began long ago” (ST, 10/30/2018). Other released emails showed that Republican state House members privately asked the Trump Administration if the federal government would allow the MN legislature to weaken the state’s wild rice sulfate limit — something some conservationists called proof of “collusion” (TJ, 09/13/2019).

Philanthropy & Outreach: Genuine Investment or False Advertisement?

Philanthropy is one avenue of activism that all actors agree is well within the bounds of fair play. To what extent philanthropic acts grants one a social license to mine, however, is strongly debated. The *Ely Echo* and its guest editorial writers consistently praise Twin Metals' local philanthropy, writing, "We've run photo after photo of Twin Metals putting money back into the community," implying that companies that have "established a presence" and "put jobs and dollars into our local economy" are entitled to favorable treatment from local government (EE, 07/17/2016; EE, 01/01/2017; EE, 03/03/2018; EE, 12/16/2018). Some of the *Ely Echo's* coverage includes stories about Twin Metals' donations to the local food bank (EE, 12/02/2016; EE, 11/23/2017; EE, 03/15/2019), their offering of college scholarships (EE, 03/11/2019), and their sponsorship of the Ely Little League baseball team, called the Twin Metals Rockies, who once reportedly "marched" into a public meeting carrying a pro-mining political banner with "smiles and happy faces" (EE, 07/24/2016; TJ, 08/06/2019). The paper has repeatedly reported on the annual "Twin Metals Appreciation Days... salute" hosted by Up North Jobs during the popular Ely Blueberry Arts Festival, promoting the group's display and the company's "more than \$347,000" in local charitable donations (EE, 07/27/2017; MP, 07/29/2019). Furthermore, in collaboration with local Ely church groups, Twin Metals even donated seven sets of "military grade" helmets and body armor to the Ely Police Department, in an apparent effort to earn favor with the local conservative community (TJ, 02/28/2019b). The company is also celebrated in the *Ely Echo* for winning an award for hiring members of the military (EE, 03/31/2017).

Conservationists, on the other hand, utilize different forms of outreach to raise awareness of their causes (MP, 07/28/2017), such as designations from environmental groups of bodies of water on “threatened” lists (MP, 04/07/2015) and public stunts like a 350-mile dogsled expedition to deliver a petition to lawmakers in St. Paul (MP, 03/06/2012; MP, 04/07/2015). In some such outreach events, conservationists Dave and Amy Freeman spent a full year camping in the “wild treasure” of the Boundary Waters (MP, 09/30/2016) and bicycled to Washington, D.C. to deliver petitions against Twin Metals (TJ, 3/21/2018). In 2017, the *Ely Echo* reported on a public presentation by the Freemans, framing them as deceitful, privileged elites for accepting an “undisclosed stipend” from an environmental group for their expedition and allegedly making misleading statements about mining (EE, 03/10/2017).

Protests: Free Speech or Direct Action?

Across the news coverage included in this study, both sides have performed different kinds of protests. In 2019, for example, conservationists from Duluth for Clean Water protested at the MN State High School Hockey Tournament in the Twin Cities by wearing t-shirts that spelled “STOP POLYMET,” and the St. Paul police forced the group to leave at the request of the event’s sponsors, which included PolyMet, whose advertisements at the Xcel Energy Center that night were reportedly “ubiquitous” (MP, 03/14/2019). Conservatives, on the other hand, have picketed in front of outdoor recreation businesses (TJ, 08/02/2018) and disrupted public discussions (TJ, 08/30/2018). In fact, mining supporter Mike Banovetz, who picketed in front of the Piragis wilderness outfitter store and believes conservationists are “trying to kill our jobs and future,” is the same person who asked a cynical question about eco-feminism to two women speakers at the Ely Tuesday Group (described earlier) (TJ, 08/02/2018; TJ, 08/30/2018).

The most common conservative forms of protest, however, are boycotts. In 2016, the Silver Bay City Council banned the sale of craft beer at its municipal liquor store from the Duluth-based Bent Paddle Brewing Company, to boycott the local business for its opposition to hard rock mining near the Boundary Waters (ST, 03/15/2016). The brewery's co-owner made an in-person appeal to the council, saying, "We take a lot of pride in being a part of this region so it has been incredibly difficult to think of this issue dividing us," but despite the owners' otherwise pro-union, rural Minnesota identity, the council refused to reverse its ban, and more private liquor stores enacted their own boycotts (ST, 03/23/2016a).

Other boycotts have strongly affected conservatives' relationships with the indigenous communities of the region. The Wilderness at Fortune Bay Resort Casino owned by the Bois Forte Band of Chippewa has hosted many events sponsored by conservative politicians and both PolyMet and Twin Metals (EE, 11/09/2017), but after the tribe came out in opposition to hard rock mining, conservatives like Ely Mayor Chuck Novak temporarily encouraged a boycott of businesses owned by the Bois Forte Band, and several pro-mining groups canceled their plans to host events at the resort, as the Ely City Council reportedly "waved its colors in the bitter fight" by furthermore unanimously adopting a resolution to support copper-nickel mining (ST, 03/05/2020). Resort manager and Bois Forte tribal member Jenna Lehti called Novak's support of the boycott "very disconcerting," because the resort employs 30 local people and the tribe owns the WELY radio station that Novak uses as a weekly platform for public communication (ST, 03/05/2020). Conservationist Becky Rom, meanwhile, implied Novak was racist, arguing he "singled out" the Ojibwe "to punish" for exercising their rights (ST, 03/05/2020).

Executive Action: Selfless Service or Despotic Decision?

Actors in the network often display conflicting, ever-changing opinions on the use of executive powers by the governors of Minnesota and the presidents of the United States. In 2016, while Twin Metals waited for the federal government to renew its expired mineral leases, Gov. Dayton ordered his state agencies to prevent Twin Metals from proceeding in the state approval process and asked the BLM to support requiring an environmental review (ST, 03/07/2016), which it did soon after (NYT, 07/02/2016). Some conservationists like Adam Fetcher (MP, 03/28/2016) and Becky Rom (TJ, 03/09/2016) told the press they were “thankful” for Dayton’s executive action, while the Ely City Council opposed it (TJ, 04/02/2016). Hard rock mining industry representative Kate Lehmann called Dayton’s executive action evidence that he “rules by fiat” against state law (ST, 04/13/2016). Whereas the *New York Times* editorial board called Dayton “courageous,” the *Ely Echo* editorial board was “sorry” to call the governor “just plain wrong ... blind, unreasonable... goofy” (EE, 02/21/2016). Claiming Dayton is trying “to sabotage our economic future,” they even blamed him for Twin Metals’ decision to “cut” 8 positions from its Ely and Twin Cities offices (EE, 03/13/2016). Nevertheless, in another *Ely Echo* article, the paper acknowledges that, despite the governor’s temporary block, the company continued to have plenty of other aspects of the project to work on (EE, 04/08/2016).

The *Star Tribune* opposed Gov. Dayton’s executive action out of concern that it would establish a dangerous precedent of bolstering executive authority, which could be used against environmentalists in the future (ST, 03/18/2016a). Nevertheless, four years later, the paper’s editorial board consistently criticized Gov. Walz for not utilizing his executive powers, accusing him of feigning powerlessness and “ire” against Trump’s mining decisions (ST, 08/23/2019; ST,

06/20/2020; ST, 11/23/2019b; ST, 05/02/2020; ST, 06/20/2020). The *Timberjay* even refers to the *Star Tribune* as the “state’s largest newspaper” when reporting on the paper’s decision to criticize Walz, as an emphasis on the importance of its criticism (TJ, 08/28/2019).

While conservationists have endorsed federal executive action when it supports environmental causes (MP, 09/30/2016), conservatives like US Rep. Tom Emmer have decried the so-called “all-or-nothing approach” of environmentalists who he said wrongly thought “if they could convince the (federal government) not to renew (Twin Metals’) leases, there would never be a discussion about this again” (MP, 09/15/2017). Indeed, when the Obama Administration canceled Twin Metals’ mineral leases, Rom insisted the authority of the BLM to do so was “absolutely clear” (ST, 09/13/2016), but later, when Trump’s BLM reversed that decision, she and other conservationists opposed the move as illegal and overreaching. Despite their understanding of the significance of executive action, some conservationists were not prepared for the Trump Administration to use its executive powers to reverse Obama’s decisions, like Chris Rackens of the Wilderness Society, who said, “it wasn’t a surprise... but it did take us back a bit” (MP, 09/19/2018).

According to conservationists like Becky Rom, executive powers allowing the president to ban mining in specific areas should not only be considered acceptable, but even “courageous and... visionary” (MP, 04/14/2015). Others even asked Walz to prevent Twin Metals from applying for permits (MP, 12/18/2019b) and “stop this project right now” (ST, 10/03/2019; ST, 12/18/2019). The *MinnPost* however, noted that such executive actions would also be “only temporary,” since succeeding administrations could likely undo them (MP, 04/14/2015).

Lawsuits: Judicial Safeguards or Cynical Tricks?

Litigation receives mixed reviews from actors throughout the network. On one hand, conservationists often laud the judicial system as their last bastion of “hope” (TJ, 06/13/2018; TJ, 10/10/2018) — the “one place where average Americans can stand equal with powerful corporations or an arbitrary or abusive government agency” (MP, 06/15/2018). While the environmental group MCEA has called lawsuits “the primary tool that we have” (TJ, 08/08/2019), others, such as the San Francisco-based Earthjustice, have boasted at public meetings in Minnesota about being involved in “104 active lawsuits” against the Trump Administration (TJ, 08/30/2018). *Timberjay* editor Marshall Helmberger believes decisions that prevent citizens from having their day in court, such as the Congressional efforts from pro-mining lawmakers to nullify lawsuits against PolyMet’s land exchange, are unfair and hypocritical, considering his claim that it was a threat of lawsuits from PolyMet that compelled the USFS to grant the exchange in the first place (MP, 06/15/2018).

Many conservative actors, however, have disagreed with this favorable interpretation of the role of courts, advocating instead to limit the ability of citizens to file suits against mining decisions (MP, 02/27/2014; ST, 05/13/2017; TJ, 08/02/2018). In apparent agreement, the *Ely Echo* (EE, 08/28/2017) and conservative Gerald Tyler of Up North Jobs (EE, 01/07/2018) described the George W. Bush-era USFS decision to delay its initial approval of PolyMet to avoid defending the decision in court and complained that “the fear of a lawsuit alone (unfairly) delayed action for two years,” implying that the admittedly under-equipped agency should have made a decision it could not afford to defend.

Despite these beliefs, some of the same conservative actors who disparaged the lawsuits of environmentalists support the lawsuits of their ideological colleagues. The *Ely Echo*, for example, reported favorably on a lawsuit by Up North Jobs that accused Gov. Dayton of collusion with “anti-mining activists” (EE, 03/03/2017; EE, 03/28/2017; EE, 01/12/2018). In this case, as in others, the conservatives claimed the government was responsible for “depriving” them of “employment and economic activity” (EE, 01/12/2018), an argument conservationists called “frivolous” (ST, 01/09/2018a).

Matters of Fact

Some of the biggest arguments between actors in the network regard matters of fact — what is true from the perspectives of science, economics, and law. Both sides believe that the matters of fact work in their favor, and they constantly accuse each other of resisting the truth (MP, 03/16/2009; ST, 04/07/2014; EE, 07/16/2016; MP, 08/24/2017; EE, 02/12/2018; EE, 05/09/2018; NYT, 05/17/2018; TJ, 08/02/2018; TJ, 05/04/2019). Nevertheless, many normal people on the Iron Range are admittedly uninformed of the complexity of the matters of fact involved, such as one woman at the Ely Blueberry Arts Festival, who said, “I personally would just as soon not have (hard rock mining) that close to the Boundary Waters just because I think it’s a natural resource that we should be preserving. But if that means people don’t have jobs, I don’t know enough about it to understand that” (MP, 07/29/2019). Another older resident said they read about the assurance of advanced mining technology in the *Ely Echo*, which convinced them that dry stack waste management would make mining safe and that “this area needs jobs... it’s a wonderful town, it really is. And it needs more than just tourism” (MP, 07/29/2019). Therefore, to help readers understand some of the ongoing substantive debates, the following

sections classify and describe the legal, scientific, and economic matters of fact most often argued about by actors in the controversy.

Regulation

Matters of legal fact, such as the mining industry's record of safety and state regulators' record of strict law enforcement, are important subjects of debate.

Industry Record of Pollution.

Of the more than 100 closed taconite mines in the Iron Range, some have been exceeding pollution limitations for years and will have to be monitored for decades or more, while others have been successfully converted into “business parks, fishing piers, campgrounds, overlooks, gun clubs — even a blueberry patch” (MP, 08/26/2015). Conservationists, however, consistently draw attention to the comparatively worse record of the hard rock mining industry, which they believe has “never” produced a mine that did not pollute beyond expectations (MP, 03/24/2014; MP, 01/16/2015; ST, 03/03/2016; ST, 04/01/2016; TJ, 04/19/2017b; MP, 02/23/2018; MP, 09/24/2019). Only a few sampled articles explain the differences between iron ore mining and hard rock mining (MP, 01/24/2008; MP, 04/14/2015; TJ, 09/12/2018; MP, 09/18/2018; EE, 02/12/2018; ST, 01/29/2019). Those that do quote conservation groups like the Minnesota Environmental Partnership, which once described hard rock mining as “kind of like playing with nuclear weapons” (MP, 08/26/2015).

