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No Smoke Without Fire — and Vice Versa: Keystone XL and the Climate Debate

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ABSTRACT

This dissertation centers on the discourse concerning the Keystone XL pipeline project. Keystone XL was a proposed mega pipeline that would have transported oil sands from Alberta in Canada to Texas in the United States. Environmental organizations hailed the project's defeat as a generational climate victory. My thesis offers insights into the compartmentalized discourse over Keystone XL, which pivots on different issues at the local and national levels. At the national level, I observe the now-commonplace polarized dispute over climate action. At the local level, participants sidestepped the topic of climate change, choosing instead to rally around matters of local relevance, which paved the way for the project's defeat. In my methods section, I investigate the challenges associated with qualitative and topic modeling research when participants refrain from explicit dialogue about a central topic that remains in the background. Furthermore, I expand on the implications of this research to cover any application of Natural Language Processing in mixed-methods research. I emphasize that text data always carry the author's perspective, and this situatedness necessitates human judgment, even when computer-assisted methods are employed.

Using my mixed-methods approach, I reveal that interactive dynamics contributed to the gap in discourse topics and to the silence on climate change at the local level. Framing is a well-established mechanism; actors engage in anticipatory, defensive framing. That is, they sidestep the topic of climate change to pre-empt pushback. State senators control the discourse over Keystone XL at the local level, and any actor who introduces a non-resonant topic risks swift dismissal. However, the interaction order does not merely permit privileged actors to dismiss others. Through steering, state senators can restrict the topic of conversation and compel other actors to limit their discourse contributions to certain topics. While industry allies made efforts to intervene in favor of Keystone XL, the silence on the topic of climate change and the defeat of

Keystone XL based on local concerns were ultimately driven by these interactions at the local level.

Keywords: institutions, natural language processing, silence, climate change, Keystone XL, fossil fuel

SUMMARY FOR LAY AUDIENCE

We often hear about climate change in the media and professional networks like LinkedIn. However, what we hear less about is the gap between these discussions and our lack of progress on the issue. Global emissions continue to increase. In this thesis, I discuss how an alliance of environmental organizations, climate scientists, and local grassroots organizations successfully halted the Keystone XL pipeline project, which is considered one of the most controversial fossil fuel endeavors. Surprisingly, I found that the outcome of the Keystone XL project was not determined by its impact on the climate, but by local issues. In key moments, the actors involved intentionally avoided discussing climate change. To illuminate and utilize this silence as data, I developed a new methodological approach. This approach uses topic modeling, an algorithm that autonomously identifies the topics present in a text. Before applying topic modeling, I independently studied the context, and I used my understanding of the context to deliberately influence the topics generated by the algorithm. By analyzing the data in this sequential manner, I address a significant challenge faced by AI techniques used for textual analysis. These computer-based methods lack the critical judgment of humans and cannot identify important themes unless they are explicit and frequently appear throughout the text data.

CO-AUTHORSHIP STATEMENT

Section 5 (Qualitative Approach) is based on a joint submission with Mark Zbaracki to the 38th European Group for Organizational Studies (EGOS) Colloquium in Vienna. I was the first author of that conference paper, while Mark had input on the direction and helped greatly with revising the submission. I prepared Section 4 (Methods) for the 39th EGOS Colloquium in Cagliari, again with Mark's input and revisions.

[T]he sociologist has at most the leeway of his double role as scientist and citizen: He can select the tasks he wants to work on sociologically according to aspects of political relevance, but on the scientific work, itself, such a civic preliminary decision can then have no influence.

—Jürgen Habermas (1971), *Theorie und Praxis. Sozialphilosophische Studien*, p. 290 (translated by this author)

DEDICATION

This thesis is dedicated to my peers from my master's program. Studying alongside you as equals, as the "other" in China, was a privilege. I acknowledge that many of you originate from developing nations that bear the brunt of climate change and possess fewer resources to mitigate its impacts. Your friendships brought the reality of climate change into sharp focus for me in the subsequent years, from the devastating floods in Pakistan and the relentless heat waves and power outages in Southeast Asia to the sinking land masses, such as Jakarta or Bangladesh. The Western world does indeed enjoy a privileged position in the face of global climate change.

ACKNOWLEDGMENTS

Someone once told me that, after reading numerous acknowledgments in books and being puzzled by generous praise, he finally understood the sentiment upon completing his own thesis. Now that I have finished my own thesis and witnessed how many individuals generously sacrificed their valuable time to support me, I also appreciate the importance of acknowledging their contributions.

First, I wish to thank my supervisory committee members, Mark Zbaracki, Wren Montgomery, Lee Watkiss, and Nouri Najjar. You have all encouraged me to follow my own path during my PhD odyssey, and I am much better off for it. I also wish to thank my peers Cameron McAlpine and Rosalie Luo, who helped me out in a pinch more than once. Finally, I want to thank some of my mentors and friends from outside the Ivey cosmos: Bodo Steiner and Stefano Ghinoi, Tom Lyon, and Melissa Aronczyk. Finally, thank you to everyone who lent their ear or provided me with an opportunity to test my framing: Virginia Leavell, Winslow Robertson, Jilde Garst, and Tim Wood to name a few.

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LIST OF ABBREVIATIONS

bbl/d	Barrels per day
ILR	Industrial Relations School (Cornell University)
LIUNA	Laborers' International Union of North America
NRDC	Natural Resources Defense Council
RCMP	Royal Canadian Mounted Police

0 FOREWORD

This thesis comprises three sections, eight, or two, depending on one's perspective. Alternatively, one might perceive it as a monograph. This unconventional foreword aims to establish clear expectations and guide the reader's focus to the key sections. These key sections encompass the methods section (Section 4) and the topic model section (Section 6), which employs a topic model to zero in on central themes. Why do these chapters warrant emphasis? The first completed chapter of this thesis was purely qualitative (Section 5). This section posed a challenge that set the tone for my dissertation. I conducted a qualitative analysis with salient examples; however, I discovered that these salient examples did not convey the message I intended to deliver—that the discourse I had observed was not dominated by overt, explicit control efforts, but by subtle control over topics and their discussants. Section 4 introduces a topic model–driven mixed-methods approach that I developed in response to my experience with working on Section 5, while Section 6 applies this approach to the same context that Section 5 initially examined.

In crafting this thesis, I made adjustments to enhance readability and to guide the reader through an analysis of the Keystone XL mega pipeline. In this thesis, I investigate the discourse surrounding fossil fuel projects and climate change. For clarity, two theory and context sections were detached from the empirical work. The discussion of theory, and theory development is consolidated in Section 2, permitting brevity in other sections. Similarly Section 3 provides a separate introduction to the context. Subsequently, Section 4 presents a distinct contribution to the development of methods. The following Section 5 is the qualitative analysis that inspired the other work in this thesis and led to Section 6, which uses a topic model to delve further into the

issue. Next, Section 7 analyzes outliers separated from the topic modeling section for enhanced clarity. Finally, Section 8.3 offers a concise conclusion.

Why focus on pipelines? In his aptly titled book *How to Blow Up a Pipeline*, Andreas Malm presents pipelines as a gauge of public sentiment toward fossil fuel extraction and of corporations' liberty to extract additional fossil fuel. Pipelines in the United States, which transport oil from wells to markets, must traverse hundreds of miles, often slicing directly through people's backyards. Climate action and climate change policy frequently carry more symbolism than substance. However, communities' approval or disapproval of new pipelines serves as a concrete measure of their stance on fossil fuel and their willingness to take action. As Malm (2020) also highlights, the fossil fuel–based economy incessantly requires new sources to replace exhausted wells. The current trajectory of growing global greenhouse gas emissions will continue until this cycle is interrupted (see also Welsby, Price, Pye, & Ekins, 2021).

The Keystone XL oil sands pipeline is a striking example of the recurring yet intensifying cycle of depletion and exploration that characterizes the fossil fuel industry. In 2008, TransCanada applied for a construction permit for a pipeline designed to serve the ever-expanding oil sands fields in Alberta, Canada. Stretching over 2,500 miles to the Texas coast at the Gulf of Mexico, Keystone XL would have ranked among the world's five longest pipelines. Apart from its vast size and attention-grabbing name, the type of fossil fuel transported ignited controversy. With contaminants such as sand and high bitumen content, the oil sands oil is converted into sought-after substances such as gasoline or diesel in specialized upgrading facilities. The "well-to-wheel" processing and consumption of one barrel of oil sands oil typically emits about 320–350 grams of carbon dioxide equivalent[1] per kilometer driven, compared to 250–280 for conventional crude (Charpentier, Bergerson, & MacLean, 2009). In

[1] Emissions encompass various climate gases such as Carbon Dioxide, Nitrogen Oxide, and Carbon Monoxide, each with different impacts on the climate. These can be converted to their equivalent Carbon Dioxide emissions based on their respective climate impacts.

essence, the pipeline represented an "XL" project to transport an exceptionally polluting form of crude oil directly from the heart of the Canadian oil industry to the center of American crude oil logistics. Erickson & Lazarus (2014) predicted not only that the project would have maintained the fossil fuel economy, but also that the increase in supply and subsequent price reduction would have stimulated 0.6 barrels of additional demand for every barrel extracted. The potential global-scale impact of the Alberta oil sands should not be underestimated. Consuming all proven resources would result in a 0.03°C increase in the global average temperature compared to 0.24°C for proven global conventional oil sources (Swart & Weaver, 2012).

My methodological approach is straightforward: After obtaining a grounded understanding, I demonstrate patterns of discourse and how topics disappear. For several years, I have followed the discourse on new pipelines and pipeline expansions, and a recurring pattern is the scant substantive discourse on environmental impacts. To cite the most recent example, the state of Michigan and Enbridge are currently in a dispute over Enbridge's Line 5. The state plans to shut down the 70-year-old pipeline, which has already spilled over a million gallons of oil. Enbridge has successfully utilized the court system to maintain the pipeline's operations. Enbridge does not dispute the pipeline's safety risks. Indeed, safety concerns and oil spills are conspicuously absent from the company's communication. The organization's arguments focus solely on the potential impact of a pipeline shutdown. There is no satisfying qualitative way of illustrating these patterns. At most, I can do as I have just done and inform you that the company *did not* discuss the issue I aim to study. While this was interesting to hear once, it was not immediately apparent how I could transition from that observation to a comprehensive analysis of the discourse. The approach I selected was to identify the topics of interest using a topic model, which would enable me to more systematically study and show the presence and absence of particular topics in specific discursive contexts. Additionally, the mixed-methods approach I

developed (see Section 4) also permitted me to examine interactions and how they influence who gets to discuss what topics. Keystone XL turned out to be the ideal case study for several reasons, the crucial one being the peculiar absence of the topic of climate change from a large portion of the dispute, while the topic dominated other parts. In this context, I could best demonstrate my phenomenon (or theory?) of interest: silence!

1 INTRODUCTION

The reality is that this decision could not be made solely on the numbers…

—Former Secretary of State John Kerry explaining the department's negative permit decision for the Keystone XL pipeline project in 2015, following seven years of evaluation and Environmental Impact Statements running into tens of thousands of pages (Kerry, 2015).

The climate discourse may seem omnipresent, especially for those closely following the conversation. The corporate world has embraced business sustainability, with a significant increase in sustainability reporting: In 2022, 79% of large companies globally published a sustainability report, up from 18% in 2012 (McCalla-Leacy, Shulman, & Threlfall, 2022). The "net zero" movement, which urges corporations to lower their greenhouse gas emissions and sequester or remove carbon to offset their impact, is gaining widespread acceptance. By 2023, 44% of approximately 10,000 firms across 50 countries had set formal decarbonization targets, compared to 8% in 2015 (MSCI, 2023). The climate discourse has its dedicated platforms, with over 10,000 climate scientists and climate activists congregating on the Mastodon servers https://climatejustice.social and https://climatejustice.rocks. There are dedicated media outlets such as https://insideclimatenews.org, and governmental agencies like the United Nations' Intergovernmental Panel on Climate Change. Social movements such as 350.org, Fridays for Future, and Extinction Rebellion significantly contribute to the discourse.

However, despite the prevalence of this discourse, its impact on our daily lives appears minimal. In 2019, the year before the Covid pandemic, global climate emissions were approximately 12% higher than in 2010, and 54% higher than in 1990 (Lee et al., 2023). Although global emissions dipped during the pandemic, they rebounded to pre-pandemic levels as international travel and trade resumed (Tollefson, 2021). Emissions from all major industries,

including energy and electricity use, transportation, and agriculture, are at or near all-time highs (Ritchie, Roser, & Rosado, 2020).

However, beyond the realms of business sustainability and climate activism, there has been a notable silence on the subject of climate change. Despite two-thirds of Americans expressing concern about climate change, only 28% engage in occasional discussions on the topic with family and friends, and a mere 5% do so frequently (Leiserowitz et al., 2022). This absence of casual dialogue implies that, notwithstanding vigorous discourse on climate change, the conversation remains compartmentalized, leaving the lives of most of us unaffected unless we personally experience extreme weather events.

Furthermore, climate change has become a contentious topic in certain circles, a subject that some may choose to avoid in specific social settings. This division is particularly evident in the United States; however, it is also present in other parts of the world (Hornsey, Harris, & Fielding, 2018). While most Americans recognize that human activities drive climate change, personal values, ideologies, and political affiliations often influence individuals' positions (Hornsey, Harris, Bain, & Fielding, 2016), thus limiting the potential for impartial discussions. This divide, coupled with increasing skepticism toward science, presents a challenge for research and data gathering. If individuals consider climate change unimportant, believe in conspiracies, or simply ignore the topic, how can we examine their role in the climate discourse (cf. Druckman & McGrath, 2019)? If we only consider serious contributions to the discourse, then these individuals fall outside our scope. However, their actions still affect the climate. Similarly, when we filter data using climate-related keywords or ask climate-related questions, we miss instances in which actors impact the climate without explicitly discussing or even considering it.

Discourse polarization places constraints on all participants, potentially prompting those with moderate views to engage in strategic framing efforts. Consider a scenario in which Topic A could ignite a heated debate, but you could raise Topic B to the same end. Would you adhere to your original talking points and attempt to convince your counterpart of their importance? Alternatively, would you adjust your talking points to emphasize Topic B, aiming for an easy victory? The first step in navigating any social context is to identify prevalent beliefs. This grounded understanding is crucial because it enables actors to discern which topics will resonate with an audience. By adhering to generally accepted topics and building on taken-for-granted assumptions, an actor can navigate most discussions with ease (Harmon, Green, & Goodnight, 2015; Berger & Luckmann, 1966).[2] Unfortunately, this appeal to dominant beliefs exacerbates the problem outlined in the previous paragraph—it is challenging to identify who contributes to climate action based solely on their words, that is, through a keyword search. While avoiding certain topics can simplify social interactions, it also complicates discourse analysis. This intricacy surrounding interests, interactions, and discourse topics leaves us with two closely related questions for this thesis. What constraints shape discourse topics? What topics were absent from the data because the actors decided not to discuss them?

My exploration of topics of discourse and silence in this thesis is organized as follows: The subsequent section (Section 2) provides a theoretical perspective on silence. In that section, I initially introduce four bodies of literature—translation, ceremonial conformity, greenwashing, and institutional fields—typically employed to analyze discourse and action. The section then utilizes observations of silence and silencing from extant literatures to generate a novel, silence-based theoretical approach to the problem of gaps between discourse and action, which I contrast with the initial four theoretical perspectives. Section 3 offers a primer on the discourse over the

[2] A notable exception are in-group out-group situations where the actor is not welcome in the first place, for instance because of their gender or skin color.

Keystone XL pipeline project, which I subsequently use to investigate silence and silencing. To identify the discussed topics and, crucially, topics absent from segments of the discourse, I combine a grounded analysis with topic modeling in a mixed methods approach, introduced in Section 4. Following this, I provide three empirical chapters, each adopting a distinct approach to delve into the concept of silence. Section 5 employs a qualitative, grounded approach that views silence as a verb, that is, an action that one actor can impose on another. Section 6 explores the dynamics of silence viewing it as a noun or status, that is, the systematic absence of discussions on a topic. Last, Section 7 addresses silence on a nonliteral level. An effect akin to silence can be achieved when an actor is disregarded or discredited. Outliers from the previous section aptly illustrate this situation—some actors are given ample opportunity to speak, but this speaking opportunity does not always translate into impact on the discourse. Finally, a succinct conclusion is provided in Section 8.3.

2 TOWARD A THEORY OF SILENCE

Preach the truth, as if you had a million voices. It is silence that kills the world.

—Catherine of Sienna, *1347-1380*. Invoked by a group of Nebraskan nuns at a State Department hearing on the Keystone XL pipeline project in September 2011.

Occasionally, there are gaps between our words—that is, discourse—and actions. These gaps may arise, for instance, when our commitments exceed our abilities, when we choose methods unsuited to our objectives, or when we do not even try. I am not the first to highlight these discrepancies. Management scholars more hawkish than I have described this issue, employing terms such as *self-delusion* (Rosenzweig, 2007), *management fads* (Abrahamson, 1996), or unambiguously, *BS* (Pfeffer, 2015; Spicer, 2013). This chapter is motivated by empirical observations of a growing gap between the dominant business sustainability discourse and a surge in corporate climate goals on the one hand and the growth of global climate emissions on the other hand. I argue that the missing element in our models of gaps is *silence*, as many of our impacts stem from areas and are rooted in discourses that do not even consider climate impacts. More than just a decoupling of discourse and actions, or policy and practice, there is a decoupling within the discourse, as the climate topic does not bear on major sources of pollution. In the next paragraph, I introduce the structure of this chapter.