Most news outlets, excluding the *Ely Echo*, have critically cited numerous examples of industry failures (MP, 01/24/2008; MP, 10/06/2008; MP, 08/26/2015; LAT, 08/13/2015; MP, 02/17/2017; MP, 12/12/2017). In one 2013 court case that reportedly “rivals a Dickens story for twists and turns,” the Flambeau mine of Wisconsin evaded responsibility to clean up its

pollution that was up to 67 times higher than predicted, because the Wisconsin DNR decided not to require contamination limits on the company's permit (MP, 08/30/2019). While its permits do not establish toxicity limits on important chemicals either (MP, 10/24/2014), PolyMet's mine would produce 300 million more tons of waste rock than Flambeau and likely pose greater risks (MP, 12/18/2015).

In 2014, the Mount Polley copper and gold mine in Canada suffered the collapse of its 17-year-old earthen dam holding back 1.3 billion gallons of waste tailings, flooding thousands of acres of land and poisoning downstream rivers and lakes — an event that encouraged mining companies in Montana to advocate for increased regulations (TJ, 02/02/2019; LAT, 08/13/2015; MP, 05/09/2019). Conservationists in Minnesota often cite the Mount Polley dam collapse to raise doubts about the industry (MP, 01/16/2015; MP, 02/23/2018; MP, 08/30/2019). Some conservatives counter by denying the local indigenous populations' concerns over the poisoned waterways there (MP, 03/01/2018) and giving PolyMet credit for later hiring someone who had studied the failure (EE, 09/16/2017; MP, 03/01/2018). In a more nuanced argument, former Obama-era USFS Superior National Forest Supervisor Brenda Halter wrote a guest editorial describing the empathy she shared for the mining company executives responsible for the Mt. Polley collapse, but she nonetheless uses their shocked responses to the disaster as evidence that more caution must be taken toward Twin Metals (ST, 01/29/2019).

In 2019, the tailings basin dam at the Brumadinho mine in Brazil collapsed, killing more than 250 people and triggering worldwide industry critiques of waste tailings dam safety (TJ, 02/02/2019; TJ, 02/09/2019; MP, 08/13/2019). Later, the MN DNR refused to reconsider PolyMet's dam plan, even after revelations that its designer was "one of the people responsible

for failing to prevent the tragedy in Brazil,” having reportedly implemented “unorthodox and usual” methods of risk assessment and certifying the dam’s safety just weeks before its collapse (ST, 07/31/2019b; MP, 08/30/2019). Even mining supporters, like consultant Steve Emerman, criticized the US government for allowing dams that “the developing world do not accept” (WSJ, 10/15/2019). In fact, PolyMet’s proposed upstream design is forbidden in Ontario, Canada, where the company is headquartered (WSJ, 10/15/2019). Furthermore, studies of industry failure have helped rally conservationists to establish their belief that the industry’s record is “reprehensible” (MP, 04/15/2014), “abysmal,” and “horrid” (MP, 02/23/2018). These include a 2012 report from the environmental group Earthworks (MP, 06/20/2019), a 2016 USFS study, and a 2017 United Nations report suggesting that all the country’s copper mines have caused significant pollution, with “catastrophic spills” increasing in recent years (MP, 02/23/2018).

Conservative stakeholders, on the other hand, believe the mining industry’s record is good, like one Iron Ranger, who said, “Look at Minnesota and Michigan that have these mines... They seem not to be having any problems” (WSJ, 10/15/2011), and others who asked, “Can’t we do the same?” (EE, 02/12/2018) In one *Ely Echo* guest editorial, former Ely city councilman and mining industry representative in Brazil, Bob Colombo, criticizes “anti-everything environmentalists” for making an unfair, hyperbolic argument that “looks past a hundred good things about a company” and focuses on their mistakes “as if ‘this is who they really are’” (EE, 03/03/2018). To prove his point, Colombo proposes a series of rhetorical questions: “Do you honestly think that BP wanted to lose a drill rig and eleven gifted employees in the Gulf of Mexico? Do you really think that Exxon really wanted to destroy an oil tanker on a reef in

Alaska? Do you actually believe that DuPont Chemical really tried to kill a few thousand people in Bhopal India? Do you really think that White Star Lines asked the ship's captain to hit an iceberg to see how their newest ship would respond?" (EE, 03/03/2018) After citing these examples of mining companies that profited despite their destructive mistakes, he argues that it is "today's anti-everything environmentalists" who are "masters at exploiting life's tragedies" (EE, 03/03/2018).

One company whose record is criticized by conservationists more than any other is PolyMet's owner, Glencore. Although Glencore reportedly "rejects the notion its record is bad" (ST, 07/13/2019), all the local outlets of study (except the *Ely Echo*) have reported critically on "labor issues (and) safety problems... at Glencore mines" (MP, 02/23/2018; MP, 03/14/2019), including acid runoff (MP, 06/28/2019), dam failures (ST, 06/29/2019), and alleged human rights violations around the world (TJ, 07/03/2018a), including the collapse of one mine in the Congo that killed dozens of artisanal miners (TJ, 07/31/2019; ST, 07/31/2019a).

Even the Trump Administration's Justice Department announced an investigation into Glencore's allegations of corruption in Africa (TJ, 07/03/2018a), which PolyMet reportedly failed to acknowledge publicly for months (TJ, 08/22/2018b). The investigation would be alluded to in future coverage by most of the local outlets studied (ST, 05/07/2019b; TJ, 11/01/2018a; MP, 06/28/2019; ST, 12/04/2018; ST, 06/27/2019; ST, 06/29/2019; ST, 07/13/2019; MP, 06/28/2019; MP, 12/06/2019; MP, 05/08/2019). Conservationists say the investigation affirms their skepticism of the company, and some furthermore draw attention to Glencore's "suspicious business dealings" with the Russian government and the prestigious award given to its CEO by Vladimir Putin (MP, 12/06/2019). The *Ely Echo*, on the other hand,

only very rarely publishes the word “Glencore.” In all their sampled coverage, the name appears briefly in 5 articles and guest editorials, with shifts in tone that reveal the publication’s apparent intent to obscure Glencore’s involvement in PolyMet or any potentially negative consequences of it (EE, 07/11/2011; EE, 04/14/2013; EE, 07/18/2018; EE, 03/22/2019b; EE, 07/27/2019).

Myth of Strict Enforcement.

While copper-nickel mining supporters accuse their opponents of ignoring the rule of law, those opposed say they want to improve it (ST, 11/30/2019). The idea that Minnesota has the strongest environmental regulations in the world is one of the most contested matters of fact in the controversy. Conservatives believe it — or at least repeatedly claim to — including DFL lawmakers (MP, 10/06/2008; MP, 03/06/2012; ST, 08/30/2019; EE, 09/05/2019), mining companies (MP, 12/04/2008; EE, 07/11/2011; EE, 03/03/2018; EE, 11/02/2018; EE, 05/17/2019; MP, 06/28/2019; TJ, 08/11/2019; ST, 11/30/2019), and activist groups like Jobs for Minnesotans (MP, 05/09/2019). Conservationists, on the other hand, believe the idea of the state’s strict laws is a “myth” that started during the governorship of Wendel Anderson in the 1970s, when Minnesota passed dozens of new environmental protections, such as the Minnesota Environmental Rights Act (MP, 09/10/2012; MP, 07/27/2016; TJ, 04/19/2017b; ST, 12/03/2018; TJ, 12/04/2018; ST, 04/17/2019b; ST, 02/28/2020).

But many consistently argue that, even if the state’s rules are strict, they are not well-enforced (MP, 03/16/2009; MP, 04/15/2014; MP, 11/30/2015; MP, 06/30/2016; ST, 05/04/2017; ST, 12/09/2019). While news outlets similarly denounce the poor enforcement of mining rules nationally (MP, 10/06/2008; WSJ, 12/15/2011; LAT, 08/13/2015; TJ, 05/29/2019),

some conservationists argue Minnesotans must be even more skeptical of state enforcement, concluding, “We may be Minnesota nice. We are not Minnesota stupid” (MP, 03/16/2009; MP, 03/10/2014; MP, 08/30/2019). Conservatives defend the state’s record of enforcement by claiming, “There is no scandal. The agencies have done their jobs... Enough of the fake news already” (EE, 07/25/2019; TJ, 08/01/2019).

Attempts to review or improve state laws is regularly met with “furious” opposition from pro-mining lawmakers and governors, who have said such rules are “not something for citizens to decide” (MP, 10/06/2008; MP, 12/04/2008; MP, 05/09/2019; ST, 05/10/2019; ST, 05/16/2019). Bills to improve enforcement modeled after legislation from neighboring states and Canada, for example, are routinely dismissed by conservatives as unnecessary and over-burdensome (MP, 01/24/2008; MP, 10/06/2008; MP, 12/04/2008; MP, 09/10/2012; MP, 04/25/2019). Meanwhile, laws that do exist in Minnesota, such as one prohibiting the approval of mines that require perpetual water treatment, as PolyMet likely will, are sometimes ignored (MP, 03/16/2009; MP, 12/11/2015; MP, 05/24/2017).

In one example, state rules intended to protect wild rice — the state grain of Minnesota with immense cultural significance to the Ojibwe, who hold the exclusive right to harvest it — have been “almost never enforced” nor updated since their establishment in the 1970s, despite the thorough, expensive state-sponsored studies that recommend they be heightened (ST, 12/05/2010; MP, 02/26/2014; ST, 04/07/2014; MP, 04/15/2014; MP, 02/17/2017; ST, 04/26/2018; ST, 05/09/2018; TJ, 05/23/2018; MP, 10/01/2018). While conservatives argue that enforcing the state sulfate limits would “destroy our local communities” (EE, 12/19/2017; ST, 05/09/2018; MP, 03/19/2019), conservationists invoke images of neurological damage to “the

developing brains of fetuses and children” to argue against them (ST, 04/26/2018). PolyMet, meanwhile, reportedly signaled that it does not expect to adhere to the rule (TJ, 05/23/2018), even while taking credit for having “voluntarily agreed” to do so in its permit application (TJ, 09/13/2019).

In sampled coverage, actors cite many instances of the state’s failure to enforce its pollution regulations on mining companies, like Reserve Mining, which temporarily poisoned Duluth’s drinking water in the 1970s (ST, 02/08/2020), and US Steel’s Minntac mine that polluted Iron Range waterways for more than 20 years (EE, 02/12/2018). In 2010, the MPCA granted two permit “variances” to the Mesabi Nugget taconite plant, exempting it from obeying Minnesota’s pollution limits, citing “undue hardship” on the company if it would have to purchase the clean-up technology required by state law (MP, 03/05/2009; MP, 05/23/2014). Soon after, the company partially shut down anyway, laying off 200 employees and “suddenly leaving dozens of families in Aurora to struggle to put food on the table” (ST, 05/02/2016). *Timberjay* editor Marshall Helmberger once scolded the MPCA for honoring the Cliffs Erie-Dunka wastewater treatment plant with an “Operator Award” for its “consistent compliance” with its water quality permit, despite its known “astronomical” pollution of heavy metals that the permit explicitly allows (ST, 05/30/2019; TJ, 06/26/2019b).

Under President Obama, the EPA began an investigation into the MPCA’s failure to enforce its air and water quality rules (TJ, 03/23/2016), which the state agency blamed on its lack of funding to hire staff to address its backlog of expired mining permits (MP, 11/30/2015). The DNR has its own lengthy backlog of mining restoration projects to complete, including a \$400 million remediation of a 12,000-acre estuary, where officials reportedly failed to

determine which of the many now out-of-business companies were responsible for pollution there (ST, 08/19/2019). In one example of successful enforcement, the Twin Cities-based Northern Metal Recycling plant agreed to move outside the city limits and pay \$2.5 million to the state for defying pollution limits set by its permits and falsifying records to hide it — actions that were revealed by a whistleblower within the company and never denied (MP, 07/07/2017; MP, 09/20/2019).

Other instances of successful enforcement of state law have come not from state agencies, but from courts. Since 2018, the Minnesota Court of Appeals has repeatedly suspended permits issued by state regulators, a trend that environmental law professor at the University of Minnesota Alexandra Klass explained is very rare, since courts usually defer to state agencies in these situations (TJ, 08/11/2019; ST, 02/01/2020). The same court, however, has also ruled against conservationists seeking to improve state mining laws (ST, 08/05/2019; TJ, 08/11/2019; MP, 08/12/2019).

Science

Scientific matters of fact could be seen as some of the most important in the entire debate. Knowing with certainty the risks posed to environmental and public health could considerably alter the dynamics of the controversy. All actors invoke science as a driving motivation behind their actions (ST, 11/03/2017; ST, 01/26/2018; ST, 06/19/2018; ST, 09/06/2018; ST, 09/07/2018; EE, 09/06/2019), and they continually accuse others of relying on bad science (EE, 06/25/2016; ST, 07/20/2017; TJ, 07/26/2017a; MP, 08/24/2017; MP, 09/15/2017; MP, 12/12/2017; ST, 01/09/2018b; EE, 05/02/2018b; TJ, 09/12/2018; MP, 09/18/2018; ST, 01/13/2020; ST, 01/21/2020a).

Environmental, Public Health Risks.

Weighing the significance of all these risks and more is the responsibility of every actor involved in the controversy. Most agree that no mining project should be allowed to proceed if it would significantly damage the environment or endanger human health. But many public health experts additionally agree that, “We don’t know what the public health effects are going to be” (MP, 10/24/2014), because “The work hasn’t been done to identify the risks” (TJ, 04/02/2016). Conservationists generally believe that science has shown the risks will be serious enough to justify opposition to hard rock mining, while conservatives trust the industry and argue there is not enough evidence to support claims against its safety (MP, 03/28/2016; TJ, 04/02/2016; EE, 10/09/2017; TJ, 10/24/2018; MP, 09/24/2019). What is agreed upon, however, is the primary source of potential risk: waste rock, which, once removed from the ground, must be stored in giant open-air “tailings basins” of toxic water contained by dams (MP, 01/24/2008; MP, 10/06/2008). PolyMet, for example, would create what one conservationist described as a mountain of waste rock the size of the Statue of Liberty at the doorstep to Minnesota’s interconnected system of waterways, or in other words, “a prescription for disaster” (MP, 12/06/2019, MP, 04/01/2019).

Acid mine drainage is the polluted runoff from mines and tailings basins that could chronically contaminate nearby waterways with sulfide and heavy metals (MP, 09/15/2017; NYT, 10/12/2017; TJ, 05/04/2019). While Twin Metals claims that the geology of the Maturi Deposit they intend to mine will be “non-acid-generating,” it is a “hotly-contested” question that Twin Metals calls a ‘basic misconception’ about the project (TJ, 07/18/2019). University research from 2014 has concluded it would generate acid drainage (TJ, 07/18/2019), and

former USFS officials have said such dams have contaminated nearby water sources even in more arid regions (TJ, 10/24/2018). PolyMet also faces questions of acid drainage. In 2016, the MCEA conservationist group criticized PolyMet's acknowledgment that its dam would be subject to at least some leakage for decades or centuries to come, while the company plans to build a barrier around the basin that they say would collect at least 90% of it (TJ, 11/02/2016).

According to the World Mine Tailings Failures group, 42 tailings dams have failed worldwide in the last 10 years, including the Brumadinho mine in Brazil (designed by the same engineers that have designed PolyMet's dam) (ST, 05/07/2019b). As of 2019, the US federal government has only monitored "some, but not all" of the nation's tailings dams, and it publishes no accessible database of dams with the riskiest "upstream" design, like PolyMet's proposal (WSJ, 10/15/2019). Of the 1,300 tailings dams the government does monitor, "roughly a quarter" are classified as being in life-threateningly hazardous conditions (WSJ, 10/15/2019).

One Iron Range citizen living in PolyMet's disaster evacuation zone near its proposed dam site expressed surprise to reporters who informed him that a dam collapse would "send a wave of waste as high as 9 feet and traveling at up to 25 feet per second" through his house, while his neighbor, a taconite miner, was reportedly not concerned with the risk (WSJ, 10/15/2019). PolyMet, meanwhile, said it intended to inform locals of the risks and its evacuation plan at a later time (WSJ, 10/15/2019).

Conservationists have said the "disturbing truth" is that hard rock mining pollution exposes people and wildlife to toxic levels of heavy metals that can cause brain damage and disease (MP, 09/24/2018). Similar, lesser risks have already been introduced to the state by iron ore mining, according to the MPCA and the Minnesota Department of Health, which

released a joint report that attributed thousands of annual deaths in the state to current levels of air pollution (MP, 07/30/2019). The Minnesota Public Health Association has explained how mercury moves through the food chain from bacteria in lakes, to fish, then human babies, especially in northeast Minnesota where 10 percent of children are already born with mercury blood levels that exceed federal EPA safety parameters (MP, 10/24/2014). Conservatives counter with claims that the iron-rich waters of Minnesota will prevent mercury methylation, something conservationists, scientists, and the Fond du Lac Band of Chippewa have disputed consistently (MP, 04/18/2014; TJ, 05/10/2018; MP, 10/18/2019).

In 2014, a group of 46 local doctors and the Minnesota Medical Association requested Gov. Dayton's DNR to declare PolyMet's environmental review inadequate for lacking proper toxicity pollution limits — an act that conservative Frank Ongaro of Mining Minnesota called “disingenuous... fear-mongering” (MP, 03/11/2014; MP, 10/24/2014). But when the state approved PolyMet's EIS without any additional health studies, state public health organizations published another “strongly worded critique” against it (ST, 11/18/2015; MP, 09/06/2019), arguments that have been supported by bipartisan politicians (ST, 08/13/2019). Just weeks later, however, the state health commissioner who had signed the critique surprisingly withdrew his criticism, flipping his stance and arguing that an additional health study would only delay the project “without adding new scientific information” that was not already considered during the EIS process (ST, 12/07/2015).

Some conservationists focus their arguments on the risks posed to wetlands and the wildlife that depend on them, including “the iconic moose” (MP, 02/21/2014), gray wolves and Canada lynx, (MP, 07/28/2017) wild rice (MP, 02/26/2014), and Minnesota's state bird,

common loons, which, “like humans, are at the top of the chain, and are at greatest risk” for mercury poisoning (MP, 12/12/2017). Although the US Wildlife Service announced that the PolyMet land exchange “would not result in significant harm” to wildlife, state scientists have disagreed, citing the low-quality scientific studies relied on by the mining industry (ST, 01/10/2017; TJ, 01/12/2017; TJ, 08/23/2017; MP, 05/24/2018; MP, 11/30/2018).

One set of regional risks that are relatively well understood regard climate change (ST, 12/15/2016b), which University of Minnesota scientist Lee Frelich said could “definitely tip the balance” of the state’s forested landscapes and cause massive damage to wildlife populations and people who depend on them — in addition to increasing severe storms and wildfires (TJ, 08/07/2018). In response to this challenge, the DFL has supported Gov. Walz’s efforts to transition the state to renewable energy sources by 2050 (MP, 04/25/2019), which some Republicans have called a “government takeover of energy” (ST, 12/11/2019). State power providers like Xcel Energy, meanwhile, are on track to reach the same carbon-free goal even sooner without compulsion (MP, 09/11/2019). Even the state GOP has reportedly pushed to “make it tougher to build new fossil fuel projects” in the state (MP, 12/30/2019). However, Republican state lawmakers also argue that the implementation logistics of renewable energies pose significant consequences, and some of these arguments go so far as to imply that anyone who is concerned about climate change is a “science denier” (ST, 12/11/2019).

From one perspective, hard rock mining in Minnesota is not expected to directly contribute significantly to climate change. Twin Metals’ proposal, for example, would produce about 58,000 tons of greenhouse gas emission every year, which is only 0.0015% of annual emissions from transportation statewide (MP, 12/18/2019a). However, some conservationists

argue the opposite and claim PolyMet is expected to release more than 700,000 metric tons of greenhouse gases every year, which Paula Maccabee of Water Legacy said equals “more than one-fourth of the CO₂ equivalent... for the entire city of Duluth,” while the sacrifice of just 1,000 acres of peatlands required to build PolyMet “would release 2.7 million tons of CO₂, increasing total Minnesota annual carbon dioxide emissions by 2 percent” (ST, 07/20/2017).

Technological Advancements.

Actors often argue about the effect of ongoing technological development on the dynamics of the controversy. In the late 1800s, improvements in scientific understanding led to prohibitions of dangerous methods of mining and waste management (MP, 08/26/2015). Other manufacturing advancements, however, have also resulted in a reduction of the industry’s job creation potential. According to conservationists, miners today produce three times as much ore as miners in 1980, indicating that advancements in technology could continue to mean fewer people employed by mines (WSJ, 07/28/2005; MP, 12/04/2008). Automation is one advancement that some argue will limit job creation. Many conservationists, including Obama’s Interior Secretary Tom Vilsack (MP, 12/06/2018), wilderness tourism business owners (ST, 10/20/2017), former miners (ST, 07/19/2017), and the Minnesota Department of Employment and Economic Development (DEED) (MP, 10/17/2018), consider automation a threat, at least partially to blame for the recent struggles of the international metals market and potentially responsible for a reduction in future job creation (ST, 03/11/2016a; ST, 02/04/2017; TJ, 08/01/2018; MP, 06/20/2019). The *Timberjay* even claimed “the miners of the future” will be computer programmers working remotely from urban areas (TJ, 06/06/2018). Twin Metals, on

the other hand, claims the threat of automation is “not a big issue” (TJ, 11/01/2018a; EE, 11/02/2018).

Other technological advancements have already proven damaging to mining in Minnesota. Development in steel mill technology, for example, is partly responsible for the decline in iron ore mining in the state, because the taconite pellets mined from Iron Range deposits are reportedly not “pure enough for the more modern mills that dominate the American steel industry” (LAT, 03/13/2016). Nevertheless, mining industry representatives, though some concede that the industry has had a bad record of safety, still believe that advancements in technology will ensure the safety of future projects (MP, 10/06/2008). Conservationists argue that such claims are full of “hubris” and have been consistently proven wrong with great, sometimes lethal, consequences (MP, 03/10/2014).

The news coverage of one story in particular highlights the dynamics between technological advancement and the potential mitigation of risk: the relatively new innovation of “dry stack” waste management as an alternative to tailings basins (ST, 09/27/2019). While PolyMet has consistently rejected using dry stacks, Twin Metals announced its intended use of the method in 2019, decisions that have engendered mixed reviews from actors on all sides. Conservatives, on one hand, defend PolyMet for declining the more expensive dry stack method as unnecessary, but they also celebrate Twin Metals for employing it as the best available technology. Twin Metals’ CEO Kelly Osborne, for example, said the decision makes their project “the most technologically-advanced mine in Minnesota’s history,” while also implying support for PolyMet’s decision not to use the same technology (TJ, 07/18/2019). While

the *Ely Echo* has always supported PolyMet’s dam proposal, it lauded Twin Metals’ dry stack decision for reportedly adding 50 more jobs to the project’s total job count (EE, 07/19/2019).

Some conservationists criticize PolyMet for ignoring the DNR’s one-time suggestion that it consider using dry stacks, arguing that the company was only trying to save money at the expense of safety (MP, 12/11/2015; ST, 11/03/2017; ST, 04/07/2018; ST, 06/08/2018b; MP, 07/18/2019; MP, 08/13/2019). But others have repeatedly cited different DNR statements that claim dry stacks are not suited for the uniquely wet environment of northern Minnesota (MP, 05/09/2019; MP, 09/06/2019). Furthermore, Becky Rom of the Campaign to Save the Boundary Waters called Twin Metals’ plan to switch to dry stacks “even worse” — comments that triggered the *Ely Echo* and conservative Nancy Norr of Jobs for Minnesotans to dismiss environmentalists’ concerns as unreasonably demanding (ST, 07/19/2019; EE, 07/19/2019). While the *MinnPost* wondered if the “political ramifications” of Twin Metals’ switch “may be as important as the logistical rewards” (MP, 07/18/2019), guest editorial columnist C.A. Arneson criticized it as “not an altruistic decision” but rather “industry spin” on the findings of a company study that reportedly cited regulations that would likely render their original plan to pump tailings via pipeline between watersheds illegal and impossible to get permitted (MP, 09/06/2019).

Economics

Most actors reportedly agree that the Iron Range economy, at least to some extent, is struggling due to the “layoffs and slowdowns” that have “crushed” its iron ore mining industry and resulted in the loss of thousands of jobs, countless local businesses, and nearly the administrative autonomy of entire townships (MP, 03/05/2009; LAT, 03/13/2016; TJ,

11/17/2017). Even local police told reporters they “don’t feel right, writing somebody a ticket in this economy” (ST, 05/02/2016). Conservatives especially reminisce on the region’s economic high times of the past, like one man who described an Iron Range pool table company with 50 employees that closed after “China was able to duplicate their design and... manufacture those tables at a fraction of the cost” (EE, 02/12/2018). Stories like these lead some mining supporters to believe “there’s no future” for their children on the Iron Range (WSJ, 07/28/2005), where “declining school enrollments” (EE, 07/14/2017) and “the empty storefronts in Ely” inspire dread (TJ, 07/11/2019).

Some conservationists, however, could not disagree more, referring to Ely as “the most robust economy of any town in the area, by far” (EE, 07/20/2016) with “more storefronts... more restaurants” and growing school enrollments (EE, 07/20/2016; TJ, 11/02/2016). Though *Timberjay* editor Marshall Helmberger admits an economic model of relying on wilderness resources is not “perfect,” he credits them, not mining, for creating Ely’s alleged “overwhelming” success today (MP, 09/19/2017). Conversely, the editors of the *Ely Echo* challenge conservationists who claim the Range is “not a particularly economically distressed region” (EE, 07/16/2017), while giving only a little credit to the outdoor recreation industry that brings business to Ely in the summer (EE, 01/02/2017). Meanwhile, other DFL politicians emphasize the value in attracting jobs in other technology and manufacturing fields — even those that support the existing taconite mining industry (ST, 08/13/2019).