When a gap arises between words and actions, our typical responses are either to assign blame or to rationalize the gap by providing reasons for an actor's propensity to fail. In this section, I examine four literatures, each espousing either approach, before proposing silence as an alternative explanatory factor. All four existing approaches juxtapose the successful propagation of rhetoric with failures in implementation. The first literature proposes that a disconnect might emerge during the *translation of discourse into action* (Callon, 1984). Actors

may acknowledge climate change but fail to identify effective policies that curb emissions, thus reverting to business as usual (Wright & Nyberg, 2017). The second approach suggests that a company's acknowledgment of human-induced climate change could be an instance of *ceremonial conformity*. As an environmental practice becomes the standard, an increasing number of actors may adopt it to meet shareholders' and customers' expectations, while the original intent of the practice is sidelined (Delmas & Montes-Sancho, 2010). The third approach considers the possibility of a widespread *greenwashing* epidemic, in which actors strive to mislead the public into forming overly positive views of their environmental performance (Montgomery, Lyon, & Barg, 2023). The fourth approach considers the existence of a pervasive *institutional field* rooted in vested interests in fossil fuel extraction, encompassing industry organizations, foundations, think tanks, politicians, and regulators (cf. Barley, 2010; Laffont & Tirole, 1991).

Finally, I introduce *silence* as an explanatory factor. An actor's silence on a topic can significantly alter the outcomes of a social interaction—if the interaction still occurs, it turns on a different topic. Moreover, systematic silence on a topic can signify a decoupling within discourse, in which our outcomes no longer depend on our discussions about said impacts. Rather, the conversations that determine our impacts would center entirely on issues unrelated to the impact.

2.1 Translation of Discourse into Action

The transition from a discourse to an impact involves the active translation of ideas into action. Actors, such as scientists, activists, or politicians, often identify issues and advocate for changes in established practices. They create critical texts, interweaving arguments, statistics, and anecdotes to challenge the support for current practices and present superior alternatives

(Maguire & Hardy, 2009; Suddaby, Bitektine, & Haack, 2017). Tangible institutional change occurs when networks of actors (Latour, 1996), which may include trade associations, regulators, or professional networks, abandon established practices and introduce new ones (Hardy & Maguire, 2010, 2020).

The translation process constitutes one explanation for the gap between discourse and actual outcomes. As the climate discourse permeates society, the onus of implementing changes lies in individuals across industries. Open-minded actors may soon realize that a proposed new practice is unsuitable and might reassess or abandon their efforts to enact change. For example, managers might initially believe that a novel computer system could dramatically transform their industry. However, after purchasing the system and adjusting it to meet user needs, they might discover it is not as groundbreaking as they first thought, signifying only a gradual shift in practice (Heracleous & Barrett, 2001). Complicating matters further, resistive elements within the network need not be human (Pickering, 1995). Callon (1984) noted an instance in which a research team attempted to intervene in a fishing community. Despite initially promising results, neither the fishers nor the scallops responded to the treatment as predicted, and the recovery of scallop stocks did not meet expectations. Climate action seems prone to translation issues due to the slow pace at which cumulative emissions result in global warming, the complexity and elusive nature of our fossil fuel-dependent world economy, and generally abstract climate action calls (Howard-Grenville, Buckle, Hoskins, & George, 2014). As corporations engage with climate change, they seek practice changes compatible with their growth targets. The result is minor modifications of existing practices that preserve business as usual but fail to address the root problem, leading to a gap between discourse and reality (Wright & Nyberg, 2017). In the next subsection, I delve into what happens when a discourse has been translated into specific

practices and becomes a fashion or fad (Abrahamson, 1996), with other actors ceremonially adopting the practice.

2.2 Ceremonial Conformity

Ceremonial conformity involves adopting new language to appease stakeholders without implementing substantive corresponding changes. In the 1990s or 2000s, a company's decision to go green might have been met with criticism due to its perceived costliness (Stefan & Paul, 2008). However, with investors, governments, and consumers now demanding greater sustainability, companies must visibly engage with the topic (Eitelwein & Paquet, 2021). The dilemma for firms is no longer about whether to be green trailblazers but whether they can weather the backlash of rejecting sustainability demands (cf. Zuckerman, 1999). As sustainability has evolved into a *fashion* (Abrahamson, 1996), firms announce green initiatives mainly to signal responsiveness to environmental concerns and counteract protests targeting those falling behind (Schnackenberg, Bundy, Coen, & Westphal, 2019).

Ceremonial conformity provides a second explanation for the gaps between discourse and reality. Due to information asymmetry, firms can make environmental claims or pledges without the need for corresponding actions (Crilly, Hansen, & Zollo, 2016). For instance, latecomers to the U.S. Department of Energy's voluntary Climate Challenge were more likely to exhibit ceremonial conformity and made fewer emissions cuts than early participants. Early-joining companies responded to focused pressure from stakeholders, while those joining late under less scrutiny could reap the reputational benefits without executing substantial actions (Delmas & Montes-Sancho, 2010). Moreover, David, Bloom, & Hillman (2007) noted that firms tend to respond to investor proposals with symbolic changes rather than substantive ones. In essence, ceremonial conformity varies on a continuum. In some instances, the decoupling of policy and

practice is a deliberate strategy, while in others, firms make an effort, and either decoupling or successful implementation unfolds over time (Crilly, Zollo, & Hansen, 2012). Thus, ceremonial conformity ranges from emergent gaps between discourse and reality, similar to those associated with discourse and translation, to more calculated greenwashing, which I address in the next section.

2.3 Greenwashing

The literature reviewed in the two previous sections reveals gaps when firms fail to act on their declared intentions. However, the greenwashing literature underscores that firms often employ deliberate tactics to mislead stakeholders. Classic examples of greenwashing include advertisements, packaging materials, and public declarations that deceive stakeholders into forming overly positive views of a firm's environmental performance. Greenwashing spans from seemingly harmless elements such as green, eco-themed embellishments to more disconcerting instances such as fraudulent certifications and carbon offsets that fail to reduce emissions (Montgomery et al., 2023; Lyon & Montgomery, 2015). Greenwashing was already widespread in 2011 (Delmas & Burbano, 2011) when the Keystone XL discourse entered its heated phase. While misleading marketing is the most recognizable form of greenwashing, it targets not only consumers, but also governments, investors, and the media (Montgomery et al., 2023).

Greenwashing serves as a third explanation for the gaps between discourse and reality. Brock & Dunlap (2018) describe how a power company greenwashed Germany's largest open-pit coal mine by offering guided tours of reclaimed land, operating a carbon capture technology exhibit, and managing a network of "astroturf lobbying" (Lyon & Maxwell, 2004) organizations in the region lobbying for the mine. These efforts did not tackle the root issue—fossil fuel emissions from coal consumption—but portrayed the operator as part of the solution, not the

problem. The greenwashing literature cautions that companies often distort the truth about their actions. A power company might report emission reductions while emissions are increasing (Kim, 2015). Companies sell emission offsets and green electricity that do not lead to emission reductions (Hufen, 2016; Rajão & Marcolino, 2016), and fossil fuel companies laud their investments in renewable energy, even when these are a magnitude smaller than their spending on fossil fuel exploration (Li, Li, Seppänen, & Koivumäki, 2022b; Ferns & Amaeshi, 2021). Overall, greenwashing illuminates the often-malicious nature of gaps between discourse and reality. However, greenwashing centers on the overt range of malpractice. Subsequently, I discuss how institutional fields fortify existing practices through lobbying and stonewalling.

2.4 Institutional Fields

The fossil fuel sector provides resources to political allies, places industry veterans in critical government positions, and significantly contributes to job creation in "petro-states" (cf. Adkin, 2016) such as Alberta, Texas, or Louisiana. Unsurprisingly, the industry's allies staunchly resist *tangible* change. Barley (2010) provides a textbook example of an institutional field protecting corporate interests. This field encompasses industry organizations, political action committees, government affairs offices, public relations firms, astroturf organizations, foundations, think tanks, and law firms lobbying on behalf of corporate clients. While organizations such as the American Petroleum Institute may not spearhead the public discourse, they employ lobbyists who effectively challenge proposed legislation in Congress (Downie, 2017; Brulle, 2018).

Institutional fields offer a fourth explanation for the gaps between discourse and reality. At pivotal moments, institutional fields can effectively intervene to prevent climate discourse from translating into specific regulations. These fields possess several strategies for thwarting

initiatives without directly engaging in discourse. Firms may engage in clandestine lobbying efforts contradicting their publicly stated intentions (Cho, Laine, Roberts, & Rodrigue, 2018; Lyon & Delmas, 2018). During election cycles, bribing and campaign contributions become a particularly effective tool for persuading politicians to counter their declared intentions (Pailler, 2018). Having industry-friendly personnel in key government roles facilitated the rollback of climate regulations as early as 2002–2003 (Mann, 2012b).

2.5 Opinions on Silence in the Existing Literature

While the four approaches above primarily focus on gaps between discourse and action or outcomes, each also hints at the role of silence. This section draws out these insights from the literatures. In all instances, the silence is partial—there are no mentions on specific topics or events, other than the absence of discourse altogether.

2.5.1 Translation Assumes Dissemination

Empirical work within the translation literature usually focuses on the last stage of the process, that is, the translation of ideas into actions. This focus implicitly assumes that the actors are exposed to these new ideas. The translation literature regularly invokes Latour's (1984) *The Powers of Association* to justify the focus on implementation after discourse (e.g., Waardenburg, Huysman, & Sergeeva, 2022; Lawrence, 2017; Maguire & Hardy, 2009; Zilber, 2006). Changing existing practices necessitates reaching practitioners in the field and persuading them to incorporate new ideas into their everyday work and ongoing projects.

Simply developing an alternative practice is not sufficient to reach these practitioners; a "chain of agents" (Latour, 1984, p. 264) is necessary to disseminate the new practice across a sector. All agents within this chain have agency, implying that they need convincing and may reject the practice, refuse to be part of the chain, or even actively oppose the changes (see also

Latour, 2005). The backlash, even against minor changes, is often surprising. In one study, consumers presented with an economic argument embraced energy-saving light bulbs. Simultaneously, in the treatment group, conservative-leaning individuals exhibited a "boomerang effect" (Byrne & Hart, 2009): they now preferred the incandescent light bulb (Gromet, Kunreuther, & Larrick, 2013). Long-lasting organizations usually have systems in place to manage these chains of agents, penalize even small infractions by individuals, and redirect discourse and action onto existing paths (Dacin, Munir, & Tracey, 2010; Steele, 2021). This management often creates spaces of silence on specific topics, limiting their dissemination and translation into action.

Indeed, in the process of changing existing practices, not everyone has the same level of influence. Individuals with privileged access to a network of practitioners, such as CEOs, government administrators, or celebrities, naturally have an advantage over the average citizen in challenging or stabilizing existing practices. Meanwhile, the typical approach of empirical studies on translation leverages case studies where both discursive shifts and changes in practice are readily observable. For instance, Maguire & Hardy (2009) document the successful campaign by pioneering environmentalist Rachel Carson against a particular pesticide, tracing the discourse through scientific works, textbooks, and government reports. Their work presented two measures of implementation: the government ban on the pesticide and the subsequent phase-out of its use. While it is straightforward to observe action or its absence, identifying obstacles to discourse can be challenging, as *successful silencing would usually result in a lack of discourse* and, therefore, data. Nonetheless, Waardenburg et al. (2022) exemplify the "production" of silence, whereby intelligence officers within a local police station engage in "deleting, editing, and interpreting" (Waardenburg et al., 2022, p. 73) crime predictions from predictive software.

These activities grant intelligence officers exclusive control over the discourse on crime data, indirectly enabling them to allocate the police forces deemed appropriate by presenting a curated and interpreted selection of data. Returning to the research context of Maguire & Hardy (2009), Smith (2001) investigates the numerous hurdles that Carson had to overcome to make her voice heard before any discourse could result from her ideas. These obstacles include attempts to block the publication of her groundbreaking book *Silent Spring*.[3] In conclusion, while the theoretical literature on translation provides a framework for contemplating silence and silencing, the empirical literature has encountered difficulties in capturing this concept.

2.5.2 Ceremonial Conformity—Avoiding Confrontation

In the context of ceremonial conformity, DiMaggio & Powell (1983) use the term *decoupling* to explain the internal processes that cause gaps between a structure designed to manage an issue and the issue itself. More specifically, *policy–practice decoupling* describes processes in which an organization formally adopts a particular policy but fails to disseminate these changes throughout the organization—assuming there is any genuine attempt at implementation at all. Consider the case of BP, formerly "British Petroleum," which famously rebranded itself as "Beyond Petroleum" and launched a business unit dedicated to renewable energy. However, the business unit never really took off, and BP soon discontinued its emission reduction efforts in its core business (Ferns & Amaeshi, 2021). According to Short & Toffel (2010), without regulatory surveillance, industry self-regulation efforts have minimal impact. Companies quickly revert to the status quo, and violations start going unpunished. The decoupling literature offers two explanations, the first being that the adoption of a policy can be window dressing, where the actors have no intent to fully implement the associated practices (Oliver, 1991; MacLean & Behnam, 2010).

[3] See also Mann & Toles (2016) on the connection between efforts to silence Rachel Carson and current climate denial campaigns.

While window dressing assumes intent, in complex organizations, decoupling can gradually creep in when neglectful managers remain silent about emerging gaps or a lack of progress. DiMaggio & Powell (1983) term this process *avoidance*. Importantly, while Oliver (1991) uses the term *avoidance* akin to window dressing to describe concealment efforts, DiMaggio and Powell borrowed Goffman's (1967) social psychological use of the term. In social psychology, avoidance refers to the evasion of potentially embarrassing interactions by, for instance, withdrawing from social situations or shifting the topic of a conversation (Goffman, 1967). In other words, decoupling can emerge when management fosters either the policy or the practice by avoiding potentially uncomfortable conversations about the decoupled practice (cf. Mena, Rintamäki, Fleming, & Spicer, 2016).

The empirical literature has already observed avoidance as a source of silence—that is, a lack of exposure to information—on an individual level. For example, individuals are known to avoid information about the climate impacts of products when they perceive that such information might contradict their consumer choices (Momsen & Ohndorf, 2022). More generally, individuals are known to seek information that supports their choices and to avoid or dismiss information that could introduce dissonance between their identities and environmental practices (Druckman & McGrath, 2019).

2.5.3 Convenient Omissions in Greenwashing

The greenwashing literature introduces two concepts that address the phenomenon of silence: selective disclosure and brownwashing. *Selective disclosure* refers to the strategic release of only positive information while withholding negative information. Selective disclosure can create a misleading impression about a company's true environmental performance, as stakeholders are only presented with a partial, overly positive picture (Marquis, Toffel, & Zhou,

2016; Lyon & Maxwell, 2011). Conversely, *brownwashing* involves refraining from communicating environmental achievements, such as environmental certifications. This behavior has also been termed *silent green* (Delmas & Burbano, 2011), *greenhushing*, or *strategic silence* (Carlos & Lewis, 2018). Companies may resort to brownwashing if their shareholders respond negatively to environmental actions. This could occur if there is a perception that polluting companies can reap greater short-term profits (Kim & Lyon, 2015). Another theory for brownwashing suggests that firms might choose to hide their environmental actions out of concern for being perceived as hypocritical if they were to be caught in an environmentally harmful act. The revelation of environmental misconduct by a firm previously seen as green carries significant news value and could lead to a heightened backlash and negative media attention. However, similar misconduct by brown firms is expected and receives less attention (Carlos & Lewis, 2018).

In conclusion, the greenwashing literature underscores a range of reasons why companies might choose not to accurately report their environmental performance and opt to remain silent on their environmental deeds or misdeeds, particularly in uncertain conditions (Lyon & Maxwell, 2011). Therefore, the phenomenon of silence, as opposed to transparency, might be more prevalent than generally assumed, if not the norm.

2.5.4 Silence and Hidden Agendas in Institutional Fields

The institutional fields literature, while not explicitly theorizing about silence, presents numerous examples, including *confidentiality*, the *omission* of information, the *bracketing* of topics, the *avoidance* of dialogue on specific allegations, and the *denial* of new realities. The subtheme of silence emerges in the literature, starting with Barley's (2010) examination of the *confidential* 1971 Powell Memorandum. In this document, Powell identified the "Neglected

Opportunity in the Courts … the judiciary may be the most important instrument for social, economic and political change" (Powell, 1971). A few months later, Powell was appointed to the Supreme Court, where he expanded the leeway for "corporate speech," including lobbying, political donations, and public influence campaigns (Powell & Mendendian, 2011). His memo served as a blueprint for the American Chamber of Commerce and industry-adjacent organizations, such as the American Enterprise Institute, which subsequently grew in numbers and funding (Barley, 2010). However, the American public only became aware of Powell's agenda when his memorandum was leaked to journalist Jack Anderson after Powell's accession to the Supreme Court. The Powell memorandum exemplifies the inherently elusive role of silence and "unknown unknowns" (Rumsfeld, 2002). If the memorandum had been leaked before Powell's Supreme Court nomination, would public opinion have shifted sufficiently to preclude his appointment? Alternatively, would then-President Ronald Reagan's Senate majority have ensured Powell's appointment anyway?

The extractive industry provides powerful examples of an institutional field's capacity to manage and withhold information. In their ethnographic study of the institutional field, Whiteman & Cooper (2016) observe several forms of silence related to the forestry industry in Guyana: the *omission* of the topic of sexual violence in a report for responsible forest management certification despite express assurances that the topic would be included[4]; the deliberate *bracketing* of certain topics by a Malaysian forestry firm, a certifying body, and an environmental organization; and the *avoidance* of dialogue on specific allegations. For a period, the forestry firm also *denied* its loss of certification, curiously leading to *silence through communication*, as the firm continued to communicate as if it were certified. By contrasting

[4] To provide some context: The researchers observed routinized sexual violence against Amerindian women and girls by company employees who entered the region solely for work purposes, and they were expecting the certification agency to address this issue.

observations with official reports and tracking discrepancies to the firm, its parent company, the contracted assessor, and state actors, the researchers make visible who controls information and how.

Similar empirical examples can be found in the fossil fuel industry. With large research and development departments staffed by geo-engineers, fossil fuel companies were among the first to realize the dangers of global climate change. For instance, ExxonMobil created state-of-the-art climate models in the 1980s and accurately predicted the global average temperature increase we see today (Supran, Rahmstorf, & Oreskes, 2023). This understanding of climate change starkly contrasts with the industry's *omission* of that risk in public communications (Franta, 2021, 2018; Supran & Oreskes, 2017, 2020; Bonneuil, Choquet, & Franta, 2021). Similarly, Wood (2019) observed an *avoidance* of the topic of climate change in the discourse on the Keystone XL pipeline project akin to the patterns observed in this thesis, although the mechanisms behind this silence were not further explored. Fossil fuel companies have frequently managed to bracket discussions about phasing out fossil fuels from the climate debate, opting to frame the debate around economic and technological issues (Li, Trencher, & Asuka, 2022a; Grumbach, 2015). Last, while corporate actors may no longer engage in outright *denial* by directly contradicting climate scientists, they still covertly fund climate denial groups (Mann & Toles, 2016; Brulle, 2021). This adds another layer of complexity to the question "What constitutes silence?" References to silence in the institutional fields literature, as in the other three literatures, remain scattered. However, these empirical studies represent a good starting point for a more rigorous exploration of silence.

2.6 What Constitutes Silence?

In this section, I aim to assemble a comprehensive picture of silence by drawing together fragmented insights from four bodies of literature as shown in Table 1. Silence as data or as a signal inherently carries a high degree of ambiguity. An unremarkable conversation between two parties could arise for myriad reasons. Consider a company discharging harmful chemicals into the environment. If a representative from the company and an environmental activist converse, neither might mention the issue. This silence could occur because *both parties are unaware* of the dumping. Alternatively, they might feel it is an inopportune time to discuss the subject (we, as observers, could even be the reason they avoid the subject). Further, *one party* might be *aware* of the situation, choosing to conceal it, or both parties could be jointly hiding the truth. In each scenario, silence is the result, and telling these cases apart based solely on the conversation is difficult. Without supplementary data providing context about both actors' motives,[5] we can only identify when actors render their silence *explicit*, meaning that one or more actors insist on setting a topic aside. More often, silence arises without a fixed cause, emerging *uncoordinated*. With an endless array of possible discussion topics, actors do not systematically rule them out.

Table 1: Dimensions of Silence

Attribute/ Value	**Description**	**Example**
Actor		
Unaware parties	Two parties are oblivious that a relevant event has transpired.	A company representative interacts with a member of an environmental organization, unaware that their employer is clandestinely dumping toxic chemicals into a lake.
Aware party or parties	One or more parties withhold information.	A company representative interacts with a member of an environmental organization, treading carefully because they fear the environmental organization will uncover their illegal waste dumping practices.
Mutual	Two parties jointly	A company representative converses with a member

[5] The motives for concealing a subject likely extend beyond the conversation, and the culpable party or parties will also conceal the subject in other contexts.

Attribute/ Value	Description	Example
knowledge	avoid discussing an issue.	of an environmental organization. It is an open secret that the company has been dumping toxic chemicals into a lake. Nonetheless, both parties choose not to broach the issue to focus on a more pressing matter or to wait for the right time.
Context		
Explicit silence	One or more parties clearly express their decision not to discuss an issue.	During hearings on the Keystone XL pipeline in Nebraska, TransCanada's lawyers explain that pipeline safety falls under the Department of Transportation's jurisdiction, threatening a lawsuit should the Nebraska Legislature attempt to regulate or discuss the matter.
Uncoordi-nated	One or more parties independently decide to avoid mentioning an issue.	During hearings on the Keystone XL pipeline in Nebraska, all but a handful of participants choose not to mention climate change, a topic dominating the national discourse. This silence does not appear coordinated, but seems to stem from a shared understanding surrounding the topic.
Type		
Complete silence	No communication occurs between two or more parties.	The Environmental Protection Agency identifies dangerous contamination levels at a former industrial site in Texarkana, Texas, in 1980. However, it refrains from notifying the predominantly African–American population for years until the site is officially declared a Superfund site in 1984 (Čapek, 1993).
Omission	Communication occurs, but one party withholds information.	Fossil fuel companies promote their efforts to protect the Arctic while lobbying for a bill that would permit drilling in the region (Cho et al., 2018).
Suppression	One party is forcibly silenced, either generally or on a specific issue.	Resource extraction companies (Butt, Lambrick, Menton, & Renwick, 2019) and the Italian mafia (Cappellaro, Compagni, & Vaara, 2021) resort to murdering their critics to silence them.
Disregard ('loud' silence)	Two parties are in communication, but one disregards the statements of the other as if they were never uttered.	A corporation and an auditor seek input from indigenous groups but fail to include their concerns in the auditing report as initially promised. The sanitized auditing report is subsequently used as evidence that all Amerindian concerns have been heard and addressed (Whiteman & Cooper, 2016).

Attribute/ Value	Description	Example
Motives		
Malicious intent	One party deliberately withholds factual information to achieve a goal.	Then-President Bill Clinton purposely hides his sexual relationship with an intern (Rogers, Zeckhauser, Gino, Norton, & Schweitzer, 2017).
Appropriate-ness	One or more parties emphasize common ground to avoid awkwardness or conflict.	An individual navigates the conversation toward a topic that is likely to yield a pleasant conversation, avoiding taboo topics (Goffman, 1974).
Unintentional silence	One or more parties unintentionally neglect to address an issue.	A team misses a deadline due to forgetting about it.
Realm		
Fact omission	An actor discusses a topic but omits a crucial fact.	TransCanada boasts about the proposed Keystone XL potentially creating 20,000–120,000 jobs, but fails to mention that only about 50 of these positions would be permanent. The State Department finds that the project would create about 3,000 jobs that are limited to two years (Cornell University Global Labor Institute, 2011).
Topic avoidance or framing	An actor or actors intentionally avoids a topic that does not conform with their overall beliefs or strategy.	TransCanada avoids discussing climate impacts when talking about its Keystone XL pipeline project (Wood, 2019); Republican members of Congress are less likely to mention climate change in their speeches (Guber, Bohr, & Dunlap, 2021).
Outcome		
Successful silence	The success of silence or silencing results in the complete absence of discourse on a particular issue.	The United States government successfully withholds information about the Manhattan Project from the American public until after the bombings of Hiroshima and Nagasaki (Groves, 1983).
Failed silence	A party's attempt to withhold information is unsuccessful.	After the failed break-in at the Democratic National Committee headquarters, the Nixon administration attempts a cover-up, including kidnapping the wife of former President Richard Nixon's attorney general. These efforts are undermined by the secretive informant Deep Throat, who leaks

Attribute/ Value	Description	Example
		information to the press (Woodward & Bernstein, 2005).
Institutiona-lized silence	A topic becomes taboo and is not publicly discussed, although actors may possess some knowledge about it.	Many Germans claimed ignorance of the Holocaust, a position that seems implausible given that the Jewish population was scattered throughout Germany and many concentration camps were located in close proximity to populated areas. This silence is likely a protective mechanism (Goldhagen, 1996).

Silence can serve as a discernible signal when an actor omits or disregards known information, while the most basic form of silence happens when two parties lack any communication. Studying silence presents a significant challenge, given that two actors not communicating is unremarkable—billions of people do not communicate with each other every day. Only in rare cases can we assert that a conversation should have occurred where there was *complete silence*. For example, in Texarkana, Texas, the Environmental Protection Agency initiated a survey of pollution from a former wood treatment plant's hazardous waste disposal in 1980. The agency discovered high contaminant levels, including pentachlorophenol, arsenic, and creosote. Nevertheless, the Environmental Protection Agency did not alert the predominantly African–American population living directly above the site until 1984, when the former plant area was designated a Superfund site.[6] Residents with health problems sued the plant's previous operator, and some secured out-of-court settlements, setting a precedent for communities' rights to information (Čapek, 1993). More often, we find tangible data on partial silence when an interaction happens and a specific subject is left unaddressed. If only one ill-intentioned party knows about this issue, it may *omit* this information in interactions with others (e.g., Cho et al., 2018). If the other party also has this information, the ill-intentioned party might attempt to

[6] The superfund is a U.S. government program, established in 1980, aimed at cleaning up the country's most contaminated sites.

suppress this information, perhaps using force (e.g., Butt et al., 2019; Cappellaro et al., 2021). Last, when the ill-intentioned party acts as an information intermediary, it can *disregard* and neglect to relay information, effectively silencing the other party despite any concerns expressed (e.g., Whiteman & Cooper, 2016).

The problem with utilizing any form of silence as data is the difficulty in distinguishing between different forms, best illustrated by the motives for silence. Consider a meeting between a chemical company and an environmental organization in which company representatives do not mention a recent chemical spill. There might be *malicious* intent behind the silence if the company intended to hide the spill to safeguard its reputation. Conversely, the company representatives might have chosen silence due to *appropriateness* concerns, believing the current setting was unsuitable for the discussion or that another issue required immediate attention.[7] Finally, the culpable party may *unintentionally* neglect to mention the issue, simply forgetting to mention it. The need for context to differentiate motives is the challenge in studying silence, and it is why silence is seldom used as data by itself. Although it is often straightforward to acquire additional insights from contextual data, silence typically retains a degree of ambiguity. A case in point involves French lung specialist Michel Aubier. As a top specialist at a leading Paris hospital, Aubier provided testimony about the relationship between air pollution and lung cancer rates. Later, it was revealed that oil company Total had retained Aubier as a physician for their executive staff, paying him roughly €100,000 per year, and a court imposed a penalty of €50,000. While it might be tempting to infer a conspiracy between the two parties, even with the substantial contextual data that the court undoubtedly gathered, the court did not find that Aubier had adversely influenced the legislative process (Casassus, 2017). Only Aubier can truly know his motives. We cannot rely on his word, so we will never definitively know whether he

[7] To add to the complexity, the culpable party may fully intend to raise the issue later, only to develop a malicious intent later.

considered the contract irrelevant, simply an obligation among many that slipped his mind, or he intentionally deceived the lawmakers.

This paragraph draws a distinction between silence about a specific fact and silence on a topic. Silence is generally perceived as suspicious when an actor engages in a discussion, but conveniently omits a relevant fact. The court case that followed Aubiers' testimony originated because he had declared no conflict of interest. In contrast, it becomes more challenging to ascertain intent when an actor avoids a topic entirely. Strategic reasoning can motivate this broader form of silence. For example, TransCanada and its allies, when building support for the Keystone XL mega pipeline, chose to ignore climate impacts in their communication with the press and public. Spokespeople remained on message (Wood, 2019), focusing solely on topics for which they had a favorable line ready. Likewise, Republican members of Congress exploited the power of silence—they were less likely to discuss the topic of climate change in their speeches, thus avoiding criticism based on explicit climate denial or inaccuracies (Guber et al., 2021).

The phenomenon of categorical silence on a topic introduces a significant distinction and research challenge for silence—the lack of data where silence prevails. Paradoxically, empirical research on silence simultaneously removes this silence. In contrast, we remain oblivious to the existence of a topic where silence is *successful*. Successful silence aligns with former Secretary of Defense Donald Rumsfeld's notorious "unknown unknowns" (Rumsfeld, 2002). No one outside a select circle even suspects an issue. Penetrating that circle can fundamentally shift our understanding of an organizational context (Costas & Grey, 2014). The reason we have any knowledge about such issues is that they sometimes bear an "expiration date," perfectly exemplified by the Manhattan Project. The Manhattan Project stands as a stellar example of

successful silence, with over 100,000 people working on the project without any information leaking. However, after the bombings of Hiroshima and Nagasaki, details about the project inevitably emerged (Groves, 1983). Undoubtedly, there are many unknown unknowns out there, but we cannot discuss these examples of successful silence because they are inherently elusive. Instead, every instance of silence we find in the literature is either expired or is an instance of *failed silence* that has not been successfully concealed. Mapping out instances of successful silence is inherently impossible; however, we can observe varying degrees of silence on many topics. Topics may only be discussed by a select circle of people based on their relevance or availability of data. A notable subtype on this spectrum is *institutionalized silence*, which can exist surrounding taboo topics. The Kinsey Study, which revealed that homosexuality among males was much more prevalent than previously assumed (Kinsey, 1948), provides a potent example. The U.S. government helped suppress homosexuality, but silence on the topic was not merely a matter of stringent top-down information control. Widespread discrimination against homosexuals led to pervasive silence, as individuals were hesitant to publicly declare their sexual orientation. This individual-level taboo concerning homosexuality snowballed into a broader silence and the belief that homosexuality was not very common, a misconception debunked by Kinsey (1948).

2.7 Conclusion

In conclusion, while the Kinsey Study provides a stark example, it serves as a poignant reminder that silence is also a cultural phenomenon. Considering silence solely in organizational terms provides valuable insights, yet it falls short of fully capturing its influence. The issue of climate change, for instance, is causing a growing societal divide, particularly in the United States (Egan & Mullin, 2017). This divide often falls along state or county lines (Howe,

Mildenberger, Marlon, & Leiserowitz, 2015), and fossil fuel companies or industry organizations make frequent attempts to shape the climate discourse at all levels, whether national or local. The discourse has been thoroughly infiltrated by talking points from climate action countermovements, a phenomenon most pronounced in the United States (Farrell, 2016; Hornsey et al., 2018). However, even if we could hypothetically silence all industry voices, we would likely still observe a significant discrepancy in the climate discourse between, for example, Massachusetts and Nebraska, or British Columbia and Alberta. Moreover, without the passive acceptance of individuals outside the immediate field, the current status quo, whereby most Americans avoid discussing climate change in everyday life, could not exist (Leiserowitz et al., 2022).

Viewing silence as a broader cultural phenomenon could enhance our understanding of the gap between what we say and what we do. Cultural silence extends beyond merely decoupling policy and practice. As an explanatory factor in a model, this form of silence divides climate discourse and causes of climate change into two distinct spheres. A separate non-climate discourse would then determine our emissions and other actions affecting the global climate. Fossil fuel companies could largely sit out the climate change debate, secure in their knowledge that discussions in Washington or Ottawa would have little impact on their business operations in pro-industry states and provinces. With such an arrangement in place, climate denial and the climate countermovement assume a different role. Rather than acting as a counterforce to challenge the climate action movement, climate denialists merely need to provide an alternative belief system for supportive communities already inclined to back new and existing fossil fuel projects for reasons unrelated to climate change (or based on the boomerang effect; Byrne & Hart, 2009). Meanwhile, with most discourse filled with silence, the question of climate action

resembles less a battle of words and more a dormant, creeping conflict. Consequently, many actors who play a role at the micro level are not actively engaged but individuals maintaining the status quo by simply living their lives. Crucially, when climate change questions arise, the struggle is not for a better argument, as most communities and individuals are predisposed to a position. Instead, climate denial provides the argument that individuals actively seek when they wish to reinforce their beliefs (Druckman & McGrath, 2019) before falling back into silence.

3 CONTEXT

> *The scientific community needs to get involved in this fray now… Phase out of emissions from coal is itself an enormous challenge. However, if the tar sands are thrown into the mix it is essentially game over.*
>
> —NASA Goddard Institute for Space Studies director James E. Hansen calling for protests against Keystone XL in 2011 (Hansen, 2011).

In this thesis, I examine the discourse around TransCanada's Keystone XL oil sands pipeline, a microcosm that encapsulates the entire spectrum of our current climate discourse and includes many key participants. In fact, pipeline opponents used the pipeline project as a symbol of the broader conflict over climate action. The climate movement introduced the *Keystone Principle*, which suggests that fighting climate change requires preventing new fossil fuel sources from reaching the market (Cheon & Urpelainen, 2018). The Keystone XL pipeline, which gives the principle its name, would have provided access to the international market for Canadian oil producers drilling in Alberta's oil sands. This field contains enough oil to potentially raise the global mean temperature by 0.36 °C (Swart & Weaver, 2012). The controversy over the project unfolded simultaneously in two arenas. In Washington, climate scientists and environmentalists rallied against the political establishment, which had before approved all similar projects. See Table 2. Along the pipeline route, the environmental movement collaborated with traditionally conservative ranchers and landowners, focusing on local environmental and social impacts rather than climate change.

In this dissertation, I focus on a specific project, as opposed to an industry (Hoffman, 1999), a trend (Bansal & Roth, 2000), or a social movement (King, 2008). This approach not only provides a palpable perspective on the current climate discourse, but also permits us to link the broader phenomenon to the local, concrete social world (Smith, 2005). The everyday social

world, which underpins and sustains our current fossil fuel-dependent way of life, is frequently overlooked (cf. Bechky, 2011). Models that do not link this overarching macro-level issue with an inhabited field where actors go about their everyday lives might not map onto observed micro-level dynamics (Leibel, Hallett, & Bechky, 2018; Weber, 2019). Certain segments of the business sustainability literature are prime examples. This literature has generated numerous models for sustainable businesses, but struggles to reconcile these models with the reality of climate change (e.g., Howard-Grenville et al., 2014). Meanwhile, the problems these models were intended to address continue to escalate (Hoffman & Jennings, 2015). This chapter introduces the empirical context of Keystone XL, which I use in upcoming chapters to attempt to bridge the gap between the broader discourse on corporate climate action and the observed climate reality.