In sampled news coverage, three significant matters of fact dominate the economic discussion: the interconnected roles of iron mining, wilderness resources, and the potential role

of a new hard rock mining industry. The following sections break down the arguments made about each of them.

Role of Iron Mining.

The role of taconite mining in the Iron Range's economy has been significant since the region's settlement in the 1800s. Today, however, mining employment makes up just 0.2% of the state's workforce, since dropping from 6,800 to 5,300 total jobs in the last two decades, despite the state's "booming economy overall" in recent years — according to the Minnesota Department of Employment and Economic Development (DEED) (MP, 10/17/2018). For comparison, the current number of those employed in the entire northeast Minnesota mining industry is much smaller than the 8,300 people who worked in Target's headquarters in the Twin Cities in 2018, but proportionally, they respectively represent 4% and 3% of their regions' workforces (MP, 10/17/2018). While mining industry representatives have attributed iron mining job losses to the low prices of foreign steel, DEED officials reportedly blame "a mix of automation and outsourcing" (MP, 06/20/2019). Furthermore, DEED notes that mining jobs, though few, are among the highest paying in the state (MP, 10/17/2018; ST, 12/30/2018). Nevertheless, in 2019 there were hundreds of available unfilled jobs in the construction and extraction industries statewide (MP, 10/30/2019; TJ, 10/30/2019a).

One factor of the economic reality of the Iron Range concerns the connection between iron mining and school funding, which began in 1881 with an amendment to the state constitution that established a relationship in which schools receive a direct portion of tax funding from the production of iron mines. Although the recent benefit for Ely schools has averaged only \$25,000 per year, which reportedly amounts to "less than one-half of one

percent of the district's annual budget," the conservative group Up North Jobs insisted the mining trust could raise \$3 billion for local schools in the next 20 years, if new hard rock mines open (EE, 07/13/2018). While conservatives use the school trust fund to justify their calls for more mining (ST, 01/21/2020a), conservationists and representatives of the Iron Range Resources and Rehabilitation Board (IRRRB) question the efficacy of the law and wonder why schools are not funded somehow else (MP, 05/14/2015; MP, 12/12/2017; EE, 02/12/2018; TJ, 09/06/2018b).

Another economic matter of fact regarding taconite mining concerns the growth of China. During the presidencies of Bill Clinton, George W. Bush, and Barack Obama, the United States helped normalize global trade with China, which consequently experienced a boom in its economy. In 2005, the *Wall Street Journal* credited "China's voracious appetite for steel" for creating the "genuine" boom in the production of iron in Minnesota (WSJ, 07/28/2005). But as China's economic growth slowed, global iron prices fell, and China began to produce its own steel, selling it at low rates to American manufacturers, who stopped buying the comparatively low-grade taconite from Minnesota (LAT 03/13/2016; WSJ, 06/05/2018). In the words of one reporter, "you may be able to get cheap Chinese steel, but China can't sell recreational opportunities on American soil" (NYT, 10/12/2017).

To improve the prices of US iron ore, President Obama imposed tariffs on Chinese steel in 2016 (LAT, 03/13/2016). Two years later, President Trump imposed more tariffs for the same reason (MP, 10/17/2018). While conservatives blame "illegal foreign steel imports" for the struggles of the Iron Range economy (ST, 05/24/2016) and credit Trump's tariffs for helping curb them (WSJ, 09/15/2018), some conservationists think tariffs will "make it more expensive

to use Minnesota taconite” and lead to the state subsidizing hard rock mining “the same way we’re subsidizing steel” (EE, 02/12/2018). State budget officials and the IRRRB would later credit Trump’s tariffs with helping the Iron Range economy, boosting domestic exports by 42% in one year (TJ, 08/22/2018a). But they also said Trump’s other tariffs on China “hurt (MN) soybean farmers and led to the lowest soybean prices in a decade” (ST, 03/02/2019).

To this day, the price of iron ore and steel on the international metals market is a significant driver of the region’s economic fate. When iron and copper prices were low in 2016, PolyMet claimed that would benefit them during the construction phase until they are “up and ready to go” when, they hope, prices may rise again (ST, 03/06/2016). In 2019, the tragic failure of the Brumadinho tailings basin dam in Brazil increased the demand for iron ore worldwide and improved prices in Minnesota, a benefit the *Star Tribune* said iron mining companies will likely experience for several years (ST, 03/02/2019).

Role of Wilderness Resources.

While mining supporters hold fast to the region’s mining past as a primary driver of economic activity, conservationists believe the area’s wilderness resources hold the key to its future. According to conservation groups, the outdoor recreation industry across the state creates 116,000 jobs and \$11.6 billion in consumer spending annually (ST, 07/19/2017). Regionally, the wilderness reportedly supports 17,000 jobs (most of them seasonal) and creates “\$850 million in economic activity each year” (MP, 03/28/2016; MP, 09/30/2016; MP, 04/12/2019).

Conservatives and the *Ely Echo* downplay the importance of the tourism industry (EE, 04/21/2018). Mining culture, not outdoor recreation, is what the paper believes will inevitably

save the community from economic ruin (EE, 07/20/2016; EE, 01/02/2017; EE, 04/24/2017; NYT, 10/12/2017; EE, 02/12/2018). They also claim that federal data shows visitorship to the Boundary Waters is in decline, further diminishing environmentalists' arguments of its value (EE, 03/13/2016; EE, 06/01/2017; TJ, 07/11/2019). Finally, conservative actors often accuse conservationists of failing to suggest economic alternatives to hard rock mining beyond seasonal tourism jobs (EE, 02/12/2018).

But the region's wilderness resources do more than prop up the outdoor recreation industry, which even some conservationists agree cannot be "the basis for a vibrant, year-round economy" (TJ, 09/12/2018). As *Timberjay* editor Marshall Helmberger says, "This isn't a question of mining jobs versus tourism jobs. That's a false argument made by people who should know better" (TJ, 09/12/2018; MP, 09/18/2018). Instead, the real value of the region's wilderness resources may be their ability to attract so-called "lifestyle residents," who, whether or not they work for or engage in the outdoor recreation industry, still support the region by moving there, paying property taxes, and participating in the local economy (TJ, 09/06/2018b). Some of these residents are retirees, commuters, or teleworkers with "solidly middle-class jobs," who have reportedly moved to the Iron Range to be near their "spiritual home - the Boundary Waters" (EE, 07/20/2016; TJ, 09/12/2018; MP, 09/18/2018).

As early as 2008, local news outlets were reporting on an influx of lifestyle residents "drawn to the sheer beauty of the region and its outdoor amenities" (MP, 12/04/2008). As one *Timberjay* report entitled "Ely's golden goose" claims, lifestyle residents, "many of whom are high income," already make up a significant portion of the economy, and if hard rock mining threatens to pollute the Boundary Waters — or if "Ely is seen as a community that's hostile to

new residents” — they might move away or avoid coming in the first place (TJ, 08/02/2017; MP, 09/19/2017; TJ, 09/12/2018; MP, 09/18/2018). Many conservationists have cited studies about the movement of lifestyle residents and called for efforts to attract them, including Aaron Klemz (MP, 08/16/2013), filmmaker Louis V. Galdieri (MP, 08/30/2013), Obama Agriculture Secretary Tom Vilsack (MP, 12/06/2018), DFL Senate candidate Richard Painter (EE, 07/18/2018), IRRRB Commissioner Mark Phillips (TJ, 09/06/2018b), Patagonia executive Adam Fetcher (MP, 09/24/2018), and more.

Role of Hard Rock Mining.

Actors regularly argue about one of the most important matters of fact: the likely impact that a new hard rock mining industry would have on the regional economy. Conflicting studies continually provide contrasting arguments with support, such as one 2012 University of Minnesota-Duluth study touted by conservatives that predicted widespread job creation has been repeatedly criticized by conservationists as “low-quality” (MP, 07/10/2014) and “highly outdated” (TJ, 09/12/2018; MP, 09/18/2018). They have countered with their own commissioned studies that show mining would result in an estimated loss of \$1 billion dollars in tourism, personal income, and property value (EE, 07/14/2017; NYT, 10/12/2017; TJ, 09/12/2018; MP, 09/24/2018; TJ, 07/11/2019).

In 2018, the *Star Tribune* editorial board called another pair of competing studies “a valuable public service” that voters should use “to push gubernatorial candidates” to provide clear stances on the controversy (ST, 08/21/2018; ST, 08/31/2018). First, a Harvard study celebrated by conservationists and the *Timberjay* said the Iron Range economy would be worse off 20 years from now if it adopts hard rock mining (EE, 03/17/2017; ST, 08/21/2018; TJ,

09/06/2018b; TJ, 09/12/2018; MP, 09/18/2018; MP, 09/24/2018; TJ, 10/24/2018; MP, 12/06/2018). In response, the Center of the American Experiment, a Republican-supporting think-tank, announced a “\$270,000 media campaign, including highway billboards, TV and radio spots, YouTube videos and other social media ads” to promote its study, which predicted extended economic benefits from new mining (ST, 08/21/2018). The arguments of this study were criticized by conservationists as disingenuous (ST, 09/06/2018).

Yet another study commissioned by a pro-mining organization contrasted the high wages of mining jobs with the low, seasonal wages of tourism jobs, but its predictions of economic benefit were based on a hypothetical increase of 5,140 mining jobs to the region, which is far more than the 1,060 direct jobs both PolyMet and Twin Metals combined claim at most they will create (EE, 04/24/2017; TJ, 10/10/2018). Furthermore, in its early predictions, PolyMet suggested that only 90 of its 360 directly created jobs “will go to local communities” (MP, 08/30/2013). Nevertheless, the *Ely Echo* published the claims of conservative lawmakers who reportedly said there were 5,000 long-term mining jobs at stake in the ongoing controversy (EE, 01/14/2017).

One related argument involves the state’s ability to educate and accommodate the highly trained individuals the mines will need to hire. The Northeast Minnesota Office of Job Training and the Northeast Higher Education District reportedly agreed that new mines pose a challenge to the local education and housing systems (MP, 10/30/2019; TJ, 10/30/2019). One state official even told reporters that she lives “in constant fear that we’re not doing enough” to train young professionals and build city infrastructure for them to live in on the Iron Range (TJ, 10/30/2019; MP, 10/30/2019). Though each proposed mine is only expected to operate for

no longer than several years, a Twin Metals executive once said, “If anybody tells you they’re short-term jobs, don’t believe them” (EE, 08/23/2019). In fact, the company had already let go of more than a dozen temporary jobs, as it fired 16 people from its Ely and Twin Cities offices in 2014 as part of expected phase-change operations (EE, 08/25/2014).

Finally, the effect of a new hard rock mining industry in Minnesota is entirely dependent on the resurrection and continued stability of the international metals market. Within this study’s sampled news coverage, several outlets have reported on numerous other mines that, though they had begun or completed their respective permitting processes, had either never been built or underwent large scale-downs of their proposals, due to their inability to secure funding (WP, 04/03/2007; MP, 08/30/2013; WSJ, 03/19/2015; TJ, 04/02/2016; TJ, 10/25/2017; TJ, 11/21/2016). The Pumpkin Hollow hard rock mine of Nevada, for example, though originally expected to produce twice as much ore than PolyMet, was scaled down before construction four years after it attained its permits, reducing its job creation capacity in the process (TJ, 09/07/2017; TJ, 04/03/2019). In 2008, the *MinnPost* reported on the “historically fickle” markets and the “boom-bust cycles experienced on the Iron Range,” where, in the 1980s, other prospecting mining companies with ideas to dig for copper-nickel “gave up amid a sinking metals market” (MP, 12/04/2008).

Though the price of nickel had fallen below PolyMet’s break-even investment threshold, the company repeatedly predicted that strong demand for copper and nickel would continue due to the growth of China’s economy and the worldwide “transition to alternative energy sources” (MP, 12/04/2008) and electric vehicles (TJ, 04/03/2019). But by 2016 as the DNR approved PolyMet’s final EIS, China’s economic growth had begun to decline, prompting the

Star Tribune to say the hard rock mining industry “is on its knees, brought low by a slowdown in the Chinese economy and global excess mining capacity” (ST, 03/06/2016). *Timberjay* editor Marshall Helmberger agreed PolyMet’s timing “is off — badly” (TJ, 02/03/2016). Both described the economic “super cycle” that experts say promised to sink metals prices further. The day PolyMet received its permit to mine, metals prices were still “well below” what was needed to reach its goal of a 30% return on investment, and, despite momentary jumps, they would continue to fall for years to come (TJ, 11/21/2016; TJ, 07/26/2017b; TJ, 09/07/2017; TJ, 08/22/2018). Even Glencore, the international behemoth, has occasionally suffered billions of dollars in losses due to poor metals prices (TJ, 03/04/2016).