3.1 The Keystone Project

The Keystone XL pipeline was devised two years after its predecessor, Keystone I, at a critical time for Alberta's oil industry. From 1990 to 2010, the annual production of oil sands increased from approximately 125,000 barrels to over 500,000 barrels. Before the start-up of Keystone I in 2010, the industry was bottlenecked by insufficient export capacity. The start-up of Keystone I resulted in a significant surge in exports, from approximately 2,600 to 2,800 barrels daily (Sönnichsen, 2022). However, the Canadian Energy Research Institute predicted in 2011 that without additional pipeline construction, the industry would face another bottleneck before the end of the decade. At that time, the likeliest candidates to alleviate this surplus, listed in order of anticipated completion, were Keystone XL for 2013, Northern Gateway for 2016, and a proposed capacity expansion for the existing Trans Mountain pipeline (Honarvar, Rozhon, Millington, Walden, & Murillo, 2011; see also Table 2).

Table 2: Permitting History of Oil Sands Pipelines

Pipeline	Proposed	Capacity	Status	Border crossing	Presidential Permit
Trans Mountain	1940s	300k bbl/d*	Completed 1952	No	—
Enbridge Line 3	1950s	380k bbl/d*	Completed 1968	Yes	—
Express-Platte	1990s	800k bbl/d*	Completed 2002	Yes	—
Alberta Clipper	2006	450k bbl/d*	Completed 2010	Yes	Granted
Keystone I	2006	600k bbl/d*	Completed 2011/2012	Yes	Granted
Keystone XL	2008	800k bbl/d*	Rejected 2014/2021	Yes	Rejected
Northern Gateway	2010	525 bbl/d*	Rejected 2015/2016	No	—
Clipper Expansion	2013	800k bbl/d*	Approved 2017	Yes	Issued
Trans Mountain Expansion	2013	600k bbl/d*	Under construction	No	—
Line 3 Replacement	2014	760k bbl/d*	Completed 2021	Yes	—

Note: Presidential permit required only for new pipelines that cross US international borders under Executive Order 13337, issued in 2004.
*: Barrels per day

From 2008 to 2011, it seemed inevitable that the XL permit would be approved until events in Nebraska changed the trajectory, as shown in Table 3. On October 10, 2010, then-Secretary of State Clinton indicated that her department was inclined to approve Keystone XL. Then, on August 26, 2011, the State Department announced its plan to make a decision by the end of the year. However, on October 23, 2011, Nebraska Governor Dave Heineman disrupted the process by calling a special session of the Nebraska Legislature to discuss pipeline regulations that could affect Keystone XL. During the mandatory public hearings on the bills, citizens voiced their concerns about a variety of issues, including the pipeline's proposed route over an aquifer that provides drinking water to 85% of Nebraskans and irrigation water to 30% of the United States' agriculture. Landowners, especially farmers, constituted most participants

in these fs. In 2011, despite Nebraska being the 37th most populous state, its agricultural industry was the fourth largest in the nation. In response to the Special Session, the State Department announced a delay in the permit decision until at least 2013 to review alternative routes.

Table 3: Timeline of Permitting Events

Date	Event
Apr. 19, 2006	TransCanada files application for Keystone I pipeline with State Department.
Mar. 14, 2008	US government issues Presidential Permit for Keystone I.
Sep. 19, 2008	TransCanada files application for Keystone XL pipeline with State Department.
Oct. 10, 2010	Former Secretary of State Clinton remarks that State Department is inclined to approve Keystone XL.
Feb. 10, 2011	According to an internal memo, State Department assures former TransCanada CEO Russel Girling that permitting process will stay on track despite attacks from environmental organizations: "[the Department of] State is acutely aware of the need for a timely decision on the TransCanada's Keystone XL application and is not interested in unnecessarily delaying its decisional process."
Aug. 26, 2011	State Department publishes Final Environmental Impact Statement on Keystone XL: "We are on track … to make a determination by the end of this year."
Sep. 27, 2011	State Department clarifies that pipeline siting is governed by states along the route: "We just really are responsible for the part that comes over the border and goes to the first valve"
Oct. 23, 2011	The Governor of Nebraska calls Special Session of Nebraska Legislature on pipeline legislation to influence Keystone XL route.
Nov. 7-9, 2011	Nebraska Legislature holds first three public hearings of Special Session on Keystone XL.
Nov. 10, 2011	State Department announces Supplemental Environmental Impact Statement to review the route of the Keystone XL pipeline: "The concern about the proposed route's impact … has resulted in the Nebraska legislature convening a special session to consider the issue. [T]he [State] Department has determined it is necessary to examine in-depth alternative routes [that] could be completed as early as the first quarter of 2013."
Nov. 10, 2011	350.org's Bill McKibben celebrates the developments as a victory over the pipeline project: "Um, we won."
Nov. 14, 2011	TransCanada announces that the company will work with the State of Nebraska to find a new pipeline route.
May 15, 2012	Three landowners file suit against TransCanada and State of Nebraska over

Date	Event
	the process used in Nebraska to approve new route for Keystone XL.
Apr. 18, 2014	State Department announces that it will delay decision on the Keystone XL permit application over still unresolved lawsuit in Nebraska: "Agencies need additional time based on the uncertainty created by the on-going litigation in the Nebraska Supreme Court…"
Nov. 6, 2015	President Obama rejects Keystone XL permit application less than a month before UN Climate Change conference: "[T]his pipeline would neither be a silver bullet for the economy, as was promised by some, nor the express lane to climate disaster proclaimed by others. [F]rankly, approving this project would have undercut that global leadership … [a]nd three weeks from now, I look forward to joining my fellow world leaders in Paris."

Aside from the project's immense physical scale and commercial significance, Keystone XL held substantial symbolic value for both its advocates and opponents. Those in favor viewed the project as a symbol of economic revival in the aftermath of the 2008 global financial crisis. They argued that importing oil from the ally Canada would permit the United States to meet its energy needs, while reducing dependence on non-allied Middle Eastern countries. Advocates also propagated TransCanada's claim that the project would create 20,000–120,000 jobs—numbers that TransCanada subsequently adjusted to 10,000 "during construction".

High-profile activists, scientists, politicians, and Nobel Peace Laureates warned that the Keystone XL pipeline would spell "game over" (Hansen, 2011) for the climate (see Table 4). In June 2011, a joint call to protest by notable environmentalists and climate scientists marked a peak in momentum. These two groups joined forces in the summer of 2011 to stage a large-scale protest outside the White House. This event seized the political media's attention during the typically quiet summer months, when Congress was not in session. The protest lasted two weeks, with organizers reporting a peak participation of 10,000 to 20,000 individuals. Over 1,000 people were arrested, including prominent figures such as James Hansen, then-director of the NASA Goddard Institute for Space Studies. The State Department compartmentalized their concerns

into additional reports for the existing Environmental Impact Statement, without modifying the overall conclusions (see also Table 3): "The proposed [p]roject is not likely to impact the amount of crude oil produced from the oil sands. However, for illustrative purposes, the [State Department] commissioned [a] study" (DOS, 2011).[8]

Table 4: Selected Documents from Macro Discourse

Date	Description
May 2010	Corporate Ethics International, Earthworks, Natural Resources Defense Council, and Sierra Club issue joint report "Tar Sands Invasion," to draw attention to local environmental and climate impacts of Keystone XL pipeline.
Jun. 23, 2010	Fifty members of Congress send letter to the State Department to voice concern over the oil sands pipeline's permitting process and request a life-cycle greenhouse gas assessment for oil sands.
Jun. 3, 2011	Then-Director of NASA's Goddard Institute James Hansen publishes "Silence is Deadly" assessment of Keystone XL on Columbia University's Website. The letter states that oil sands spell "game over" and becomes a staple of anti-Keystone XL and climate movement.
Jun. 23, 2011	Prominent environmentalists and scientists including James Hansen, Naomi Klein, Bill McKibben, and David Suzuki publish joint call for protest against Keystone XL in Washington.
Aug. 24, 2011	Largest environmental organizations publish joint letter in support of 275 anti-Keystone XL protesters arrested at White House protests, call on president to reject Keystone XL permit.
Sep. 07, 2011	Nine Nobel Peace Laureates publish joint letter, calling on president to reject permit for pipeline that would "endanger the entire plane".

Note: Documents selected for their media attention and impact on mobilization of anti-Keystone XL activists.

3.2 Hearings on Keystone XL in Nebraska

The Nebraska Legislature was instrumental in the demise of Keystone XL. As the state senators deliberated on pipeline-related bills, they also held public input sessions. The state constitution mandated that these sessions be open to anyone, including individuals from outside the state. Notable participants included TransCanada employees, national industry organization

[8] As a side effect, the Environmental Impact Statement swelled to over 8,000 pages in 2011.

representatives, environmentalists, and academics (see also Table 7). Each witness was allotted five minutes to speak. However, these testimonies often evolved into spontaneous dialogues, as the senators were free to ask as many follow-up questions as they wished. The discussions in the Nebraska Legislature largely skipped topics central to the macro discourse, such as climate change and oil sands. Led by state senators, the diverse field that convened in Nebraska effectively imposed silence on a key discourse topic in an organic and interactive manner. This assembly successfully pushed back against the original route through the state's major aquifer, which resulted in a multi-year delay that ultimately led to Keystone XL's downfall. It remains the only mega pipeline project to have its Presidential Permit application rejected by the U.S. government (see Table 2).

The successful effort to halt the imminent permit decision demonstrated that the success of TransCanada's mega pipeline was not a foregone conclusion. Before Keystone XL, the North American fossil fuel industry enjoyed what environmentalist and Keystone XL critic McKibben termed an "aura of invincibility" (McKibben, 2015). However, Nebraska's pushback emboldened the White House, which eventually rejected the permit application in 2015; see Table 3. One national environmental organization, the Environmental Resources Defense Council, celebrated the Keystone XL defeat as "one of this generation's most monumental environmental victories" (Denchak & Lindwall, 2022). Supporters of the pipeline also acknowledged the significance of the defeat, albeit with an almost conspiratorial slant. Jack Gerard, president and CEO of the American Petroleum Institute, remarked: "This has a chilling effect on all those other investments, because they are now not confident that the administration will adhere to the law and the requirements. … Extreme ideologies should not prevail over American opportunity" (Green, 2015).

3.3 Local Threat vs. 'Game Over' for Climate

The Keystone XL discourse is notably fragmented, providing a clear view of the interplay between micro and macro levels of analysis. The discourse primarily splits into a national narrative and a local narrative along the pipeline's path, especially in Nebraska, as exemplified by Figure 1. One discursive strain can be traced to national-level climate scientists and environmental organizations that opposed the project because of the climate impacts of the Alberta oil sands. These actors emphasized the oil sands potential climate impacts and the environmental consequences of oil sands extraction and processing. The second discourse strain arose from local farmers, landowners, and grassroots environmental activists along the pipeline route, particularly in what observers termed "battlefield Nebraska." These groups voiced concerns about localized environmental impacts, potential effects on agriculture, and TransCanada's perceived "bullying" negotiation tactics over easements. TransCanada responded to these local issues by challenging states' jurisdiction over interstate pipelines and threatening legal challenges.

The two discursive strains reflect their respective social environments and can be attributed to the interests catered to in each context. In some cases, explicit strategizing marks this catering to interests. The Natural Resources Defense Council, an environmental organization with three million members and a staff of 700, pinpointed vital local issues in a Keystone XL report a year before Nebraska's pivotal special session. This report examined the project's role in exploiting Canada's oil sands and their climate impact, after which it shifted the focus to the risk of water pollution along the pipeline route, particularly around the Nebraska aquifer. Around the same time, the Sierra Club, America's largest environmental organization, published "Toxic Tar Sands: Profiles from the Front Lines," a report profiling 11 activists from along the pipeline

route, each with a unique biography and local motives for opposing Keystone XL. Conversely, TransCanada built a network of supporters along the pipeline route, notably through a formal agreement with the American Federation of Labor and Congress of Industrial Organizations, a national federation of labor unions with over 10 million members. Moreover, financial filings revealed the creation of a faux grassroots organization, Nebraskans for Jobs and Energy Independence, by two TransCanada employees and a local union manager from Laborers' International Union of North America (LIUNA). This strategy is often termed *astroturfing* (Lyon & Maxwell, 2004). This astroturf organization coordinated robocall campaigns, placed ads, and wrote letters to Nebraska state senators. Both sides successfully rallied support. Hearings along the pipeline route and in Washington, conducted by the State Department or state legislatures, were well attended and highly polarized, especially in Nebraska. Notable national-level actors represented in the Nebraska discourse included the National Environmental Resources Defense Council, the Sierra Club, and 350.org; Cornell University; business managers of multiple unions (including LiUNA, International Brotherhood of Electrical Workers, and United Association); and industry organizations such as the American Petroleum Institute, the Consumer Energy Alliance, and the Association of Oil Pipe Lines. See also Table 7.

Figure 1: Keystone XL as a Symbol of Climate Policy or Local Concern

a — August 2011 Protest Before the White House, b — January 2011 Protest in Lincoln, Nebraska

The unique outcome of the pipeline project, coupled with the clear, stratified discourse surrounding it, presents a distinct opportunity. This dispute, which involved all major players in the current climate conflict, culminated in the defeat of one of the industry's major players and a victory for the climate movement. It symbolizes the upper bound of successful climate action. With its clearly stratified discourse involving participants at both the local and national levels, the project provided a platform for observing ordinary citizens and comprehending their engagement with fossil fuel projects and the climate movement.

3.3.1 Data

I began my data collection on Keystone XL discourse by gaining an overview of topics, levels of analysis, and the field's structure. My data collection strategy follows Latour's (2005) appeal for research on *matters of concern*. The pipeline itself constitutes a tangible *object of concern*: TransCanada created maps, procured pipes and fittings, and evaluated oil reserves. However, before construction could commence, the project underwent discussion in various subfields or *assemblies*. Pivotal events might transpire not only in traditional assemblies at the hierarchy's peak but anywhere in the field, for instance on a social network like Twitter, an impromptu assembly, or a church (cf. Reinecke & Ansari, 2021). Consequently, I began with a broad search for meetings and discussions on Keystone XL and downloaded 2,455 news articles on Keystone XL from Factiva (see also Section 5). From this material, I inferred the structure of the institutional field: I identified the abstract discourse at the national or macro level, recognized the State Department's significance as a meso-level actor, and discerned the distinct and tangible discourses in the states along the pipeline route—Montana, South Dakota, and Nebraska—and, finally, realized the crucial role of the landowners along the pipeline route, particularly in Nebraska, often referred to as the *battlefield* for Keystone XL (e.g., Vanderklippe, 2011).

I iteratively narrowed down my data collection to the diverging macro discourse at the national level and the local discourse in Nebraska, in and leading up to the pivotal year 2011. I studied four sources of data: assemblies of the field such as congressional hearings, State Department hearings, and state legislature and commission meetings along the entire pipeline route, to understand how interactions shaped the unfolding discourse; other forms of interactions, primarily letters between participants and memos on meetings between the State Department and other actors—many of these were made public through requests under the Freedom of Information Act; documents in which participants at these national and local level described their reasons for opposing or supporting Keystone XL; and State Department documents to learn how this meso-level actor reconciled the two diverging instantiations of the discourse on Keystone XL.

In total, I analyzed 265 primary sources comprising approximately 350,000 words; 26 secondary sources comprising approximately 60,000 words; 30 reports and analyses comprising approximately 1.3 million words (the project's Environmental Impact Assessments account for most of this word count); and transcripts of 24 assemblies comprising approximately 800,000 words. To qualitatively determine the topics of discourse and make comparisons across levels of analysis, I followed different strains of the conversation. My search yielded in-depth documents on a wide variety of topics, such as social and environmental impacts, pipeline safety issues, and plans for the construction of the pipeline, including factors such as workforce and building materials. I selected 126 of these documents, alongside testimonies to the Nebraska Legislature and to the American Congress to create the topic model which I employed in the mixed-method analysis presented in Section 6.3. For the purpose of creating the topic model, I treated all remarks made by one individual on one day and in one assembly as one document. I used

remarks by 828 individuals who participated in one or multiple assemblies. See Section 4 for a description of how I created the topic model. The corpus of my topic model also includes comment letters sent to the State Department, and op-eds on Keystone XL. Taken together, these documents allowed me to analyze the discourse on Keystone XL across analytic levels, and to identify divergences, particularly between Nebraska and the national discourse (see Section 3.3). I discovered that the national discourse revolved around climate change and environmental destruction in and around the Canadian oil sands. Meanwhile, along the pipeline route, actors raised concerns about risks to agriculture and the local environment, as well as TransCanada's treatment of landowners. I conducted my inductive research using the rich set of interactions within and between the different levels and localities. Within my dataset, the Nebraska Legislature stood out, both as pivotal for the conflict over Keystone, and because the meetings had unique characteristics (see also Section 3.2). These characteristics allowed me to observe how dismissal and steering—concepts that apply to individual interactions—play out at a scale across multiple events and bring about silence on specific topics, leading to a decoupled discourse (see Section 6.3).