With financial projections more than 10 years old, Twin Metals faces the same challenge of attaining profitability, even if prices return to all-time highs (TJ, 07/26/2017b; MP, 09/19/2017). By 2020, the *Timberjay* continued to report that low metals prices meant that “neither the Twin Metals nor PolyMet projects appear to be economically viable” (TJ, 01/16/2020), and that, with the current market, “you may as well light pallets of \$100 bills on fire” (MP, 09/19/2017). At the very least, according to the Federal Reserve Bank of Minneapolis, whichever investor pays for the mines’ construction will take “a little bit of a leap of faith” to trust that the international metals market will make it worthwhile (ST, 12/30/2018).

Questions of Ideology

The final type of arguments debated by actors in the network involves something far more difficult to understand than rules of war or matters of fact: questions of ideology. What do actors *believe* to be right or good? What do they *want* to see happen? These involve opinions that cannot be changed by the force of reason alone. The general ideological

distinctions between sides have been discussed throughout this paper, but the following sections focus on some of the most important values they debate in sampled coverage. In relation with previously described arguments about the perceived rules of war and determinative matters of fact, these questions of ideology may help explain (or better, describe) why the dynamics of the actor-network are what they are.

Is This the Beginning (of the End)?

One major ideological argument involves the precedent-setting potential of PolyMet and Twin Metals. Most actors believe that, if they are approved, other mines to follow would be bound to be approved, too. Therefore, the stakes are perceived to be greater than the two proposals immediately at hand. Since as early as 2008, conservatives have consistently claimed that PolyMet's approval would signal the beginning of a "new era" of mining projects, and any attempts by conservationists to stop it were framed as attempts to stop all hard rock mining proposals that could come after (MP, 01/24/2008; MP, 10/06/2008; MP, 07/10/2014; MP, 08/24/2017; MP, 09/15/2017; EE, 10/27/2017; EE, 11/15/2017; EE, 01/23/2019; MP, 05/09/2019; TJ, 12/13/2019). Mining company executives, for example, have even used the analogy that "PolyMet is the snowplow," clearing the path for future mines (MP, 02/17/2017).

Furthermore, mining companies and their supporters have consistently held exceedingly positive opinions about how soon hard rock mines could be able to start production in the Iron Range (MP, 12/21/2018). Companies like Franconia, which in 2008 announced its intentions to start mining in 2011, have since been indefinitely stalled or abandoned (MP, 10/06/2008). In 2008, PolyMet believed it would have its permits within the year (MP, 01/24/2008). In 2012, PolyMet said it would start production by 2014 (MP, 03/06/2012). In 2018, they guessed

construction would start the next year (MP, 12/21/2018). Conservationists, concerned that PolyMet's approval will lead to more mines, criticize such ambitions and the "never-ending series of optimistic timelines" (TJ, 04/03/2019) as short-sighted and dangerous to the prospects of future generations (WSJ, 03/19/2015; MP, 03/28/2016; MP, 07/08/2016; MP, 05/24/2017; ST, 01/09/2018b; TJ, 09/12/2018; MP, 09/18/2018; ST, 12/20/2018; TJ, 05/29/2019). One common conservative mantra reflects politicians' efforts to encourage the public to expect mining to start soon: "It's time to mine" (EE, 02/12/2018; TJ, 03/22/2019; EE, 07/25/2019; TJ, 08/01/2019).

Today, PolyMet has its permits, but it has not yet deflected the legal challenges against them and so remains "even further from opening than it was" (MP, 01/14/2020). In fact, many of the questions first posed to PolyMet before 2008 have still not been answered to this day (MP, 12/04/2008; TJ, 08/22/2018b; TJ, 09/25/2019; MP, 09/30/2019; MP, 12/06/2019).

What about Boom and Bust?

The inherently uncertain reality of mining industries is, for the most part, not debated between actors (WSJ, 07/28/2005). Whether or not the region should accept these known risks of boom and bust, however, is. Conservatives are aware of the risks, as evidenced by their many attestations to the devastation of the "very alarming and scary" bust periods that have plagued the region's iron mining industry, such as when US Steel laid off nearly 600 workers from its Iron Range Minntac mine and one mining supporter admitted, "Boom or bust... It's part of the business" (MP, 03/05/2009). More recently, one pro-mining DFL state senator said, "When the steel industry gets a hiccup, the Iron Range gets the flu... And we can change real

quickly” (ST, 03/02/2019). Another even said the last bust had turned the Range into a “dead community” (EE, 06/01/2017).

One Twin Metals executive discounted “rumors” that the copper-nickel industry could ever bust, due to the amount of mineral deposits in the area (TJ, 11/01/2018a).

Conservationists’ claims to the contrary, however, do not concern the amount of minerals available to mine, but rather the international metals markets that have always determined how mines perform. There could be enough mineral deposits to busy mines for hundreds of years, but if doing so would not be profitable to investors soon, it would not happen (EE, 07/14/2017; TJ, 08/01/2018; TJ, 10/10/2018).

Nevertheless, mining supporters are usually portrayed as eager to return to an economic golden age of a mining boom. As PolyMet got its permits approved in 2018, the news reportedly “hit like a thunderbolt” buzzing through local bars in “towns left for dead by the mining industry’s last bust in the 1980s,” giving Rangers a feeling of “redemption” (ST, 11/11/2018). Although some local city council members said they “don’t think anybody is anticipating another boomtown era,” the *Star Tribune* reported widespread expectation of a return to the region’s “glory days,” as evidenced by political campaign signs, which reportedly “summed up the town’s mood: ‘Go PolyMet’” (ST, 12/30/2018).

Why (Not) in My Backyard?

One ideological argument asks which is most valuable to national security: hard rock metals or clean water? Conservatives argue that copper and nickel must be mined domestically to prevent countries like China from restricting access to them in the future (TJ, 08/01/2018). They even argue that this justifies using the provision within the 1978 Boundary Waters

protection laws that allows the US President to permit mining in the wilderness area for such “emergency” purposes (TJ, 07/11/2019).

Conservationists, on the other hand, have consistently argued that clean water resources are both far more valuable and scarce (MP, 03/16/2009; MP, 12/12/2017; MP, 02/23/2018; TJ, 08/01/2018; TJ, 05/04/2019; TJ, 07/11/2019). They believe risking the health of the region’s waterways and Oglala Aquifer is “foolish,” (MP, 03/24/2014) because of the immense monetary value associated with clean water, as states like California have recently had to pay huge fees to their neighbors for access to it (MP, 02/17/2017; MP, 08/24/2017; MP, 09/24/2019). Furthermore, at least one conservationist has argued that companies like Apple, which buys copper and nickel to produce cell phones, will find better suppliers from mines that do not pose extreme environmental risks or commit human rights abuses, if consumers demand it (ST, 01/28/2020).

The *Ely Echo* agrees with conservatives that if environmentalists cared about protecting nature, they would not want copper-nickel mines built outside the US, where “there are little or no environmental protections,” asking, “don’t we all live under the same sun?” (MP, 03/16/2009; EE, 07/30/2017; EE, 02/12/2018; ST, 12/11/2019) But conservationists disagree, claiming such arguments are made disingenuously, especially by mining giants like Glencore and Antofagasta with numerous reported records of human rights violations (MP, 03/16/2009; MP, 03/10/2014).

Which Watershed Matters More?

The general understanding between actors in the network is that Twin Metals could endanger the Rainy River watershed, which includes the Boundary Waters to the north, while

PolyMet could endanger the St. Louis River watershed, which includes Lake Superior to the southeast. This factual distinction makes all the difference in determining which actors support or oppose which project. As a matter of ideology, however, actors debate the question of which watershed is intrinsically more worthy of protection — the one that contains a pristine wilderness, or the one that contains many diverse communities that rely on the clean water and natural resources there.

On one hand, many conservationists and former Gov. Mark Dayton emphasize the unique qualities of the Boundary Waters wilderness as the most important place to protect, justifying their expressed opposition to Twin Metals, but not necessarily PolyMet (MP, 03/28/2016; EE, 04/09/2016; EE, 05/27/2017; EE, 07/14/2017; MP, 04/12/2019; ST, 01/22/2019). Becky Rom of the Campaign to Save the Boundary Waters argues in part that Twin Metals should be scrutinized more than PolyMet, because the former seeks to mine “minerals owned by the American people” on USFS land, whereas the latter seeks to mine privately owned deposits (ST, 03/23/2016). *Timberjay* editor Marshall Helmberger is one conservationist who has consistently opposed Twin Metals, arguing that near the “pristine” wilderness of the Boundary Waters is “literally the worst place in the world” for hard rock mining (TJ, 12/22/2016; MP, 05/24/2017; TJ, 09/12/2018; MP, 09/18/2018). Even the conservative PolyMet supporter US Rep. Rick Nolan (DFL) said there is “no way” he would advocate for PolyMet if it could “in any way harm the Boundary Waters” (TJ, 11/29/2017).

On the other hand, those who represent the interests of the Fond du Lac Band of Chippewa and the people of Duluth and neighboring towns argue that healthy drinking water for these communities is more important than preserving a wilderness area (MP, 07/08/2016;

NYT, 10/23/2016; MP, 02/23/2018; ST, 08/27/2019; MP, 04/01/2019). They accuse Gov. Dayton (EE, 10/27/2017), Obama-era USFS officials (TJ, 05/04/2019), and former DNR Commissioner Tom Landwehr (MP, 03/19/2019) of hypocrisy for exclusively defending the Boundary Waters as “a sacred, virginal, pristine wilderness,” because, “there is *de facto* racism in placing the romantic attachment of outdoor enthusiasts... over the interests of the Ojibwe” (MP, 09/12/2019).

For conservatives, mining can also “seem romantic... that this is what made us great and if we have it again we'll be great again,” while most deny that mining could cause any damage to either watershed (WP, 04/03/2007). As Twin Metals executive Dean DeBeltz said, “It doesn’t matter what watershed you’re in, you can’t pollute it” (EE, 12/18/2019). Despite these beliefs, some conservatives argue that polluting the Boundary Waters will not matter anyway, because “in 10 years nobody would even notice because nobody will be going there” (EE, 03/13/2016). Nevertheless, Twin Metals often obscures its proximity to the Boundary Waters altogether. Though it is true that its proposed mine would not be located directly in the wilderness area, it is unquestionably upstream of it in the same watershed — something DeBeltz tries to deemphasize to the *Ely Echo*, saying the mine “is not in the Boundary Waters, but it is close, and we do recognize that” (EE, 04/03/2017; EE, 11/02/2018). Many conservatives use the same argument, and some refer the mine’s proposed location as “fully outside the Boundary Waters... and its buffer zone” (EE, 03/09/2019; ST, 08/30/2019; EE, 09/05/2019; EE, 09/06/2019; ST, 11/30/2019; ST, 01/21/2020a).

Certain conservationists, however, promote research by the Great Lakes Indian Fish and Wildlife Commission that suggests PolyMet could in fact pollute both watersheds — claims the

company and its supporters have repeatedly denied as “terrible misinformation” (MP, 12/11/2015; MP, 08/24/2017; MP, 09/12/2019). While most environmentalists would agree that risking both watersheds is worse than risking just one, some have occasionally argued the opposite. For example, Twin Metals’ original plan to use a tailings dam would have required it to pump toxic water across the watershed boundaries from the mine on the north side to a basin on the south side, thereby potentially endangering both watersheds. But when it announced its switch to an intended dry stack waste storage facility on the north side, the Campaign to Save the Boundary Waters criticized the closer proximity of the waste to the Boundary Waters and called the plan “even worse” (TJ, 07/18/2019; MP, 09/06/2019). Conservative Mining Minnesota director Frank Ongaro agreed and furthermore supported the company’s plan to pump waste across the watershed divide as a means to help protect the Boundary Waters (ST, 02/07/2019). The *Ely Echo*, on the other hand, described the move as a good thing without mentioning any risks to either watershed (EE, 05/25/2018).

What do Native Groups Want?

Although tribal actors have been active in the controversy for decades, their perspectives are the least well-reported. Almost always, articles about opposition to hard rock mining do not mention native perspectives at all, and when they do, only very rarely are indigenous stakeholders given the opportunity to speak for themselves; more often, their perspectives are described by others (NYT, 10/23/2016; NYT, 05/17/2018). When tribal members are given interview space, they reveal their consistent opposition to hard rock mining. In Wisconsin, an Ojibwe tribal leader said, “People care about jobs, but also we’re going to eat, breathe and drink the environmental impacts (of mining)” (WSJ, 12/15/2011). On the east

coast, an Ojibwe activist said theirs is “a movement toward something with love. You're doing it because you love these rivers” (WP, 10/17/2016). In Minnesota, Fond du Lac Chairwoman Karen Diver opposed PolyMet because, “Prevention is cheaper than restoration, and restoration may not always be possible” (MP, 05/23/2014).

A common argument made to discredit the opposition of indigenous actors to hard rock mining is that they have missed their opportunity to dissent. Conservatives like Nancy McReady claim that “activists” expressed their opposition too late (ST, 08/16/2019). The *Ely Echo* likewise insists, “Throughout the entire (PolyMet permitting) process, the Forest Service consulted with (native tribes)... to protect cultural resources” (EE, 01/09/2017), but they do not mention that these same stakeholders have been strongly publicly opposed to PolyMet but routinely dismissed by state decision makers for more than a decade (MP, 05/23/2014; ST, 05/16/2019; ST, 09/11/2019; ST, 03/23/2020). For example, although the state allows tribal representatives to sit on a committee intended to identify impacts that hard rock mining is expected to have on wild rice, MPCA Commissioner John Linc Stine reportedly complained that incorporating the criticisms of indigenous actors required additional work, which the *MinnPost* called a “tall order in a part of the state that is always desperate for jobs” (MP, 05/23/2014). For four years, tribal concerns from the wild rice committee were “relegated... to footnotes” and ignored repeatedly (MP, 05/23/2014; ST, 06/14/2019).

In 2014, however, Minnesota Ojibwe groups convinced the EPA to reverse its approval of the MPCA’s variance that had allowed the Mesabi Nugget iron ore mine to pollute waters beyond levels agreed to in its permits (MP, 05/23/2014). The indigenous stakeholders achieved this by arguing that their treaty rights required the agency to enforce state pollution limits.

Rather than allow the courts to set a precedent of agreeing with this argument about treaty rights, the federal government stepped in to force the MPCA to enforce its permit in this one case (MP, 05/23/2014). The *Ely Echo* seems to downplay the significance of treaty rights by framing them as “hunting and gathering rights” without explaining what they mean or why they were granted (EE, 01/09/2017). But as conservationists clearly argue, “a treaty (guarantee) of rice gathering is meaningless if there is no rice to harvest” (MP, 09/12/2019).

The conservative argument that “those of us who were born here, have lived here and worked here for all of our lives, and taken care of the land and water here, don’t get much say in most of these matters” (EE, 06/25/2016) ironically resembles an argument inherent to the position of indigenous groups, which could arguably make a stronger claim of authority on these same grounds. Conservatives, however, do not acknowledge this resemblance. For example, after the Mt. Polley dam burst in Canada, Michael A. Cole of Minnesota Miners criticized indigenous communities for declining to fish in waters polluted by mining companies, claiming they “have chosen of their own accord not to take part in the salmon fishing season even though there is no proof of contamination” — a claim that scientists and the local indigenous people dispute (MP, 02/23/2018; MP, 03/01/2018). On the other side, well-intentioned conservationists seem not to realize the subtle ignorance of some of their arguments that arguably involve the over-romanticization of native history and exploitative patronization (NYT, 05/17/2018; ST, 03/05/2020).

Who Cares Who Pays?

A well-known ideological divide concerns the funders of the proposed mines. While conservationists have criticized pro-mining politicians (both Democrats and Republicans) for

taking campaign contributions from mining companies (TJ, 07/19/2018), conservatives like Ely Mayor Chuck Novak openly denounce their rivals because, “They get all their money from the other side” (TJ, 09/05/2019). Glencore and its owners, for example, are consistently criticized by conservationists and news outlets as potentially untrustworthy investors, while conservatives and the *Ely Echo* defend them. The *Timberjay* describes Glencore’s founder, Marc Rich, as a “fugitive financier” in three articles (TJ, 07/03/2018a; TJ, 08/22/2018b; TJ, 06/27/2019a) and criticizes US President Bill Clinton, who on his last day in office in 2001 pardoned Rich for 65 criminal charges of tax evasion and violating international trade sanctions (TJ, 07/03/2018a; MP, 06/28/2019; ST, 07/13/2019). The *MinnPost* editorial board wrote its first criticisms of Glencore in 2011, when they noted that Rich had been both a member of the FBI’s top-10 most-wanted criminals list and a donor to President Clinton’s campaign (MP, 07/26/2011).

This reporting came after Glencore’s 2011 hiring of Tony Hayward, the former CEO of BP responsible for the Deepwater Horizon oil spill, the same year it purchased another \$1 billion Australian mining company, bringing its yearly profit to \$6 billion (NYT, 08/24/2011). At the time, Glencore owned other mines in Peru, Argentina, Kazakhstan, the Philippines, Zambia, and the Congo (WSJ, 07/18/2011). After Hayward became chairman of the company in 2014, the *MinnPost* consistently reminded its readers of his history at BP (MP, 06/13/2018; MP, 06/28/2019). So, too, did many conservationists (MP, 09/26/2014; TJ, 05/09/2018; TJ, 06/27/2019a; MP, 06/28/2019; MP, 12/06/2019), who believe the foreign billionaires who own PolyMet and Twin Metals are inherently not to be trusted, because they are said to care more about their financial prospects than the safety of Minnesota’s environment or people (MP,

07/26/2011; MP, 09/10/2012; MP, 03/10/2014; ST, 04/07/2014; MP, 04/15/2015; ST, 03/06/2016; MP, 07/08/2016; MP, 12/12/2017; EE, 02/12/2018; TJ, 04/27/2018; MP, 06/13/2018; TJ, 06/13/ 2018; MP, 09/24/2018; ST, n.d.).

Some have also criticized PolyMet for agreeing to give Glencore the rights to sell its metals to Chinese firms, thereby meaning all “profits made by PolyMet will flow to destinations far from Minnesota” (MP, 03/24/2014). As DFL Senate candidate Richard Painter argued, the “old model” of mining demanded mines be owned by American citizens who would “raise their children and spend their time and money there” for generations (TJ, 05/09/2018). *Timberjay* editor Marshall Helmberger believes that, with companies as large as these, “the hopes and dreams of local residents, politicians, and newspaper editors, count for exactly nothing... In the end, it’s always about the bottom line” (TJ, 02/03/2016). The editors of the *Star Tribune* have called the Luksic family who owns Antofagasta “one of Chile’s wealthiest families” (ST, 10/23/2019) that “doesn’t work out of Ely, of course,” instead hiring “friendly local faces” to do their work in Minnesota (ST, 11/23/2019b). Meanwhile, their columnist Lee Schafer said, given Glencore’s other holdings, “it’s hard to imagine the board of directors (cares)” about the relatively minuscule profits they stand to make from PolyMet (ST, 06/29/2019).

But to some conservatives, the foreign billionaires involved are honorable (EE, 03/03/2018), and their investment is a “fortunate” thing for the region (EE, 07/27/2019). In one revealing editorial, the editors of the *Ely Echo* said they were “a bit puzzled why the anti-mining crowd is opposed to foreign investment,” even citing China as an example of a nation to whom the United States owes a great debt, literally and figuratively, because “without foreign investment, our country would be bankrupt” (EE, 04/14/2013). The paper mocks

environmentalists' "outrage" that Minnesota mines would "sell out to foreign investors," asking them to, "Please explain why this is bad?" sarcastically writing, "Here's a news flash: Minnesota's resources are already for sale to the highest bidder" (EE, 04/14/2013).

Is There Any Other Way?

Actors throughout the network often act as if there are only two possible outcomes of the controversy: either the mines should be allowed as proposed, or they should be rejected entirely. Only rarely does anyone propose compromising solutions or envision resolutions to the so-called "war" that involve anything other than unconditional surrender from the other side (EE, 02/12/2018). Conservationist JT Haines, for example, is the only actor in the sampled coverage to suggest the concept of a publicly owned mine, when he asked, "What if the state... owned 100 percent of the profits, minus a reasonable fee for the work that produced it, rather than multinational corporations owning the profits and paying taxes on a portion of it?" (MP, 09/26/2014) The state's current dependence on billion-dollar corporations is considered a natural result of a capitalist society, but he calls the government subsidization of such projects "resource-based corporate welfare" (MP, 09/26/2014) and criticizes the state for failing to consider such alternatives to an all-or-nothing approach to mining (MP, 02/23/2018).

Even while they criticize their opponents, actors on all sides sometimes try to lend credence to the concepts of compassion and compromise, like the *Ely Echo*, which applauded the International Wolf Center and other tourist-based businesses that fill the streets of Ely with life "during the busy summer season" (EE, 01/02/2017), and *Timberjay* editor Marshal Helmberger, who claimed to "share the frustration" of mining supporters on "the seemingly endless struggles of the region's economy" (TJ, 12/22/2016). While some conservationists

disparage compromise by saying, “We can’t pursue both smokestacks and the outdoor amenities... because one strategy defeats the other” (MP, 08/16/2013), some make calls for everyone to stop “speaking in echo chambers (and) get outside of our comfort zones” (EE, 12/08/2017). Some conservatives, meanwhile, decry opponents for their “offensive... fear-mongering... radical” approach, while claiming to make their own “heartfelt appeal to work together” (MP, 04/18/2014).

The voices of young people are a small minority of those apparent in sampled coverage, but they may be some of the most eager for compromise. Graduate student Bria Raines, for example, expressed her skepticism of wealthy mining companies, while still empathizing with mining supporters of the Iron Range and their “understandable” goals of seeking new “means of revitalization” (MP, 09/24/2019). The Twin Cities-based sister of Dan Forsman, the Iron Range miner interviewed in the *New York Times*’ infamous “Water War” article, provided another unique perspective, when she explained, “I’ve got some really liberal friends, some hippie friends (in the Twin Cities), then I go home and talk to my family, who are all serious mining supporters... I do feel like there is a middle ground, and I often feel very trapped in the middle” (NYT, 10/12/2017). Independent journalist Aaron Brown is cited as an expert source in at least seven *MinnPost* news articles to share his unique perspective, which walks the line between ideological divides in a way that few other actors in this study’s sampled coverage do (MP, 7/10/2014; MP, 08/01/2018; MP, 06/27/2018; MP, 06/28/2019). Such perspectives that sympathize with local people’s frustrations (MP, 06/13/2014) and highlight the common “emotional struggles” of identity shared by all actors could best help self-described opponents

acknowledge their common values and ameliorate polarization (MP, 11/12/2015; MP, 11/02/2018).

Chapter 6: Conclusions

Revisiting the research objectives (RO) of this thesis, this paper concludes that the hermeneutic analysis of newspaper coverage employed in this study (RO #1) has empowered the comparison of actors' associations and arguments (RO #2) and helped produce the encyclopedic reference resource of the Findings and Discussion chapters (RO #3). Having cataloged the actors, traced their associations of identity, and rigorously analyzed their arguments, this process has helped answer the study's research question by identifying those involved and reporting on their statements, relations, and actions. Nevertheless, it concludes without necessarily providing a conveniently satisfying narrative explanation of the actor-network, because ANT-CC insists that cartographic descriptions remain more or less unannotated by researchers. This chapter, therefore, is not a comprehensive evaluation of the situation nor instructions for navigating it completely. Rather, it synthesizes the Findings and Discussion chapters and provides guidance for readers to develop their own opinions on what to make of them. Finally, the paper ends by describing the limitations, contributions, and future directions of this experimental research project to academic and journalistic communities.

Controversy Description

The approval processes of PolyMet and Twin Metals' proposed mines are complicated, and their multi-faceted nature may not be communicated well by news media. As portrayed by sampled coverage, Twin Metals has faced three main challenges, including securing renewal of its federal mineral leases, navigating a potential 2-year USFS study, and submitting its mine plan application. PolyMet, deeper into the approval process than Twin Metals, has reportedly faced

more challenges, including approving its environmental impact statement, securing investment from Glencore, finalizing a USFS land exchange, guaranteeing financial assurance to the state, and receiving most of its permits from state and federal agencies. For Antofagasta, the election of President Trump and the reversal of President Obama's mining decisions gave Twin Metals new life as it neared the deadline to forfeit its federal mineral leases. For Glencore, its inevitable buyout of PolyMet in 2019 was part of a long-term strategy that persisted through consistent declines in international metals markets. Though both companies have made much progress, they must still face key reviews, approvals, and investigations. These chronological events, as observed in sampled coverage, make up the skeleton of the actor-network, upon which this final description of the controversy is developed.

The classic binary narrative frame common through sampled coverage reduces the wicked problem to a two-sided dispute and affects how stakeholder groups define their identities and inform their decisions. Reflecting analyses of similar controversies (Fahy and Nisbet, 2011; Lück et al., 2018; Schäfer, 2017; Sumner et al. 2014; Williams 2015), all sampled news sources in this case rely heavily on corporate, government, and activist sources, deferring consistently to certain actor groups or spokespeople to provide expertise and reaction to every news event. Often, news outlets predictably quote the same direct statements from actors' press releases, rather than questioning the face value of these statements or investigating stories in unique ways. Though concepts of journalistic fair balance encourage reporters to give interview space to the so-called "both sides" of a controversy (Fahy, 2017), it may also be true that the objective, apolitical nature of news discourse of this debate obscures scientific perspectives and exacerbates the cultural and political tensions between groups (Kojola, 2018).

On the conservative side, the many distinct perspectives of international mining companies, national labor unions, and local economic support groups are classified as pro-mining. On the conservationist side, actor groups represent another wide array of conflicting values and objectives, from wilderness preservation and outdoor recreation interests to indigenous governments and environmental justice advocates. Whereas the former often frame wilderness as pristine, uninhabited, and at risk of being spoiled by land development, the latter emphasize the ecological value of the land as an important resource to be managed responsibly and equitably (Dousa, 2012; Spoel, 2018; Walker, 2017).