The hearings in Nebraska were more open and had a greater variety of participants than, for example, the State Department hearings, which allowed me to isolate the impact of dismissal and steering. Similar to State Department hearings, any individual could make remarks on any topic. I first observed what topics the witnesses raised in their initial, unconstrained testimony. In other assemblies like the State Department hearings, there was no observable reaction to the testimonies. However, in the Nebraska Legislature, I could also observe the senators' reactions to the testimony. The state senators would often initiate a dialogue with the witness, for example if they believed that doing so would assist them in making their case regarding an upcoming bill

under discussion. Unlike other assemblies, the hearings in Nebraska attracted a degree of national attention, with participants traveling from, for instance, Washington, Texas, and Canada to participate. The Nebraska Legislature represents an intersection of the local and national discourse, where a gap between the two discourses would need to be actively maintained. Therefore, I could observe the active enforcement of silence on the climate change topic with my novel approach to topic modeling, as described in the next section.

4 METHODS

> So long as he remains unaware of the limits inherent in his point of view on the object, the anthropologist is condemned to adopt unwittingly for his own use the representation of action which is forced on agents or groups when they lack practical mastery of a highly valued competence and have to provide themselves with an explicit and at least semi-formalized substitute for it in the form of a repertoire of rules, or of what sociologists consider, at best, as a "rôle", that is, a predetermined set of discourses and actions appropriate to a particular "stage-part".
>
> —Pierre Bourdieu (1977) in *Outline of a Theory of Practice*

In this chapter, I discuss text as data with a point of view. The contents of text, whether written or spoken, are bound by the socio-cultural situatedness of the actor—factors such as geographic context, upbringing, or position in the hierarchy of the current interaction (Bourdieu, 1977). With the "Cambrian explosion" in Natural Language Processing and innovations such as topic modeling or, more recently, AI chatbots like ChatGPT and AI translation, this situatedness or "bias" of text warrants our attention more than ever. I have three goals. First, I discuss the affinity between Natural Language Processing and social science research, particularly institutional analysis. Second, I discuss the need for research on institutions across levels of analysis, with a focus on uncovering biases that function at the macro level. Finally, to provide a practical understanding, I present a brief demonstration study.

I focus on text, spoken words, and symbols in language and culture at both the macro and micro levels (Leibel et al., 2018). At the macro level, research examines how entrenched interests, formal rules, and informal values shape the idioms, textbooks, or canonical documents that guide individuals' behavior (Steele & Hannigan, 2020). At the micro level, institutional theorists examine how socially situated actors co-construct a shared reality (Bechky, 2011). For instance, individuals may sustain the status quo by shaping dominant frames to resist unwanted

changes. This interactive process can be difficult to predict, making specific outcomes difficult to foresee (Furnari, 2014).

Bridging these macro and micro levels often presents a challenge. Traditional methods do not allow the study of the meanings of concepts and their reflection in discourse in separate steps, as the two are intrinsically connected and mutually constitutive (cf. Barley, 2008; Drori, Walgenbach, & Höllerer, 2020). Research at the micro level on day-to-day activities may provide limited insights into actors' roles in macro-level processes. Conversely, narratives focusing on the macro level may lack depth, impeding our understanding of the processes that affect individual population groups, particularly underrepresented ones (Munir, 2020).

The hope is that Natural Language Processing can help us untangle this web of meaning by allowing the simultaneous analysis of both parts in one step (Lounsbury & Wang, 2020) by analyzing the day-to-day lives of actors and complementing this analysis with macro-level data. In this section, I propose a novel mixed-methods approach to analyzing language and institutions across different levels of analysis using topic modeling. I compare discourse across levels and conduct a more precise and comprehensive analysis of the dynamics at the local level (Barley, 2008; Leibel et al., 2018). I make three contributions. First, I demonstrate how a combination of bias correction and "on-the-fly" models permits us to develop topic models for a string of words at any level of analysis. Second, I use this method to show both how individuals contribute to macro-level changes and how macro-level discourse influences micro-level interactions. Third, I demonstrate how the outcome of a macro-level debate on climate impacts is contingent on the socially situated micro-level discourse surrounding local impacts.

4.1 Text Data, Natural Language Processing, and Social Science

Computers have progressed beyond merely serving as a crutch for locating and retrieving relevant passages from a corpus of text, that is, answering questions such as "*Where does the word x appear?*' Today, topic modeling can independently categorize text (DiMaggio, 2015). Essentially, a topic model addresses the question,"*What sets of words occur together frequently?*" However, the burgeoning field of AI ethics warns that the output of any Natural Language Processing is intrinsically a product of its input, for better or worse, inheriting all its biases and oversights. For instance, all large language models are invariably trained on a finite collection of substantial datasets that can be scraped from public parts of the internet, thereby excluding alternative voices from niche fields. Consequently, without appropriate bias correction, dominant voices are likely to be amplified. As a result, the models produce outputs that themselves propagate any taken for granted assumptions of the input data (Bender, Gebru, McMillan-Major, & Shmitchell, 2021). This concern regarding Natural Language Processing parallels those of appropriate analytical lenses in institutional theory research. Merely conducting a meticulous analysis is insufficient; the researcher's application of critical judgment is equally vital.

4.1.1 Levels of Analysis and Bias

Social science seeks to construct models that deliver a grounded understanding, or *verstehen*, (Weber, 2019) of society across levels of analysis. This approach ensures that discussions of macro-level processes can be related to micro-level social actions—enabling us to address challenges such as climate change, which span levels of analysis (Howard-Grenville et al., 2014; Cowen, Rink, Cuypers, Grégoire, & Weller, 2022). To achieve this, we must be aware

of both overarching systems (Lounsbury & Wang, 2020) and potential oversights *at the coalface* concerning lived experiences (Barley, 2008; Bechky, 2011).

The first challenge for empirical social science research is to avoid overlooking the broader context. Several significant sociological concepts play out at a micro level but only reveal themselves when also viewed on a macro level—that is, the parallel behavior of many organizations—such as formal and informal rules, norms, and beliefs, or entrenched interests (DiMaggio & Powell, 1983; Meyer & Rowan, 1977; Barley, 2010). Micro-level data alone may not capture the full extent of these concepts. Lounsbury & Wang (2020) raise global authoritarianism as an example.

However, research that remains at the macro level will inevitably be incomplete in capturing the lived reality of actors and their interactions. For example, our research does not provide a true sense of any of the organizations that we study (Bechky, 2011). Institutions are inhabited by individuals, and macro-narratives may be disconnected from their day-to-day reality. A fad or an instance of symbolic management may appear different when viewed up close. These shifts in discourse cannot be identified by focusing on the discourse at the macro level, alone, because they result from situated interactions (Leibel et al., 2018). To create models that accurately observe how meanings emerge through discourse, we need sources of data and methods that allow us to understand how actors create discourse through their interactions. Here, I show how topic modeling can offer a solution to some of these analytical challenges.

4.1.2 From Bag of Words to Topic Modeling

When social scientists conduct computer-assisted content analysis, they often invoke the question, "*Where and how often does a specific word appear?*" This is termed the *bag of words* approach, as the researcher initially disregards the context in which the word appears and the

specific order of words within the documents (Manning & Schütze, 1999, p. 237). Topic modeling extends upon the bag-of-words approach by considering not only the presence of individual terms within documents but also the frequency of the co-occurrence of pairs of words.

Mathematically, topic modeling estimates a K-dimensional vector of word weights for each term in the corpus. K denotes the number of topics, and researchers iteratively tweak this value until they find a model that fits their research objectives (Bohr & Dunlap, 2018). Topic modeling assigns low word weights to words that occur randomly across many documents and allocates the same topic to sets of words that frequently occur together across a subset of documents. That is, all words in this set will have a high weight for a topic k and lower values for all other topics (Blei & Lafferty, 2009). Notably, even without information regarding the documents' origins, topic modeling can reliably replicate document groupings. Natural Language Processing now enables social scientists to employ prior knowledge to locate significant passages in a document via a keyword search and to use an autonomous method that can identify sets of terms—that is, topics—that characterize unseen documents (DiMaggio, 2015).

Topic modeling makes it possible to extract insights from larger textual datasets without a large team of research assistants. The topic model identifies a set of topics at the aggregate level of the corpus and enables researchers to track these topics throughout the corpus and beyond at any level of analysis. This bifocal capacity, in principle, allows analysis at both the macro and the micro levels (Lounsbury & Wang, 2020). To date, topic modeling in the social sciences has primarily been used to categorize organizational entities (Haans, 2019; Kaplan & Vakili, 2015) or to classify articles for literature reviews (Hannigan et al., 2019). In addition to these macro-level applications, researchers have experimented with use cases at finer granularity

levels, for instance, to identify similar documents (Blei & Lafferty, 2007), within-document homogeneity (DiMaggio, Nag, & Blei, 2013), or document sub-themes (Guber et al., 2021).

A topic model provides a set of *topics* and *topic weights* indicating the topics' prevalence across the corpus and an underlying set of weights for each term that indicate the strength of association with each topic. That second set of weights can be used independently of the corpus to calculate *topic loadings* for any string of words. Topics and topic weights are commonly used as a *macro lens*, for instance, in literature reviews (Montgomery et al., 2023; Bohr & Dunlap, 2018) or categorization studies (Haans, 2019; Kaplan & Vakili, 2015). The underlying weights for each word can be used at any level of analysis to calculate topic loadings on the fly (Blei & Lafferty, 2007; DiMaggio et al., 2013), thereby serving as a *micro lens* or meso lens. I introduce the two levels of analysis separately, but they are mutually constituted and jointly calculated via a two-step iterative algorithm. In the methods section, I will show how word weights are used to inductively identify the topics of any given text string.

Macro Lens: Topics and Topic Weights. The first output of the topic model is the distribution of the set of topics across the documents in the corpus. This information is stored in the document–topic matrix γ—a matrix of dimensions $M \times K$, where M denotes the number of documents in the corpus and K represents the number of topics in the model.[9] Each element in matrix γ signifies the normalized weight of one topic in one document, which collectively adds up to one for each document row (Blei et al., 2003; Blei & Lafferty, 2007; Wallach, 2006). These topic weights are also referred to as *gammas*. The overall distribution of all topics across the entire corpus is called the topic weights (Grün & Hornik, 2011).

[9] The number of topics M is occasionally also denoted as D since a corpus is defined as "M *documents denoted by* $D = \{w_1, w_2, \ldots, w_M\}$" (Blei, Ng, & Jordan, 2003, p. 995).

Existing research has leveraged topic weights to offer a high-level overview of the research subject, particularly in literature reviews for initial assessments. Topic modeling is conducted much the same as traditional regression analysis via Python or R, revealing the topics (Hannigan et al., 2019, p. 631). The only departure concerns the number of topics K. As I mentioned above, to tune this parameter, the researcher runs a few different models for comparison (Bohr & Dunlap, 2018). A surge of literature reviews has demonstrated how topic weights can be used in trend analysis. For instance, Montgomery et al. (2023) illustrate how certain topics have grown or declined, demonstrating a shift in the greenwashing literature from misleading consumer products to systemic greenwashing on a larger scale, such as through ESG data. Similarly, Bohr & Dunlap (2018) employ topic weights to identify the four dominant topics (out of 25) within the environmental sociology literature. They introduced each of these four topics using articles with high topic weights as examples. Last, Hannigan et al. (2019) draw on grounded theory, treating their identified topics as first-order concepts before manually creating second-order concepts. While literature reviews are becoming a popular use case for topic modeling, they do not reveal the method's full range and may not always be a good use case. Topic modeling used as a prelude to the actual analysis may result in redundant work (e.g., Hannigan et al., 2019), and the model may be disconnected from the actual analysis (e.g., Sarta, Durand, & Vergne, 2021).

Topic modeling can also be directly applied in empirical studies on categorization. In this context, the researcher identifies a set of texts that describe organizations and then uses topic weights as inputs for a regression model. For example, Haans (2019) created a dataset from 69,188 firm websites and calculated the strategic distinctiveness of 2,279 survey respondents by calculating the deviation of each respondent firm's topic weights from the average topic weights

for their respective industry (see also Taeuscher, Zhao, & Lounsbury, 2022). Kaplan & Vakili (2015) employed topic modeling to identify what they call "topic-originating patents" that are among the first in a new category where no prior patents exist. Last, Croidieu & Kim (2018) used their topics as first-order concepts and manually created second-order concepts, allowing them to trace the evolution of the amateur radio field over time. These applications in category research go beyond literature reviews, but they still either maintain the original document level of analysis or aggregate observations to determine topic loadings at the population level.

Micro Lens: Word Weights and Topic Loadings. In topic modeling, each topic is constituted by a set of associated terms described by word weights. These can be used to investigate the microdynamics of discourse. The topic modeling algorithm estimates how strongly each unique term in the corpus is associated with each topic, generating K weights for each term to represent these relationships (Blei et al., 2003; Hannigan et al., 2019; Blei & Lafferty, 2007; Wallach, 2006). These word weights, also referred to as *betas*, are crucial for calculating topic loadings. Typically, *topic weights* refer to the association between individual documents in the corpus and each topic, while *topic loadings*—calculated at any other level of analysis—allow crossing levels of analysis. Word weights or betas can be used to calculate the topic loadings of any string of words at any level. For instance, Hannigan et al. (2019) created a topic model by treating each individual paragraph in their sample of 66 articles as a *document* in their corpus. This strategy allowed them to create a topic model despite a small original sample size. After creating the topic model, they calculated the topic loadings for each article in their sample by multiplying the bag of words for each document with the betas associated with each term and normalizing the result so the total loadings for each document equal one. See Figure 2.

DiMaggio et al. (2013) extend this discussion by introducing *heteroglossia*—the presence of multiple "voices" that employ different word choices or syntax. They demonstrated their concept by showcasing divergent topic loadings within two sentences of the same document. At the aggregate level, the document was strongly associated with arts grants. However, the topic loadings of one exemplary sentence displayed the topic of controversial grants. In other words, a different voice emerged, passing judgment or politicizing sections of what was otherwise a descriptive document adhering to the bureaucratic conventions of the grant application process.

Guber et al. (2021) demonstrate that topic loadings can also be used to take an analysis into a more aggregate direction. They compiled a sample of congressional speeches on climate change and computed topic loadings at the party level. These aggregate topic loadings allowed them to demonstrate that Republicans tend to discuss climate change in terms of cap and trade, whereas Democrats are likelier to mention extreme weather events.

4.1.3 Use of Statistics and Potential for Oversights

Emerging tools from the Natural Language Processing toolbox are generating increasingly compelling "human language content" (Hirschberg & Manning, 2015)—such as the college-level essays produced by ChatGPT—however, the output is invariably a product of the input data and an underlying algorithm that governs the construction of this *human language content* from the textual input data. A large language model does not create new content but convincingly *parrots* the human language content that it was trained on. Parroting in large language models is hardly perceptible for two reasons. First, large language models are built atop word embeddings, and these word embeddings can facilitate some recombination of the input based on word similarity (Pennington, Socher, & Manning, 2014; Radford et al., 2019). Word embeddings can be used to generate new sentences that do not exist in the training data, but only

by pairing word combinations that exist—a process analogous to how topic models amalgamate observed word co-occurrences across documents into novel topics, which can include word pairs that have never occurred in any document. Second, the use of neural networks allows researchers to process much larger datasets. This increased corpus size, in conjunction with the recombination of inputs, means it is extremely unlikely that a reader will come across a document or even a phrase that is recognizable.

Nevertheless, a stochastic process operates behind the scenes to generate the output, which inherits all the biases, taken-for-granted assumptions, and blind spots present in the input data. For instance, the voices of marginalized groups underrepresented on mainstream platforms, such as Twitter, Wikipedia, or Reddit—which account for most available training data—are less likely to emerge (Bender et al., 2021). The mother tongues of two billion speakers are either virtually absent or barely present in the datasets collected (Joshi, Santy, Budhiraja, Bali, & Choudhury, 2021), meaning their thoughts and ideas will never be parroted, even in translated form. Furthermore, there is no mechanism for disambiguating a prevalent stance from an accurate one. Commercial providers have taken measures to prevent the promotion of known conspiracy theories or offensive content; however, large language models are still susceptible to what the field has euphemistically termed *hallucinations*: confidently presented but outright false responses (Ouyang et al., 2022).

The stochastic parrot metaphor used for large language models can also be applied to topic modeling, albeit on a smaller, more manageable scale. Lacking critical reasoning skills (Shanahan, 2023), topic modeling relies on patterns in the input data to produce topics:

> Indeed calling these models "topic models" is retrospective—the topics that emerge from the inference algorithm are interpretable for almost any collection that is analyzed. The fact that these look like topics has to do with the statistical

> structure of observed language and how it interacts with the specific probabilistic assumptions of [topic modeling]. (Blei, 2012, p. 79)

Picture topic modeling as a sieve that retains topics only if they meet a certain prevalence threshold. The researcher adjusts the number of topics, K (Hannigan et al., 2019), which functions as the *mesh size* of the metaphorical sieve. There is no definitive correct or incorrect number of topics. Instead, topic models with different numbers of topics represent the underlying corpus at varying levels of granularity. A topic model with a few topics may divide the corpus into general categories, such as "the economy" and "the environment," while a topic model with many topics generates more granular topics, such as "oil spills" or "climate impacts." The researcher should make the final decision based on substantive rather than statistical fit (Roberts et al., 2014; Steyvers & Griffiths, 2007; Bao & Datta, 2014). By iteratively tuning this parameter, the researcher can derive a "minimal number of coherent and substantively meaningful topics" (Bohr, 2020) suitable for their analysis, generally fewer than 50 (Schmiedel, Müller, & vom Brocke, 2019).