As the diversity of actor sub-divisions becomes clear, so too does the inappropriateness of the two-sided narrative framing that is undoubtedly ill-equipped to communicate the complexity of the controversy. It is likely responsible for over-simplifying the debate and preventing marginalized voices and nuanced discussions of compromise from being able to influence discourse or decision-making (Heffron & McCauley, 2018; Kojola, 2017; Rinke et al., 2013). Therefore, this study concurs with other assessments of Minnesota's hard rock mining controversy that show how oppositional stakeholders refine and justify their arguments based on conflicting identifications and polarizing emotions more than on the potential material outcomes or relevant matters of fact (Fent & Kojola, 2020; Kojola, 2018; 2019a; 2019b; 2020a; 2020b).

Political polarization is likewise apparent in sampled coverage. While anecdotal evidence exists to suggest many Iron Rangers who voted for Donald Trump in 2016 may have voted for the democratic socialism of Bernie Sanders if he had been the Democratic Party nominee — indeed, Sanders beat Hillary Clinton by a wide margin in the 2016 MN Democratic

caucuses both statewide and in the Iron Range — Kojola (2018; 2019a) argues that “extractive populism,” a conservative political movement defined by its opposition to environmental causes and support of neo-liberal corporate nationalism, increased in popularity on the Iron Range around Trump’s election. But even though his Republican associates in Minnesota, like US Rep. Pete Stauber, won their races with his endorsement, Trump lost the support of Iron Range voters in 2020, further demonstrating the political complexity of the region.

Categorizing actors’ diverse arguments provides insight into the complicated spectrum of opinions that exist on either side of the debate and further exposes the binary narrative as an ineffective frame. Echoing other studies of mining controversies, classic arguments such as the “technological shell game” and “hypocrite’s trap” are shown to be used by mining supporters to discredit their opposition and attain social licenses to mine (Curran, 2017; Didyk et al., 2018; Paliewicz, 2018; Vela-Almeida et al., 2015). Actors argue most about the rules of public debate, in which opponents universally criticize one another for employing some of the same strategies they utilize themselves. Constant references to the allegedly fair “process” by which each side expects the other to obey are confused and unclear, made to criticize others for deviating from certain standards of transparency, committing process violations by acting out of turn, or utilizing unscrupulous tactics. Both sides only cast such accusations of conflicts of interest when their rivals — and not their allies — are expected to be implicated in wrongdoing.

Following these rules of public engagement, actors adopt various avenues of activism to achieve their goals. Lobbying efforts are dominated by mining companies and industry lobbyists, but the relatively minuscule fundraising of grassroots groups is also treated seriously by opposing sides. While PolyMet and Twin Metals use community charity contributions and

advertisements at youth sporting events to earn support for their mining proposals, conservation groups organize media events to raise awareness for environmental protections. Protests, pickets, strikes, lawsuits, and boycotts are only some of the more aggressive strategies both sides have employed, while supporting the Congressional, executive, and judicial actions intended to suit their immediate interests.

Arguments about the rule of law have long been essential to the controversy (Maccabee, 2010). State agencies have spent tens of millions of dollars or more on lawyers and scientific studies to justify their political decisions, while they maintain extensive backlogs of uncompleted remediation projects statewide. Nevertheless, conservatives believe that Minnesota's environmental regulations are among the best and most strict in the world, and conservationists argue they are both weak and under-enforced. Care must be taken to differentiate between the record of iron mining from the relatively more risky copper-nickel mining, though there are numerous examples of pollution and broken promises from both industries.

Arguments about scientific matters of fact are not the strongest drivers of political or cultural change, but they are nonetheless important to all actors involved. The effects of potential hard rock mining pollution ultimately make up the core argument against copper-nickel mining. If these effects did not exist, PolyMet and Twin Metals would likely be treated as any other taconite mine and accepted without much controversy. Instead, the risks of chronic pollution from tailings basins, dramatic failure and collapse of their dams, and numerous other ecosystem effects are limiting consequences that come as tradeoffs to the industry's plans (Frelich, 2019; Meyers, 2016; Onello et al., 2016). More research is required to understand any

potential effects of waste rock acid drainage, heavy metals pollution, dam collapse potential, and other environmental consequences (Jones et al., 2017).

As technology advances, mining processes could become safer, but automation and other manufacturing developments may also limit the job creation potential of future mines. The role of taconite mining on the Iron Range may continue to diminish, but many nevertheless have faith in the profitability of copper-nickel mining, despite the ongoing global super-cycle that has reduced the values of these metals in recent years. Numerous academic studies justify arguments on both sides, and an alliance could begin to develop between hard rock mining companies and proponents of the green energy revolution who need copper and nickel to build wind turbines, solar panels, and electric vehicles. Whereas some actors disparage the role of the outdoor recreation industry, many conservationists argue that it is the continued influx of permanent lifestyle residents — not seasonal tourism, nor temporary mining industries — that stands to benefit the local economy in the long term, on the condition that new mines do not poison waterways with pollution or divide small towns with political tension.

Arguments of ideology pose additional controversial challenges for those involved, virtually all of whom agree that harmful pollution from industrial projects should not be tolerated anywhere in the state. Despite their many shared values, opposing groups exhibit diverging attitudes, behaviors, and beliefs about the likely success of PolyMet and Twin Metals' proposals. Most are skeptical of big money from corporations and special interests, and all acknowledge, to some extent, the potential environmental risks and the boom-and-bust nature of mining economics. Nevertheless, debate continues on the dozens of sub-arguments present throughout the controversy, as it may for a long time.

Contributions & Limitations

As explained earlier, this study is not a demonstration of positivist research. It is a qualitative, holistic review of a complex social controversy, and it comes with several limitations. First, newspaper articles are only one of many media relevant to stakeholders in the debate. Conducting an analysis of television or digital/social media, for example, could reveal entirely different patterns than those apparent in the articles sampled for this study. Furthermore, the interpretations provided in this paper are limited to the information available in sampled coverage. Aside from incorporating peer-reviewed academic knowledge where appropriate, this thesis does not fact-check journalists' coverage with anything other than the database of sampled articles. Therefore, if all the news sources have made similar mistakes or omissions in their reporting, they may not be identified as such in the study. By repeating the phrase "as portrayed by sampled news coverage" throughout this paper, I have tried to remind readers that the interpretations provided are limited in this way. They reflect the educated insights of someone who has carefully, repeatedly read every article in the database, but not necessarily anything else.

Rather than relying on a single academic or journalistic perspective, this holistic review has followed the directions of ANT-CC to synthesize perspectives from across the spectrum of qualitative research paradigms. It allows the empirical, inductive, exhaustive nature of hermeneutics and association tracing to describe the controversy without imposing *a priori* hypotheses or traditional positivist approaches. Instead of collecting data from hermeneutic textual analyses, I could have relied on quantitative, deductive approaches and performed a large survey or content analysis — or used other qualitative strategies like interviews, focus

groups, or ethnography. Without the logistic constraints of length and time inherent in this master's thesis, I may have utilized a combination of these tools and perspectives. The trade-off to this approach is that it does not provide statistical, quantitative evidence or inter-coder reliability assurances, as would studies of different theoretical foundations.

Finally, ANT-CC's recognition that there is no way for researchers to completely remove themselves from an actor-network they study ensures an inherent subjectivity in ANT's procedures that may not support the generalization of its findings to other subjects. Nevertheless, the lenses of controversy cartography, the planning hexagon, and the reiterative hermeneutic circle applied throughout the research process should have helped safeguard it from any potential bias on the researcher's behalf. At worst, the final narrative description of the actor-network provided in this chapter is misinformed or incomplete. At best, the discussion of actors, associations, and arguments described by this study is a clear exhibition of the empirical, exhaustive nature of the methods behind it. At the very least, it is a partially comprehensive catalog of actors and their arguments, as portrayed by sampled coverage — an encyclopedia documenting in general terms who disagrees with whom about what and why, intended to be used by anyone who may find it useful.

Academic Contributions

This section revisits the study's scholarly influences and contributions in terms of the qualitative research paradigms described in the Literature Review chapter. Applying the six positivist lenses of the planning hexagon used by managers of natural resource management (Benson, 2014), this study shows how Minnesota's mining controversy is influenced by the effects of natural limitations, economic influences, governing systems, sociocultural norms, and

personal identities that will determine whether the implementation consequences of a new mining industry will be realized. Other guiding positivist frameworks considered by this study provide insight into the drivers, impacts, and human dimensions of wicked problems (Endl, 2017; Lund, 2012; Nie, 2003; Organ et al., 2012). By virtue of their pre-defined biases and expectations, they are limited in their ability to identify emergent aspects of social controversies. Nevertheless, they provide the study with a clear scientific foundation upon which ANT and other post-humanist approaches may be considered interesting and effective combinations.

From the post-positivist perspectives of journalism studies, Minnesota's copper-nickel mining controversy is an insightful case study on the civic impact of journalistic practices (Simons et al., 2017). From the view of agenda setting (Vonbun, Königslöw, & Schoenbach, 2016), sampled news sources can be seen as gatekeepers determining the public discourse by deciding which stories to cover, often reporting on the scandal of the moment rather than long-standing arguments regarding matters of fact. With theories of framing (Reinecke & Ansari, 2016), priming (Moy, Tewksbury, & Rinke, 2016), and false balance (Boykoff & Boykoff, 2004), journalists are shown in this case to portray certain actor groups and arguments with consistent biases, whether intended or not, that serve to simplify dramatic news narratives and exacerbate tensions between those involved.

Critical theory provides two major lenses through which the controversy has been viewed. First, from the perspective of corporate social responsibility, governments and journalists are shown to over-rely on self-disclosed information from mining companies, which have increased their efforts to frame themselves as environmentally friendly while continuing

to undermine laws and practices that could stand to hold them more accountable for their actions (Barkemeyer et al., 2015; Curran, 2017; Jenkins & Yakovleva, 2006; Phadke, 2018; 2019). Second, from an environmental justice standpoint (Heffron & McCauley, 2018), indigenous stakeholders are often at odds with environmental preservationists, though they may share an opposition to mining interests (Walker, 2017). Accounting for these contradictions and reconciling these differences would arguably be easier without the influence of the binary narrative frame limiting the storytelling abilities of reporters and stakeholders.

With a constructivist ontology, this study provides a pragmatic hermeneutic analysis of newspaper articles to take an objective, comprehensive look at sampled news coverage and develop an empirical understanding of its insights into the controversy (Patterson & Williams, 2002). Applying hermeneutics with the post-humanist perspectives of ANT and CC is another natural scholarly combination. This thesis attempts to highlight the practical utility of these theories and methods to encourage more researchers to find additional uses for them.

From the participatory paradigm, public deliberation research contributes to this study by providing a way to assess the quality of the government's public engagement activities (Gastil et al., 2015). In Minnesota, state and federal agencies collect public comments and host public meetings for communities to learn about ongoing environmental decision-making processes and provide feedback intended to inform or influence them (Phadke, 2018). However, as is true in other trans-border mining controversies analyzed by ecological economists (Vela-Almeida et al., 2015) and deliberative practitioners (Klinke, 2012), the public engagement process on mining in the Iron Range is inadequate, lacking a comprehensive, inclusive, or effective framework to empower stakeholders as intended (Kojola, 2018). Though

some news sources do better than others to promote relevant public deliberation activities, there is much room for improvement across the news industry.

The post-humanist paradigm provides the creative, exploratory philosophies of ANT-CC. While Callon (1984) and Latour (2007) explain the unique nature of ANT, Venturini (2010a; 2010b) and Marres (2015) provide more specific instructions on how to perform ANT studies in the form of applied controversy mapping assessments. In the language of ANT translation, the actor-network may be problematized around the visions of the proposed mines, and interessement and enrollment could be said to occur as actors coalesce for and against the mines' interests, preventing the stability of mobilization required to consider the controversy resolved (Callon, 1984; Latour, 2007). The lenses of CC provide another holistic view of the actor-network informed by the empirical tracing of statements through debates, of actors through alliances, and of movements through time (Venturini 2010a; 2010b; Venturini et al., 2015). In other words, each mine can be seen as embodying potential actor-networks, and everything reported in this thesis describes the forces and strategies involved in efforts to facilitate or hinder the realization (or, *translation*) of these mines.

By building upon prior media research specific to Minnesota's copper-nickel mining controversy (Kojola, 2018; Phadke, 2018), this thesis helps establish it as an object of study and encourages more researchers and communicators to consider investigating it. Because of the relatively small amount of research performed on this subject, this project could prove useful to those who could use it to help inform future studies, while following the call of environmental communication scholars who advocate for the creation of large public databases of environmental texts that researchers can use to perform multi-faceted discourse analyses

(Poole, 2018). Indeed, ANT analysis is often meant to be performed in combination with other theoretical and methodological approaches, and one main purpose of performing this research was to empower others with a common dataset of news articles to allow them to do so (Dr. Joseph Champ, personal communications, May 2021).

Recommendation for Practical Applications

In addition to the academic contributions described in the previous section, it has been a major objective of this thesis to create a reference resource that stakeholders and journalists would find useful to inform their coverage and decision-making moving forward. The encyclopedic nature of this thesis allows readers to make use of the table of contents as an index with which to locate specific topics of interest. In other words, it is not necessary to read this paper from beginning to end in order to make use of it. If, for example, a journalist was writing an article about a new lawsuit being filed against PolyMet, they may search directly for this study's discussion of lawsuits in the "Avenues of Activism" section of the Discussion chapter, where any and all mentions of lawsuits have been analyzed and communicated. Similarly, if a stakeholder were reviewing the history of PolyMet's USFS land exchange, the corresponding section in the Findings chapter would provide a thorough baseline starting point for an internal or external report. Due to the comprehensiveness of this manuscript, anyone making use of the text search function on this PDF could quickly identify and study for themselves whatever they like.

Beyond the scope of this paper, however, there are many potential uses and applications of the study it describes. As described in the Literature Review chapter, the data assembled and interpreted by this study could be used to create a controversy cartography

“atlas” — a public website featuring interactive data visualizations, such as trees of disagreement (Kaczmarek, 2002), actor-arguments tables (Venturini, 2010b), and ANT analysis diagrams (Poots, 2014), that describe the actors, associations, and arguments made throughout the controversy (Venturini, 2010b). Such a digital resource could be used as informational material during deliberative events with journalists, stakeholders, and public servants or be consulted during the public engagement process before management decisions are made (Besley & Roberts, 2010; Klocke & McDevitt, 2013).

The final goal of this thesis is to promote collaboration between journalists and social scientists, who, together, could perform news media analyses (like this study) and communicate their results for public audiences. With a little coordination, reporters could partner with scholars or graduate students to produce such online resources — whether they are fully textual like this thesis or include interactive digital visualizations like a CC atlas — and keep them up to date with new articles produced by sampled news sources. These “news reviews” could become an innovative form of multimedia journalism and applied scholarly research that news outlets and academic journals alike could help establish as valuable professional practices. The lack of such collaborations is arguably a significant failure or missed opportunity for the fields of journalism and journalism studies. News sources could at least maintain more useful, interactive archives of their own coverage to increase the value, accuracy, and credibility of their reporting. Instead, it is common for them, when reporting on a long-standing issue, to merely publish standalone articles with little to no contextual references to other internal or external reporting. Numerous examples of such inconsistent coverage from

the sources sampled in this study are thoroughly described in previous chapters and illustrate the need for new methods of public communication.

Although this paper ends without providing too many specific recommendations about how each stakeholder should interpret or act upon it, one suggestion is clear: news media professionals and academic scholars ought to work together to better understand the controversies they study and report on. If legacy news sources and established research institutions fail to produce such innovative approaches in this space, new digital media outlets and independent scholars will. Indeed, I am personally preparing to develop this idea as a project for an independent media research outlet called Sandbagger News. Until journalists and scholars are willing to challenge the operational norms and traditional business models of legacy newspapers and traditional academic circles, the crisis facing science communication worldwide will likely continue to worsen, and wicked problems such as Minnesota's copper-nickel mining controversy may never be resolved.

Concluding Statement

This thesis is undeniably overloaded with academic jargon and technical scientific details throughout. As a dedicated ANT cartographer, I have crawled through the controversy and reported on everything along the way in its original, complicated forms. But in the spirit of communicating with simplicity and clarity, this Conclusions chapter ends by describing this study in terms of two illustrative analogies.

On one hand, the journey of this study has been like embarking on a cartographic voyage through the Boundary Waters. Often the ride is easy, as currents of description carry the canoe of truth along swift channels carving out the story. But sometimes the river widens

into calm lakes of all sizes, where the views are grand, but the pace of the water is slow. These are like the many subsections of the previous two chapters — the themes, patterns, and arguments of the controversy described in their entirety to map the progress of the researcher paddling through the dark waters of uncertainty. In hiking, it is not imperative to look at every cloud nor measure every tree on the trail; similarly, readers of this discursive cartography need not understand nor remember the significance of every set of associations provided in this paper. What matters most are the holistic impressions they may be left with by the end of the expedition. Portages between each section may have been difficult terrain to navigate, but hopefully they have still delivered some understanding of the controversial wilderness through which this thesis has explored.

Alternatively, this project may be more similar to the analogy of mining. Rather than passively mapping the controversial landscape as it passes by along the trail, this study has sought to extract deposits of truth from where they lay buried beneath mountains of confounding data, cemented in layers by decades of sociopolitical controversy that came before. Separating disingenuous arguments from well-intentioned public discourse has required great care, as does isolating waste rock from valuable metals deposits. Like PolyMet and Twin Metals' mining proposals, this research has run the risk of two forlorn fates. In one, great expense may be paid for a poor return on investment — the metals in the ground, like the truth targeted here, may not prove as valuable as first expected. In the other, disaster may strike and topple the waste tailings dam — the study design could be flawed and misinterpret sampled news coverage completely. Nevertheless, with a careful strategy of excavation, this exploratory thesis went digging into the controversial discourse with high hopes and great expectations of

being useful to the diverse communities who stand to benefit from the insights buried just out of reach.

Whichever analogy may be more accurate on its own, they are surely most insightful when considered together, as are the perspectives of each actor involved in Minnesota's copper-nickel mining controversy. In conclusion, this paper provides an encyclopedic reference point from which to get a sense of the situation. Rich in conflicting lessons, the stories of PolyMet and Twin Metals, as portrayed by sampled coverage, speak to a grand divide that has polarized conservatives and conservationists in northeast Minnesota for decades and even centuries. Today, mining supporters wait to see if the Biden Administration will work against Trump's reversal of Obama's mining decisions, and the MN Supreme Court awaits a state review ordered to question PolyMet's tentative plans to triple the size of its mine proposal. Whatever the fates of Iron Range society or the Boundary Waters wilderness, the lessons offered by their sagas may well inform the decisions of future generations, serving as an atlas to lighten their way through the complicated, controversial territory first explored by their predecessors in the dark.

Works Cited

To more easily distinguish between the main types of works cited used in this paper, I have chosen to divide the referenced works into two sections. First is the primary literature that supports the theoretical framework of this research. Second are all the newspaper articles that were selected for analysis, all of which are cited in the text of the paper at least once.

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Sampled Newspaper Articles

In total, 680 articles are included in this study's analysis. Here they are sorted alphabetically by source, then by article title. The ProQuest database of national publications is listed at the end. Each reference is formatted with the following formula:

Article title. Publication Name. (Publication abbreviation, date of publication). URL.

Ely Echo (EE).

10,000+ join mining group. The *Ely Echo*. (EE, 12/23/2016). Retrieved from: <https://www.elyecho.com/articles/2016/12/23/10000-join-mining-group>

30-day comment period underway as Twin Metals project moves ahead. The *Ely Echo*. (EE, 12/21/2018). Retrieved from: <https://www.elyecho.com/articles/2018/12/21/30-day-comment-period-underway-twin-metals-project-moves-ahead>

Allow the environmental process to go forward for Twin Metals. The *Ely Echo*, from the *Star Tribune*, guest: Dave Lislegard. (EE, 09/05/2019). Retrieved from: <https://www.elyecho.com/articles/2019/09/05/allow-environmental-process-go-forward-twin-metals>

Amid controversy, Twin Metals continues its work. The *Ely Echo*. (EE, 04/03/2017). Retrieved from: <https://www.elyecho.com/articles/2017/04/03/amid-controversy-twin-metals-continues-its-work>

An apology that doesn't hold water. The *Ely Echo*. (EE, 10/22/2017). Retrieved from: <https://www.elyecho.com/articles/2017/10/22/apology-doesn%E2%80%99t-hold-water>

Anti-mining group joins feds in defending Twin Metals suit. The *Ely Echo*. (EE, 03/01/2017). Retrieved from: <https://www.elyecho.com/articles/2017/03/01/anti-mining-group-joins-feds-defending-twin-metals-suit>

Anti-mining meeting in Ely raises stir. The *Ely Echo*. (EE, 08/19/2019). Retrieved from: <https://www.elyecho.com/articles/2019/08/19/anti-mining-meeting-ely-raises-stir>

Apparent plan to deny leases to Twin Metals. The Ely Echo, guest: Bill Erzar. (EE, 06/25/2016). Retrieved from: <https://www.elyecho.com/articles/2016/06/25/apparent-plan-deny-leases-twin-metals>

Aurora and Duluth meetings provide opportunities for public comment on recently released draft PolyMet permits. The Ely Echo. (EE, 01/30/2018). Retrieved from: <https://www.elyecho.com/articles/2018/01/30/aurora-and-duluth-meetings-provide-opportunities-public-comment-recently>

Australian company to pump cash into Babbitt mineral mine project. The Ely Echo. (EE, 06/11/2000). Retrieved from: <https://www.elyecho.com/articles/2000/06/11/australian-company-pump-cash-babbitt-mineral-mine-project>

Bill backing PolyMet land swap gets first hearing in Congress. The Ely Echo. (EE, 07/21/2017). Retrieved from: <https://www.elyecho.com/articles/2017/07/21/bill-backing-polymet-land-swap-gets-first-hearing-congress>

BREAKING NEWS: Two year temporary mining ban has wrong ending date. The Ely Echo. (EE, 03/13/2017). Retrieved from: <https://www.elyecho.com/articles/2017/03/13/breaking-news-two-year-temporary-mining-ban-has-wrong-ending-date>

Congressmen come to Ely, talk mining. The Ely Echo. (EE, 06/23/2017). Retrieved from: <https://www.elyecho.com/articles/2017/06/23/congressmen-come-ely-talk-mining>

Copper mining supporters rally, march in Virginia. The Ely Echo. (EE, 07/28/2017). Retrieved from: <https://www.elyecho.com/articles/2017/07/28/copper-mining-supporters-rally-march-virginia>

Dayton: TMM not dead. The Ely Echo. (EE, 01/01/2017). Retrieved from: <https://www.elyecho.com/articles/2017/01/01/dayton-tmm-not-dead>

Dayton won't budge on Twin Metals. The Ely Echo. (EE, 04/08/2016). Retrieved from: <https://www.elyecho.com/articles/2016/04/08/dayton-won%E2%80%99t-budge-twin-metals>

Dayton's actions against Twin Metals lack common sense and may be illegal. The Ely Echo. (EE, 03/13/2016). Retrieved from: <https://www.elyecho.com/articles/2016/03/13/dayton%E2%80%99s-actions-against-twin-metals-lack-common-sense-and-may-be-illegal>

DeBeltz: Twin Metals is on slow, steady path. The Ely Echo. (EE, 11/02/2018). Retrieved from: <https://www.elyecho.com/articles/2018/11/02/debeltz-twin-metals-slow-steady-path>

Differing results as polls diverge on mining. The Ely Echo. (EE, 03/21/2017). Retrieved from: <https://www.elyecho.com/articles/2017/03/21/differing-results-polls-diverge-mining>

DNR issues permits for NorthMet mining project in northeast Minnesota. The Ely Echo. (EE, 11/01/2018). Retrieved from: <https://www.elyecho.com/articles/2018/11/01/dnr-issues-permits-northmet-mining-project-northeast-minnesota>

DNR opens public comment period on draft PolyMet dam safety and public waters work permits. The Ely Echo. (EE, 09/16/2017). Retrieved from: <https://www.elyecho.com/articles/2017/09/16/dnr-opens-public-comment-period-draft-polymet-dam-safety-and-public-waters-work>

DNR to host public information meeting in advance of PolyMet permit application. The Ely Echo. (EE, 03/18/2016a). Retrieved from: <https://www.elyecho.com/content/dnr-host-public-information-meeting-advance-polymet-permit-application>

Editorial: Now what?. The Ely Echo. (EE, 07/30/2017). Retrieved from: <https://www.elyecho.com/articles/2017/07/30/editorial-now-what>

Election aftermath: Split decision ensures more of the same. The Ely Echo. (EE, 11/09/2018). Retrieved from: <https://www.elyecho.com/articles/2018/11/09/election-aftermath-split-decision-ensures-more-same>

Ely angles for state funding: After meetings with Dayton, lawmakers, mayor voices optimism. The Ely Echo. (EE, 02/14/2017). Retrieved from: <https://www.elyecho.com/articles/2017/02/14/ely-angles-state-funding-after-meetings-dayton-lawmakers-mayor-voices-optimism>

Ely Echo wins state award. The Ely Echo. (EE, 02/07/2017). Retrieved from: <https://www.elyecho.com/articles/2017/02/07/ely-echo-wins-state-award>

Ely group suing Dayton, state. The Ely Echo. (EE, 03/03/2017). Retrieved from: <https://www.elyecho.com/articles/2017/03/03/ely-group-suing-dayton-state>

Ely shows up to support Twin Metals mining leases. The Ely Echo. (EE, 07/24/2016). Retrieved from: <https://www.elyecho.com/articles/2016/07/24/ely-shows-support-twin-metals-mining-leases>

Especially misleading was Ms. Rom's statement that Twin Metals is proposing a mining operation. The Ely Echo, guest: Gerald M. Tyler & David C. Oliver. (EE, 01/07/2018). Retrieved from: <https://www.elyecho.com/articles/2018/01/07/especially-misleading-was-ms-rom%E2%80%99s-statement-twin-metals-proposing-mining>

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