This process not only reduces the number of redundant topics but also precludes marginal topics. For example, Bohr & Dunlap (2018) use a topic model with 28 topics to analyze a corpus of about 175,000 newspaper articles, in which the lowest topic prevalence is about 1% of the articles. That topic model would not pick up on a topic that appears in only a few hundred articles. Furthermore, discourse on the same topic is not homogeneous. To instigate a frame break, for example, critical commentators may deviate from the norm and use "odd" language (Garfinkel, 1967; Steele, 2021; Reinecke & Ansari, 2021). A researcher using a topic model to examine a large corpus typically generates the model first and then inspects documents with a high topic weight for each topic (Schmiedel et al., 2019). Otherwise, the method would be no more efficient than simply examining random documents. However, a critical commentator—

one who raises a new view of an existing topic rather than establishing a new topic—will certainly not make a typical contribution to the discourse and, therefore, will not receive a high topic weight. The sampling mechanism in topic modeling accurately represents the mainstream opinions in a corpus, but niche opinions, including pointed criticisms that could foreground important issues, will remain obscure until they gain momentum.

4.2 Accounting for Bias When Creating a Topic Model

I started the inquiry with a qualitative analysis. The starting point was news articles collected from Factiva (see Section 3.3.1). The media coverage of Keystone XL is considerable —*The Wall Street Journal* alone published over 2,000 stories mentioning the project. I refined my search to articles that discussed a meeting or hearing, aiming to identify the earliest moments of change when the project's success came into question (Lounsbury & Crumley, 2007). This approach allowed me to pinpoint the Nebraska Legislature's Special Session in November 2011 as a crucial turning point, which I then "zoomed in on" (Nicolini, 2009). I gathered more qualitative and micro-level data at the local level, enabling me to perform a study spanning the micro and macro levels of analysis. Excluding my initial analysis through Factiva, I examined 265 primary sources totaling approximately 350,000 words; 26 secondary sources at approximately 60,000 words; and 30 reports and analyses with approximately 1.3 million words combined.

I transitioned from a qualitative to a mixed-method approach when I noticed a significant disconnect between the discourse at the macro and micro levels. The national discourse was dominated by the topics of climate change and oil sands extraction, while the local discourse centered on the local environmental and agricultural impact of the pipeline and on TransCanada's unfair treatment of landowners. The question was *how* local actors maintained

this separation within discourse because climate change hardly appeared in the local discourse. For example, during the Special Session in Nebraska, the participants touched only on climate change seven times, and four of these were tangential references. The parties bracketed the topic of climate change and neither elaborated on their positions nor provided their reasoning.

To understand this disconnect, I turned to topic modeling. I began with the Special Session of the Nebraska Legislature, along with other legislature hearings on Keystone XL. I sought to show how the macro-level topics in the discourse—climate change and oil sands extraction—were ignored by the participants of the Nebraska Special Session. I focused on the Nebraska state senators' reactions to 2,080 remarks by 139 witnesses across 225 testimonies. I sought to compare their responses by topic. I soon realized that the bias against climate change at the micro level was reflected in the resulting topic model.[10] Neither climate change nor oil sands appeared in a topic model that reflected the main themes of the discourse in Nebraska.

4.2.1 Bias Correction

I began my efforts to address the bias against the topics of climate change and oil sands by using a conventional approach to topic modeling. For hearings, I defined one "document" as the sum of all remarks by one individual on one day. Had I created a model from each specific remark, frequent short remarks like "Yes" or "Okay, thank you" would have dominated the topics in the longer, more substantive statements that I wanted to examine. I then followed the usual preprocessing steps (Denny & Spirling, 2018; Hickman, Thapa, Tay, Cao, & Srinivasan, 2022; Hannigan et al., 2019), identified compound words, such as *climate change* (Benoit et al., 2018; Bohr, 2020), and discerned a starting point for tuning the number of topics. I inspected multiple models until I arrived at a minimal number of meaningful and coherent topics (Bohr, 2020). Given that I could not identify a model that included topics such as climate change and oil

[10] I could also have addressed this problem by creating a topic model with a large number of topics, but that would have diminished the interpretability as very specific topics would have stood side-by-side with general topics such as climate change.

sands extraction, I needed to develop a more deliberate approach that could account for this bias in my input data relative to the broader discourse around Keystone XL.

I addressed the input corpus bias by iterating between local and national discourse. To increase the likelihood of yielding a topic model that reflects the full range of the discourse, I needed to carefully consider the discourse that I included in the modeling process. I knew which topics were absent from the local discourse—climate impacts and oil sands extraction—so I relied on my embedded understanding of the context to select appropriate documents to add. I first added documents on the pipeline project from the macro context, which I already had at hand. I also added different sections of the State Department's Environmental Impact Assessments, which included extensive discussions of the project's climate impacts. These reports brought me closer to a topic model that reflected the full range of the discourse.

However, including the reports created a different analytic problem. When writing a report, actors can choose their audience and message. In contrast, face-to-face interactions introduce constraints that shape discourse (Goffman, 1983). Consider the experience of the opponents of Keystone XL attending the special session of the Nebraska Legislature who wanted to convince individual members of the Nebraska Legislature to take regulatory actions that would impede the impending construction of the Keystone XL pipeline through the state. For example, in a report targeting other environmental groups and the broader public, the Natural Resources Defense Council argued, "[T]he United States now has the opportunity to strive to eliminate fossil fuel use altogether by 2050." Yet, in testimony before the Nebraska Legislature, a policy analyst dodged a senator's leading question about that very issue:

> SENATOR C.: Does [the Natural Resources Defense Council] support further development of fossil fuels in the United States?
> ANTHONY SWIFT: I don't know that I can personally speak to [the Natural Resources Defense Council]'s position on that point.

These differences in language use introduced a new methodological challenge. The topic model picked up the differences in language that came with the formal reports. For example, hearing transcripts include more personal pronouns and basic action verbs such as *do*, *know*, or *speak*, while reports use more formal discourse. This led to a new problem: The topic model could not disambiguate the combination of the formal language of the reports and the climate science terminology in those reports. To alleviate this new issue, I iteratively added more report-style documents that did not focus on climate change, such as additional sections of the Environmental Impact Assessment. By including these additional reports, I ensured that the formal language and climate science terminology no longer exclusively co-occurred, allowing the final topic model to disambiguate the two.

Table 5: Table: Topics in the Final Topic Model

Topic #	Title	Description
1	Local environment	Impacts on the local environment—erosion, restoration, and flora.
2	Legal questions	Legal questions, especially jurisdiction state vs. federal.
3	Permitting process	Discussions of State Department permitting process for Keystone XL federal-level permit.
4	Job creation	Keystone XL job creation—union jobs and local employment.
5	Energy economics	Keystone XL's impacts on energy supply, demand, and prices.
6	Witness examination	Language associated with the testimony of witnesses, particularly lexical verbs (talk, write, think etc.)
7	Project details	Descriptive accounts of the Keystone XL pipeline project, such as location, facilities, and alternative routes.
8	Land acquisition	TransCanada land acquisition and use of eminent domain
9	Climate change	Greenhouse gas emissions and climate change.
10	Nebraska regulations	Regulations proposed in Nebraska, especially during the Special Session on Keystone XL in November of 2011.

Topic #	Title	Description
11	Meeting administration	Expressions associated with calling witnesses, taking questions, and time management.
12	Agriculture	Concerns around agriculture and advocacy for protecting farms and ranches.
13	Oil sands	Local and global environmental impacts of oil sands exploitation.
14	Groundwater	Groundwater pollution risks, especially regarding Ogallala Aquifer and Sandhills.

I also experimented with two other measures to gain more control over the topics generated. Within documents, I attempted to increase the weights of compound words, such as *climate change* by manually increasing their frequency in the corpus by a factor of two. Compound words are generally more specific than individual words—consider *climate change*, *oil spill*, or *eminent domain*. Therefore, this measure increased the separation of the model into more specific topics. Across the corpus, I experimented with increasing the weight of specific documents by duplicating them. This did not yield a topic model that would reflect the full range of the discourse, so I turned to the inclusion of novel documents in the corpus. Finally, I arrived at a topic model with a broad range of voices, discursive styles, and topics, which I used in the analysis. This final topic model encompasses fourteen topics, see also Section 6.3 and Table 5. I now demonstrate how I used that improved, bias-corrected model to assess the issues that originally motivated my work across levels of analysis.

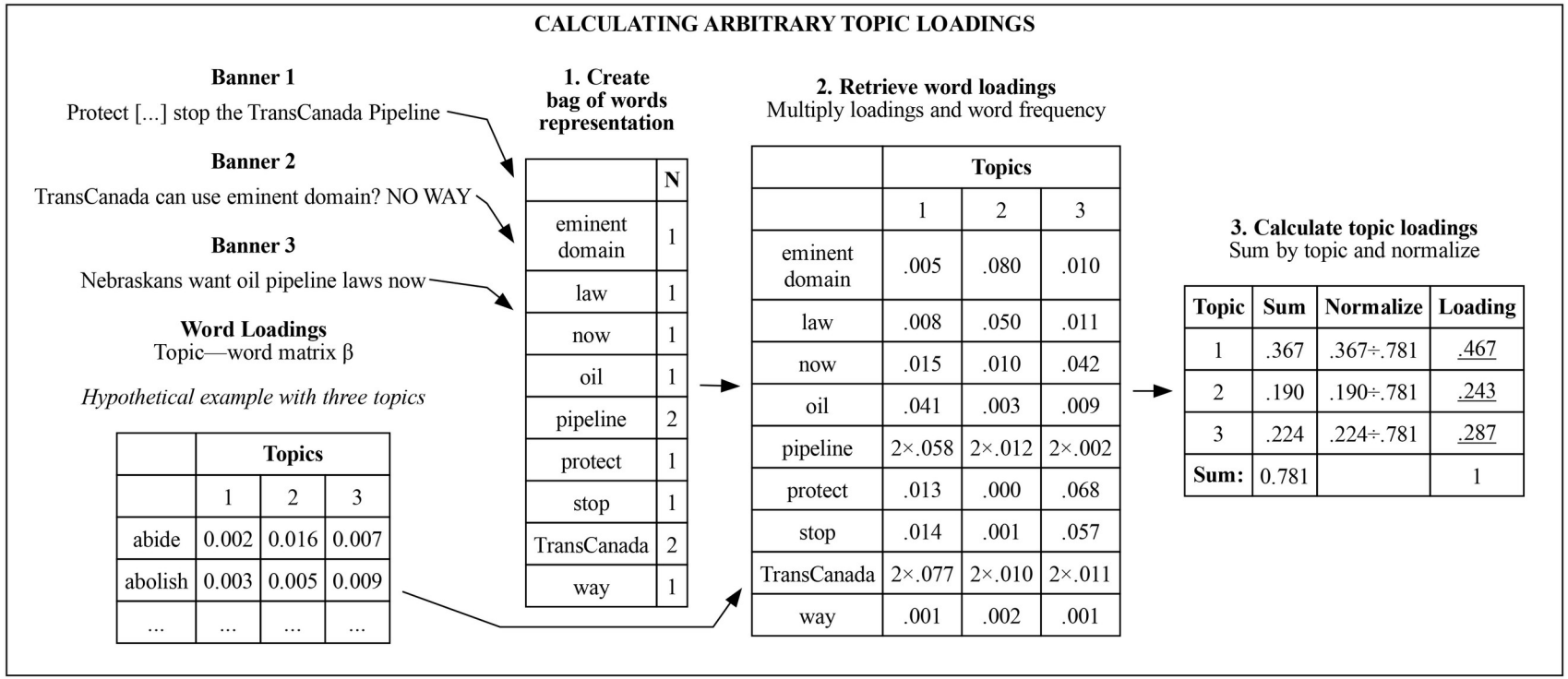
4.2.2 Calculating Topic Loadings

The key to my analysis was a method that permitted me to apply the same topic model to discourse about Keystone XL across levels. I wanted to highlight the discrepancies and illuminate the silence on certain topics. I used the topic–word matrix β, which I discussed in Section 4.1.2. Throughout the analysis, I used this matrix to *calculate topic loadings* at any level

of analysis, depending on the analytical needs. At each level, I simply created a new bag of words and extracted the relevant word loadings from the topic–word matrix β, as depicted in Figure 2. For a hypothetical, minimal example, I selected three banners (see Figure 1) from an anti-Keystone XL demonstration in Lincoln, Nebraska, held in January 2011. To calculate the topic loadings for the demonstration, I combined the words present in the banners into one bag of words (step 1). I excluded some words not present in the pre-existing topic–words matrix β—common words that did not specifically relate to any topic or infrequent words that did not help identify topics across documents. Next, I multiplied the word counts by the weights associated with each word. Finally, I added the results for each topic and normalized the totals so the sum of all weights across all topics equaled 1. For this demonstration, the weights were approximately 0.5 for Topic 1, 0.2 for Topic 2, and 0.3 for Topic 3, indicating that Topic 1 was the most prevalent and Topic 2 the least prevalent.

Finally, to aid my subsequent analysis, I created two tools. First, I created an R script to calculate the topic loadings for the content stored on my computer's clipboard. For example, this script was used to create Figure 4. I identified the relevant PDFs, selected and copied their contents, and ran the script to obtain the topic loadings. I then used the topic loadings to compare the discourse across the levels of analysis. Second, I precalculated the topic loadings at different levels of analysis by slicing and dicing the data. For instance, I computed the topic loadings for individual remarks made at the Nebraska Legislature's special session. I also created a shiny dashboard (Chang et al., 2021) that allowed me to query remarks and their associated topic loadings as well as to produce illustrations such as the one depicted in Figure 3.

Figure 2: Calculating New Topic Loadings



	Topics		
	1	2	3
abide	0.002	0.016	0.007
abolish	0.003	0.005	0.009
...	...	...	...

	N
eminent domain	1
law	1
now	1
oil	1
pipeline	2
protect	1
stop	1
TransCanada	2
way	1

	Topics		
	1	2	3
eminent domain	.005	.080	.010
law	.008	.050	.011
now	.015	.010	.042
oil	.041	.003	.009
pipeline	2×.058	2×.012	2×.002
protect	.013	.000	.068
stop	.014	.001	.057
TransCanada	2×.077	2×.010	2×.011
way	.001	.002	.001

Topic	Sum	Normalize	Loading
1	.367	.367÷.781	.467
2	.190	.190÷.781	.243
3	.224	.224÷.781	.287
Sum:	0.781		1

4.3 Relating Findings Back to Methods

This section uses the approach taken in Section 6 as an example to discuss implications for future applications of Natural Language Processing in mixed-methods organizational studies. I preview some of the findings to show how topic modeling, after correcting for bias, can be used to compare discourse levels. A standard cross-level analysis highlights discrepancies in discourse across levels. Consider the unequivocal message at the macro level in the data. In a letter to President Obama, the Dalai Lama and Archbishop Desmond Tutu, along with seven other Nobel Peace Laureates, stated that "[y]our rejection of the [Keystone XL] pipeline provides a tremendous opportunity to begin transition away from our dependence on oil." However, in micro-level interactions, individuals either evaded or made vague statements about climate change. For example, the State Department released excerpts from public comments they received regarding the project's Environmental Impact Statement, including a statement from John Hansen, president of the Nebraska Farmers Union: "At a time when CO2 levels are at all-time recorded highs and climate change appears to be worsening, it does not make sense to expand this particularly environmentally destructive source of fossil fuel energy." During the public hearing of the Nebraska Legislature, however, Hansen strategically avoided the issue:

> SENATOR C.: Is Farmers Union against additional pipelines in Nebraska in the future?
> JOHN HANSEN: No.
> SENATOR C.: Is Farmers Union against further development of fossil fuels?
> JOHN HANSEN: Nope.
> SENATOR C.: Is Farmers Union against drilling for more oil in the United States?
> JOHN HANSEN: No.
> SENATOR C.: Is Farmers Union against coal-fired electrical generation?
> JOHN HANSEN: No.

My grounded qualitative approach brought me part of the way toward a meaningful comparison across analytic levels; the most salient observation was the conspicuous, actively

maintained silence on the topic of climate change at the local level. We can illustrate such evasions, as in the example above, but it is difficult to use qualitative examples for systematic evidence of silence and a lack of engagement. Topic models can provide such evidence.

4.3.1 Comparative Analysis Across Macro and Micro Level with Topic Modeling

In the literature review, I discussed the possibility of leveraging topic loadings to analyze discourse at any level—from aggregate discourse to a specific remark. Here, I used topic modeling and incorporated contextual documents into the corpus to conduct a comprehensive and vivid comparison across multiple levels of analysis. For example, Figure 4 juxtaposes the topic weights of major documents across levels of analysis. On the top left, I present the topic loadings for five documents representing the national discourse. These documents show that discussions about oil sands exploitation (Topic 13, in light green) dominate at the national level, while the topic of climate change (Topic 9, in medium purple) is also prevalent. This evidence is consistent with findings from my qualitative exploration, which suggested that while the national discourse centered on climate change, it remained somewhat superficial. The slogan "*dirty oil sands*" was often used instead of an in-depth discussion of climate change and local pollution. At the top right, I present topic loadings from the State Department's Environmental Impact Statements. These statements provide a thorough discussion of specific impacts and, hence, exhibit a notably higher prevalence of the climate change topic.[11] Finally, at the bottom left, I present the aggregated topic loadings of the eight public hearings of the Nebraska Legislature on the Keystone XL project. Topics of local relevance are more prevalent here, while the topics that dominated the discourse on the other two levels are noticeably less prevalent. The topics of *local*

[11] Interestingly, qualitative methods proved indispensable for accurately analyzing the State Department's documents. Although these documents include comprehensive discussions on climate impacts, they remain disconnected from the department's conclusions and decisions. Instead, the lengthy sections on climate impact were appended to the existing approach to 'check the box' and demonstrate that protesters' concerns were heard, but they did not result in a significant reevaluation of the overall findings. Quantity does not equate to quality, and any form of Natural Language Processing that relies on word frequency—such as topic modeling—will struggle with this disconnect.

environmental impacts (Topic 1, in deep purple), *legal questions* surrounding potential state regulations on oil pipeline (Topic 2, in red), and criticism of TransCanada's *land acquisition* process (Topic 8, in medium green) were all clearly more prevalent.

4.3.2 Analyzing Interactions at the Micro Level with Topic Loadings

Having demonstrated the discrepancy in the discourse between levels of analysis, I next analyzed how micro-level interactions contributed to the silence on the topics of climate change and oil sands exploitation. Utilizing the topic–word matrix β generated by my topic model, I calculated the topic loadings of individual remarks to analyze the effects of interactions on discourse. Figure 3 shows one exemplary exchange. Teri T., a veterinarian and generational farmer living along the proposed Keystone XL route, appealed to the Nebraska Legislature as a last resort to prevent the seemingly inevitable damage to her land. Following threats from TransCanada to use eminent domain to secure an easement through her property, she delivered an emotional appeal, emphasizing that the future of her family's multigenerational farm was at stake should the now-thin but essential layer of topsoil at her farm be removed for the construction of Keystone XL. She invoked the Dust Bowl of the 1930s, the effects of which, she said, were still visible on her farm nearly 80 years later. The topic model accurately captured these themes. Upon visual inspection of the topic loadings of her initial testimony (bar chart for Remark #613 in Figure 3), I find that Topic 12, Agriculture; Topic 10, (call for) Regulations; and Topic 1, Local Environmental Impacts are all present.

Figure 3: Analyzing Interactions with Topic Modeling

TERI T. (#613): … I'm not a scientist, but no one knows my land any better than I do. I don't have to have a college degree to tell you that on my land we cannot support the Keystone XL pipeline; it can't be done. We have listened to our forefathers tell how hard it has been. They went through the dirty '30s and the Dust Bowl days, we're still working to reclaim land that was damaged …

SENATOR L. (#614): Well done. Are there any questions for Ms. T.? Senator S..

SENATOR S. (#615): I have one. Thank you, ma'am, for coming in today. I was sitting here reading your testimony, your written testimony.

TERI T. (#616): Yes.

SENATOR S. (#617): And you talk a little bit about the eminent domain. And the last line that I read here on the first page, it talks about people in the state of Nebraska need protection from this type of tactic and that I feel LB1 would provide that protection. Can you explain that? Are you…I guess, can you explain that a little bit further?

TERI T. (#618): Explain why I feel that LB1 will give us protection from eminent domain? Or explain…

SENATOR S. (#619): Right.

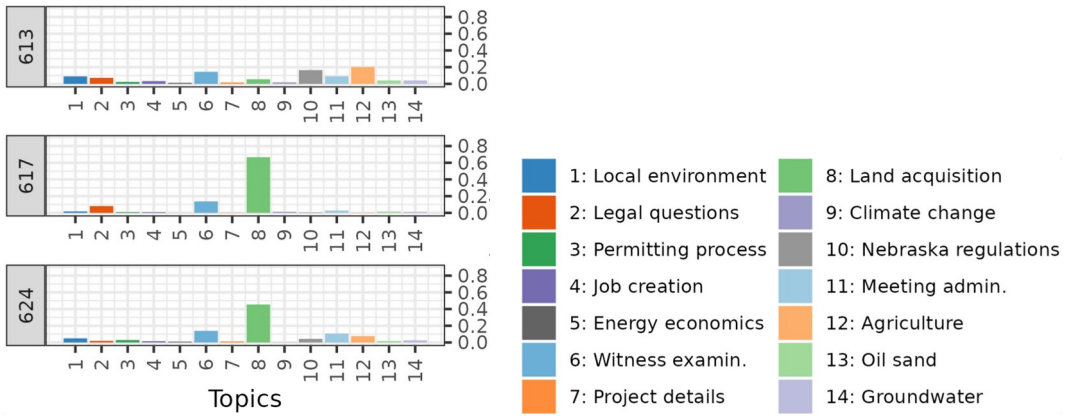
TERI T. (#620): …about the tactics?

SENATOR S. (#621): Well, a little bit of both.

TERI T. (#622): Okay.

SENATOR S. (#623): Please.

TERI T. (#624): My son, who testified before me, is much more of a conservative and much more of a gentleman. I'm a little bit hotter-headed. And he was very good with his remark about whether or not we have been intimidated…



a — Topic Loadings of Remarks with 50 or More Words, b — Legend of Topics in Bar Charts

We can then broaden our observational window and analyze the ensuing exchange. Qualitatively, I observe that in Remark #617, a follow-up question, Senator S. disregards her emotional plea, instead inquiring about her experience dealing with TransCanada. Accordingly, a visual inspection of the follow-up question shows a dominance of Topic 8, *land acquisition*. In response to the follow-up question, T. departs from her original talking points and elaborates on the pressure tactics employed during negotiations, including half-truths or lies, disregard for potential reclamation challenges, and threats of eminent domain use. The topic shift that I qualitatively observed was also evident in the topic loadings. While her initial testimony, #613, encompasses a range of issues, primarily Topic 12, *agriculture*, a visual inspection of the exchange reveals that her subsequent Remark #624 no longer engages with environmental issues or agricultural issues. Effectively, the topic of environmental impacts has been eliminated.

4.3.3 Systematic Bifocal Analysis

These results simply demonstrate what can be discerned from qualitative work, but the payoff comes from a systematic "bifocal" analysis. By computing what programmers might refer to as "on-the-fly" topic loadings (see Figure 2) we can make discourse comparisons when needed at any level of analysis. For example, I used the cross-level topic model to measure the frequency of macro-level topics raised in the Nebraska Legislature and then analyzed whether a fruitful interaction followed from introducing such a topic. To identify which topics were raised, I relied on the initial testimonies of the witnesses in the Nebraska Legislature. These initial testimonies were unrestricted. Any individual from Nebraska or out of state could join the legislative session and testify on any related topic. I classified every exchange between a witness and the senators based on the topic of the witness's initial testimony, which was identified by the highest topic loading.[12] My focus was the topics that dominated the macro level. I wanted to see how frequently these two topics were raised and the effects of raising them.

My initial qualitative analysis suggested that an interactive process between witnesses and state senators regulated the topics prevalent in the Nebraska discourse (as seen in the topic loadings in Figure 4). I identified a consistent bias against the two topics that dominated the macro discourse; see Figure 5. Witnesses could freely choose the topic of their initial testimony, but the senators controlled the discourse that followed. Any senator could then keep the discussion of a topic alive by asking follow-up questions because the chairman only calls the next witness when there are no more questions. The sentiment of the senators' responses is not effective evidence, because the senators maintain a friendly demeanor toward the witnesses. However, we can observe whether the senators asked follow-up questions. Importantly, we can observe instances in which senators quickly end the dialogue when a witness raises a particular

[12] I performed a robustness check with very similar results, wherein I classified a remark as having a specific topic if that topic loading was one standard deviation above the mean for the specific topic, and allowed for a remark to have multiple topics.

topic. Figure 5 presents the results of this bifocal analysis. Each panel shows a histogram of the witness examination length for the testimony that began on each specific topic as measured by the number of follow-up questions asked by the senators.[13] For instance, eight witnesses testified to the risk of groundwater pollution, with one individual—a faculty member at the University of Nebraska–Lincoln—receiving more than 30 follow-up questions.

For a topic to be prevalent, it must be raised repeatedly by witnesses and followed up on by the senators with questions. However, a topic can meet one of four fates: a) high prevalence, meaning a topic is frequently raised and followed up through senator questions; b) low prevalence, because a topic is frequently raised but not followed up through senator questions; c) low prevalence, because, despite frequent senator follow-ups, few people raise the topic; and d) low prevalence, because a topic is rarely raised and not followed up. Figure 5 suggests that the two topics of macro-level significance fall into category d). *Climate change* (Topic 9) is raised only once, and the conversation ends abruptly. While *oil sands* extraction (Topic 13) is raised more frequently, a meaningful dialogue never ensues. In contrast, *job creation* (Topic 4), and *groundwater pollution* (Topic 14) are examples of category c). These two topics are seldom raised, but provoke follow-up questions and generate a conversation. Generally, the local discourse is dominated by two topics that fall into category a), specifically, *local environmental impacts* (Topic 1), *legal questions* (Topic 2), and TransCanada's *land acquisition* process (Topic 8, in medium green), all frequently raised and often discussed at length.

My findings show an interaction order (Goffman, 1983) that shaped the low topic loadings for the two significant macro-level topics. If the senators had actively resisted these topics when they were raised, we would have found noticeable topic loadings. Instead, however, the senators subtly exited the conversations. Moreover, witnesses did not frequently discuss these

[13] I conducted a robustness check with very similar results, wherein I counted the number of words spoken after the initial testimony instead of the number of follow-up questions asked.

topics. As the testimony from John Hansen of the Nebraska Farmers Union demonstrated (as discussed above), that allowed them to avoid predictable resistance from the senators. A more encompassing picture of responses across topics (see Figure 5) suggests that a strategic choice of topics might allow participants to remain part of the conversation for a longer time, which could possibly optimize their chances of convincing senators to take action against Keystone XL. If the pipeline opponents cared more about *whether* the pipeline was prevented than *why* it was prevented, a winning strategy would involve settling on topics that the senators welcomed.

4.4 Discussion: Moving Between Macro and Micro

In this section, I developed a versatile approach to topic modeling, allowing more fluid movement between levels of analysis than prior works have displayed. However, I also want to caution against an overreliance on Natural Language Processing and underscore the critical role of human judgment in obtaining high-quality results. While Natural Language Processing can yield intriguing insights, it must be viewed with a critical eye to prevent the inadvertent replication of the existing biases and gaps present in the input data. The outputs from Natural Language Processing will reflect high-level trends and skip critical voices from the margins. Consequently, high-quality results cannot be derived from an analysis that is automated from start to finish. My approach rethinks the typical approach to Natural Language Processing, at least partially. Conventionally, researchers select an issue, identify a context, define an observation period, collect a *clearly demarcated* corpus, create a topic model, select the output of interest, and then conduct an analysis.

I innovate on that approach in three ways. First, I employ qualitative methods to obtain a grounded understanding, which guides my selection of the corpus. I engage in theoretical sampling and select the scope of my corpus to encompass the full range of key events and issues,

where previous research has predominantly depended on clearly delineated strains of discourse for sampling. The result is a range of discourses that combine reports and hearings. Hearings are particularly important because they give us access to the effects of interactions on discourse, which is not often included in discourse data (Leibel et al., 2018). Second, theoretical sampling permits more deliberate topic modeling. Given an awareness of key topics at the outset of the modeling process, we are not merely passive observers, but could proactively address a crucial oversight in the model by broadening the scope of our corpus. Third, in transitioning back from modeling to analysis, I did not conduct a formulaic analysis of the model results. Instead, I again moved between levels of analysis and deferred the calculation of topic loadings until I had determined on theoretical grounds where to employ them, on what level of analysis, and how. Next, I applied the precomputed topic loadings and utilized the "on the fly" algorithm to calculate additional aggregated topic loadings for Figure 4.

My results highlight the significance of tuning into both the language used in macro discourse and at the "coalface" (Barley, 2008). If I had only sampled the discourse at the macro level, I might have agreed with environmentalist McKibben's view of the Keystone XL pipeline's defeat as a landmark victory for the national climate movement. However, moving between levels of analysis requires us to reconcile McKibben's perspective with the sentiment of state senators, as expressed in the quote above. Through a mixed-methods approach that combined topic modeling and qualitative analysis, I was able to move between different levels of analysis and uncover gaps and contingencies. The interplay between micro and macro is remarkable, as, initially, there appeared to be little continuity in the discourse between the two levels. The macro-level discourse on climate change loomed over the participants at the micro level, but they actively set it aside to focus on topics of local relevance and to find common

ground. The decoupling of discourse was almost perfect, with only a few brief breakdowns or "oddities" (Steele, 2021) that initially piqued my interest and motivated me to move back and forth between the macro and micro levels.

It is somewhat ironic that while the national environmental movement cooperated with multiple like-minded communities—most notably, prominent climate scientists like NASA's James Hansen—and staged headline-grabbing protests in front of the White House, the decisive blow was delivered by a community whose stance on climate change was, at best, ambiguous. The victory in the demonstration study was only possible due to the on-the-ground actions of a specific set of actors, many of whom did not want to be part of the climate victory narrative. The role of Nebraska's farmers and landowners, with their nebulous stance on climate change, paints a picture of macro processes as highly contingent (Leibel et al., 2018). Incorporating the micro level into the picture tempers the expectations that the climate movement would attain similar victories moving forward, as expressed in McKibben's "victory speech." While there is a relationship between macro and micro levels, the modus operandi is likely to differ when moving from one level to the other. We can assume that at the micro level, topics of local relevance are likely to be favored, whereas topics from the macro level may be viewed as intrusive. This divergence suggests that during strategic maneuvers, where actors aim for discursive victories in a specific arena, they must navigate constraints on topics. My demonstration study provides a good example of this: I observed that the social structure enables a small set of actors in control of the interactions to steer the conversation away from the topics dominating the macro-level discourse.

5 QUALITATIVE APPROACH

> [T]his whole issue has created strange bedfellows: unions working with the Chamber of Commerce who would just as soon not have unions, conservative ranchers working with environmentalists. They're conservationists, but not necessarily environ . . . so it's created strange tensions, as we all know. Is the labor movement, itself, 100 percent back of the, you know, the jobs? And I really feel badly that the unemployment rate is 40 percent, I believe, in construction workers, and that's very alarming. But this whole cry of jobs . . . everything that you hear nowadays coming from politicians has the word "jobs" in it. That immediately grabs our emotions and at least makes us smile, to begin with. But do all the unions smile about the Keystone project?
>
> —State Senator H. on November 7, 2011.

This section marks my initial exploration of the discourse surrounding Keystone XL and the intriguing observation that the landmark climate victory did not hinge on the climate change topic, but instead on topics of local relevance. As this chapter employs an entirely qualitative approach, it serves as a useful point of comparison for the subsequent mixed-method approach. By qualitatively identifying and analyzing five topics—climate change, pipeline spill risks, the chemical contents of oil sands, job numbers, and eminent domain—I illustrate that efforts to control who can speak and what they can discuss are prevalent across topics. I identify four forms of pushback, as follows: (1) Actors are being *dismissed*. (2) Actors' contributions to discourse are challenged based on the assembly's *rules of the game* rather than content. (3) *Information dearth* restricts actors' ability to formulate persuasive arguments to support or oppose a topic. Last, (4) *countercoalitions* represent a more targeted response. By mobilizing support from parties with credibility in an area—deserved or undeserved—one can alter the dynamic of a debate. Instead of the topic and validity of subject positions, the relative credibility of actors becomes the focus.

The research for this section led to two key insights. First, the importance of interactions in the progression of discourse became apparent. The audience's response influences subsequent discourse as much as the contributions made by focal actors. Second, discussions concerning all five topics highlighted the dichotomy between reliability and validity. Validity refers to the degree to which knowledge can be utilized for understanding, prediction, and control. In contrast, reliability refers to the degree to which knowledge is public, stable, and shared (Rerup & Zbaracki, 2021). The minimal role of the climate change topic in the episode examined here implies that the audience's pre-existing knowledge of a topic—in other words, the reliability of knowledge on a topic in the context—is as important, if not more so, in the unfolding discourse as the quality of the knowledge available in the extant environment.

This chapter is organized as follows. First, I provide a concise overview of the qualitative approach employed in this chapter. Next, my findings are organized by topic. Sequentially, I discuss each topic and a selection of the notable mechanisms present (a summary of the topics and mechanisms is available in Table 6). Last, I present a succinct discussion and conclusion, both focused on the mechanisms identified in this section. An epilogue of the events in Nebraska is included in the Conclusion (Section 8.1).

5.1 Qualitative Methods

I began by developing a comprehensive timeline of the entire Keystone XL permitting process. To achieve this, I conducted a Factiva search for "Keystone XL" in conjunction with search terms such as "hearing" or "meeting." This timeline assisted me in pinpointing significant arenas where the pipeline encountered opposition. During this initial phase, Nebraska emerged as crucial. It was the sole locality along the pipeline route where environmental grassroots organizations, following an initial phase of indifference, succeeded in mobilizing substantial

opposition against the pipeline among both residents and the legislature. Before the next step, I refined my timeline using legislative documents and other forms of communication, primarily letters, exchanged among participants in the arena.

Subsequently, I coded the documents from the Nebraska arena, gathering the topics raised to disrupt the Keystone XL permitting process. This analysis resulted in 22 candidate topics. From these, I chose five for in-depth analysis—the ultimately successful problematizations and four other promising ones. I then reviewed my documents, recording all interactions surrounding the five topics, and coded each interaction for its institutional processes.

In the following subsections, I examine the interactions regarding the five topics raised by opponents of Keystone XL. I demonstrate how varying levels of resistance influenced the unfolding discourse and contributed to the establishment of the successful topic. First, I analyze four topics built around valid subject positions that were unsuccessful or only partially successful in challenging Keystone XL. While my data include more unsuccessful topics, I concentrate on the four with the highest likelihood of success: (1) concerns over the contribution to climate change; (2) pipeline safety concerns; (3) concerns about the hazardous contents of oil sands; and (4) the dispute over the number of jobs to be created. TransCanada, the company behind Keystone XL, effectively countered the first and the fourth topics. The second and third topics resulted in some alterations to the proposed Keystone XL pipeline route, making them arguably a partial success. However, neither TransCanada nor the Nebraska Legislature adopted the subject positions, nor did they halt the pipeline project. Last, for comparison, I analyze the single successful topic, eminent domain.

5.2 Qualitative Findings

While it may be tempting to chart relationships between topics, for instance, by tracing hierarchies or groups of concepts, the observed discourse proceeds in a piecemeal fashion. Multiple causes contribute to this compartmentalization. As a strategic choice, an environmental organization may leave aside the issue of climate change. Other actors may reject the problematization of pipeline spills but share concerns about the concentration of benzene in the pipeline's contents. Other connections may seem obvious, but only emerge over time in the data. For example, the pipeline route through the Nebraska Sandhills played a central role in the discourse. One would have expected the debate on Nebraska's jurisdiction over the route to trail the debate over the route, yet surprisingly, those two issues long constituted separate threads in the discourse.

The piecemeal approach is most apparent when actors selectively choose topics. This approach may not be comprehensive, but it offers valuable insights compared to the alternative, as represented by the project's Environmental Impact Assessment. In theory, the State Department's Environmental Impact Assessment should catalogue all impacts of the proposed pipeline project, including environmental, social, and economic aspects, and weigh them against each other. The result is a loosely connected amalgamation of carefully crafted paragraphs, each containing either 200 or 300 words, give or take five. Despite its imposing length of over 10,000 pages in its most extensive version (likely never entirely read), it still fails to analyze the project comprehensively and holistically. Ecosystem ecologist Dave Wedin from the University of Nebraska–Lincoln commented: "The actual literature review associated with the environmental impact statement was pretty thin." Furthermore, when national environmental organizations highlight Keystone XL's contribution to global climate change, the State Department also resorts

to a piecemeal approach, commissioning a separate report that could be added to the existing assessment within a set timeline. A memo was obtained through a Freedom of Information Act request that stated: "[A summary review of the literature analyzing greenhouse gas emissions associated with oil sands production] will likely be ready within weeks, which should allow the Department to make a decision on whether to issue a Supplemental or Final [Environmental Impact Statement] within the first quarter of the [sic] 2011." Environmental groups and the Environmental Protection Agency remain unimpressed:

> As [Environmental Protection Agency] and the State Department have discussed many times, [Environmental Protection Agency] recommends that the State Department improve the analysis of oil spill risks and alternative pipeline routes, provide additional analysis of potential impacts to communities along the pipeline route and adjacent to refineries and the associated environmental justice concerns, together with ways to mitigate those impacts, improve the discussion of lifecycle greenhouse gas emissions (GHGs) associated with oil sands crude, and improve the analysis of potential impacts to wetlands and migratory bird populations.

Given the fragmented nature of the Keystone XL discourse, my analysis from this point forward will focus on the observed discursive dynamics surrounding individual topics. To illustrate these dynamics, I organize my findings around each of the five topics (see Table 6 for an overview). The mechanisms I observe operate at four levels. (1) *Dismissal* occurs when a problem is either not heard at all or heard and then ignored. (2) The *rules of the game* operate contextually: An actor successfully enters the discourse but faces resistance unrelated to the problematization. (3) *Information dearth* occurs when institutional insiders create conditions that make it impossible to provide valid information supporting what could be a compelling case. (4) A *countercoalition* enacted by opponents undermines an otherwise compelling problematization. These four levels do not follow a temporal order, as supporters routinely engage in activities that pave the way for a new pipeline, often in an anticipatory manner. Dismissal is the only exception for which the temporal order matters. When used effectively, dismissing another actor can

eliminate the need for the other mechanisms. For instance, in my empirical context the climate change problematization is consistently dismissed immediately, making the other mechanisms for supporting the pipeline unnecessary. While I found evidence of nearly every mechanism in each of the five problematizations, for the sake of clarity, I only focus on the most striking examples in each of the unsuccessful problematizations. I then demonstrate how multiple mechanisms operate in the one successful problematization. In the postscript at the end of my thesis, I discuss why most pro-pipeline efforts should be considered successful (Section 8.1). The fate of Keystone XL ultimately depended on the relentless determination of a small group of landowners who successfully leveraged a single issue with local relevance—TransCanada's use or abuse of eminent domain—which the corporation could not effectively counter.

Table 6: Evidence for Mechanisms Across Topics

Problematization	**Dismissal**	**Rules of the game**	**Information dearth**	**Counter-coalition**
Unsuccessful problematizations				
Climate change	Very strong evidence	Not applicable	Not applicable	Not applicable
Contestation of job numbers	Some evidence	Strong evidence	Strong evidence	Strong evidence
Partially successful problematizations				
Pipeline spill risk	Strong evidence	Strong evidence	Some evidence	Strong evidence
Chemical contents of oil sands	Strong evidence	Some evidence	Very strong evidence	Evidence
Successful problematization				
Eminent domain	Some evidence	Strong evidence	Strong evidence	Strong evidence

5.2.1 Climate Change

On the national level, problematizations were common concerning Keystone XL's climate impact. The project conflicted with the climate change platform on which President Obama was elected. The decision not to proceed with Keystone XL was widely heralded as a "climate victory". Yet in the Nebraska Legislature, all attempts to problematize climate change appeared alien and unwelcome. Indeed, they were dismissed at an early stage. There were multiple ways of dismissing a problematization. Some days, there might not be enough time to hear from all the witnesses, so some would be skipped. Alternatively, testimonies could be disrupted by asking witnesses to wrap up when they approached the time limit for their testimonies. Senators could also be selective about whom they engaged on an issue and how they interacted. When an account was not relevant to the official or unofficial objectives of the hearing, the senators might simply disregard the testimony or change the topic. Finally, through their interactions with witnesses, senators could forestall subsequent testimony on a problematization.

Here I focus on examples from the conservative State Senator C., one of the opinion leaders in the Nebraska Legislature, who effectively led many of the efforts to dismiss climate change. In many ways, C. typified the Nebraska Legislature's culture. He was born in 1941 in Holdredge, Nebraska, a town of 4,000 people. He worked at an insurance company for 30 years before being elected senator of the 38th District. His top campaign donors included the Nebraska Association of Insurance & Financial Advisors and the Nebraska Cattlemen. C.'s agenda included getting the cost of "big government" under control by using his experience, leadership, common sense, integrity, and faith: "I don't shy away from telling people that I believe in the

Bible and the God who made it." However, C. also had a PhD from the University of Iowa, so he was not afraid of challenging subject positions.

C.'s exchange with John P. of the National Weather Service, a witness on the first day of the November 2011 special session, demonstrates how alien the issue of climate change is in the Nebraska Legislature. Throughout his testimony, P. had proven himself a well-prepared witness. At the very end, C. asked a question about the evolution of climate change before abruptly dropping the conversation:

> SENATOR C.: [W]hen we first started to hear about this it was called "global warming" and then it switched to "climate change." Is there a reason for that?
> JOHN P: I can't tell you the reason. I can tell you that in my . . . among my personal documents, I have a report by the National Academy of Sciences that was released in the late 1970s entitled "Understanding Climatic Change." So even back then among scientists they weren't referring to it so much as "global warming." I would call that a popularized term which gets an idea across succinctly, but it's an incomplete term.
> SENATOR C.: Okay. Thank you.
> SENATOR L.: Seeing no other questions, thank you very much. Appreciate your testimony.

Such exchanges were a common way for senators to end testimonies on problematizations with which they disagreed. Rather than engage the issue, a senator could raise it, only to end the exchange by dismissing the content of the testimony and giving the rest of the senators the chance to similarly disregard the testimony. Such silence speaks more loudly than any argument. In contrast, compare a later exchange between C. and landowner Tim T.:

> SENATOR C.: Are you—do you believe in global warming? (Laughter)
> TIM T.: I'm—honestly, I'm not sure. I'm not trying to be cute or . . . I'm not sure.
> SENATOR C.: I'm asking you these—I think your reservations and your resistance [against Keystone XL] is for pure reasons. And I appreciate that. Thank you.

In this exchange, C. ridiculed the concept of climate change and uses it as a sort of "character test." T.'s negative response led C. to believe that T.'s resistance to Keystone XL is

for “pure reasons” and should not be disregarded. The exchange signaled to other witnesses that the chances of successfully problematizing climate change in the Nebraska Legislature were slim. After this exchange, there were only two more attempts to problematize climate change—one on each of the following days—none of which led to any further exchange. The problematization was successfully dismissed.

5.2.2 Pipeline Spill Risk

The risk of an oil spill in the Sandhills was another significant problematization of the Keystone XL pipeline in Nebraska. TransCanada’s route for the pipeline went directly through the Nebraska Sandhills, a unique wetland ecosystem comprising sand dunes stabilized by prairie grasses. The Sandhills has numerous small ponds and lakes, as well as very shallow groundwater. Most significantly, a part of the Ogallala Aquifer—the source of drinking water for 30% of Americans and 85% of Nebraskans—sits under the Sandhills. The concerns about the route turned on robust research on hydrology that faculty at the University of Nebraska–Lincoln knew well, though the unique hydrology of the Sand Hills meant that the claims were still untested.

Two witnesses were notable proponents of the spill risk problematization. One was Dr. John Stansbury, a faculty member at University of Nebraska–Lincoln, who focuses on water resource engineering. In two July 2011 reports, Stansbury warned that the Keystone XL would spill more frequently and that the worst-case spill would be more serious than predicted in the TransCanada risk assessment included in the official Draft Environmental Impact Statement of the State Department. The second was Anthony Swift, an attorney with the Natural Resource Defense Committee in Washington. Swift had followed closely the unsuccessful cleanup efforts following the July 2010 Kalamazoo River oil spill, one of the largest spills in US history and the

first significant oil spill involving diluted bitumen produced from the Canadian oil sands. The Kalamazoo River oil spill highlighted that a diluted bitumen spill into an aquatic environment is exceptionally difficult to clean up, as the heavy and light parts of the mixture separate, float on, and sink in the water, respectively.

The counters to the problematization of pipeline safety focused not on the content of the argument, but its context. In any public arena, there are rules and procedures in place that institutional insiders can exploit. Informal rules may make the interactions around a topic sufficiently opaque that a sincere actor can seem insincere in the context. C., for instance, traded on those informal rules when he wanted to determine whether T. opposed climate change for pure reasons. Formal rules can also be raised, as when someone does not follow the proper procedures for testimonies.

Both forms of context were used to deal with pipeline risks. First, attempts to draft regulations were met with an appeal to formal rules of jurisdiction and pre-emption. This early change of topic made the issue of spill risks disappear from the legislative discourse. In the hearing on Feb. 17, 2010, regarding LB 755—which tangentially touched on pipeline spills—Lee Hamann of the McGrath North Law Firm testified on behalf of TransCanada against the bill. Rather than attacking the problematization and the bill on the merit of arguments, Hamann chose to shift the arena of consideration from the Nebraska Legislature to the federal court system. He suggested that the bill would be pre-empted by federal law and could be challenged in court. Whether he was right is not the central point. By introducing the question of jurisdiction, he replaced the discourse on the merits of the problem with a question about the appropriate arena for considering the issue.

The question of the appropriate arena continued to echo throughout subsequent contestations. The Nebraska legislators subsequently moved from spill risks to spill effects and their cleanup. To help address concerns about a pipeline spill in the Sand Hills, they invited three faculty members from the University of Nebraska–Lincoln to a fact-finding session on December 1, 2010. After the University of Nebraska–Lincoln faculty testified that pipeline spills in certain areas of the Nebraska Sandhills could lead to long-term pollution, the Environmental Resources Committee of the Nebraska Legislature drafted the Oil Pipeline Reclamation Act to address the issue of cleanup and reclamation following pipeline construction or spills. The bill successfully left the committee. However, in the floor debate on May 19, 2011, the Nebraska senators adopted an amendment that removed all language about pipeline spills. During the debate on the bill, Chairperson L. skirted the debate over spill risks. His arguments mirrored Hamann's claims about jurisdiction one year earlier. L. explained that the State of Nebraska is at the bottom of the hierarchy and pipeline safety issues were addressed by the Pipeline Hazardous Materials Safety Administration.

Following Stansbury's July 2011 special reports, another institutional defense targeted the motivations for problematizing pipeline spill risks. Swift and Stansbury came under suspicion as outsiders trying to sabotage Keystone XL. Rather than focusing on the content of their claims, the senators questioned the motives behind their opposition. For example, during the public hearing on November 7, both Stansbury and Swift were challenged about their motives. Friends of the Earth, a Washington-based environmental organization, had helped Stansbury distribute his report. Stansbury claimed that he had no further connection to the group, but Senator C. voiced doubts: "So you let a group distribute your report, and you don't know anything about them?" Swift came under fire for testifying in a neutral capacity despite being a

member of the Natural Resource Defense Committee, which was part of the anti-Keystone XL coalition. The senators again probed for potentially impure motives, which highlights the range of contextual factors that could be considered problematic:

> SENATOR M.: [H]ow did you come to be here today? Were you asked to be here?
> ANTHONY S.: [The Natural Resource Defense Committee] is supporting my travel to here . . .
> SENATOR M.: And did any other organization or advocacy group ask you to be here?
> ANTHONY S.: I have been in contact with Bold Nebraska, it is true. . . .
> SENATOR C.: . . . Is [the Natural Resource Defense Committee] a federal agency? . . . [H]ow is it funded?
> ANTHONY S.: Through donations.
> SENATOR C.: Through donations. Would [the Natural Resource Defense Committee] policy and so forth and objectives, would it be accurate to say that [the Natural Resource Defense Committee] is against pipelines? . . . Is [the Natural Resource Defense Committee] against drilling for oil in the United States?
> ANTHONY S.: The [the Natural Resource Defense Committee] does not have a unilateral opposition to drilling for oil in the United States, no.
> SENATOR C.: So in answer to that question you can't just answer yes or no?
> [A few minutes later]
> SENATOR C.: So, it's safe to say that [the Natural Resource Defense Committee is] interested in the United States becoming more energy independent through wind and solar. . . . Does [the Natural Resource Defense Committee] oppose coal-fired generation for electricity?
> ANTHONY S.: I don't know that I can speak to the institution's position on coal-fired generation. . . .
> SENATOR C.: Well, you're having some difficulty telling me what their position is and yet you were contacted to come out here and really testify against this project. . . .
> SENATOR S.: It sounds like you . . . antidevelopment of those types of [fossil fuel] reserves. All right. Let me ask you, tell me your credentials again. Tell me your background, your education, and your experiences that lead up to your testifying here.

5.2.3 Chemical Contents of Oil Sands

During the special session of the Nebraska Legislature on Keystone XL, a potential new problematization emerged. Susan Seacrest, founder of the Groundwater Foundation, mentioned the chemical benzene during her testimony on November 7, 2011: "A teaspoon of refined

gasoline, which contains benzene, would render . . . any water from that swimming pool, three feet deep, the size of Memorial Stadium [in Lincoln, Nebraska], unfit for human consumption." Although the senators had already abandoned the problematization of pipeline safety, they were intrigued by the risks associated with the benzene content of the diluted bitumen that the Keystone XL pipeline would carry. The senators kept asking other witnesses about diluted bitumen and benzene. Their inquiry reveals how information dearth can pre-empt a problematization, even if the participants in a social setting are otherwise open to it. Institutional insiders control much of the information relating to an institution. By withholding the relevant information, institutional insiders can prevent environmental activists and scientists from mobilizing support against the institution.

In the debate concerning benzene, the issue turned on competing claims in competing arenas. A few hours after Seacrest's testimony, Senator C. pressed TransCanada's Robert Jones on benzene. Jones, a TransCanada vice cresident, alleged that benzene was not a concern since the benzene content of crude is not soluble. At the end of the day, Senator H. returned to the topic with Professor Wayne Woldt a faculty member at the University of Nebraska–Lincoln who specializes in groundwater engineering:

> SENATOR H.: Now TransCanada really sort of pooh-poohed the idea of benzene, that benzene could enter groundwater. Is benzene a problem in groundwater or?
> Dr. WOLDT: Well, I don't know what the constituents are in the fluid that TransCanada is talking about pumping, so I don't know if benzene is in there if that would be a problem or not.

Woldt struggled to craft an argument commensurate with his scholarly standards because TransCanada would not share information on the composition of diluted bitumen with him or his colleagues:

> Unfortunately, what I found is, in terms of the tar sand oil concept, I was having a little bit of a tougher time really finding information about that and what that

> means and what it might be like in terms of its consistency, its makeup. And that was confirmed, essentially, and the report mentions that it's a proprietary mixture. So it's hard to tell what might happen, and some of that research and their development I'm sure is held pretty tight also for competitive reasons.

Without information about the composition of the pipeline's contents, Woldt could not make a definitive statement on the risks associated with benzene. Likewise, Stansbury, who testified after him, did not provide a definitive statement. Instead, Stansbury insisted that more research was needed to answer this and other open questions. Therefore, the exchange set the claims of Jones—a TransCanada executive who had given a definitive statement—against those of Woldt and Stansbury, who would not take a stance when they lacked basic information. Meanwhile, some senators were clear that they would still support Keystone XL, even if there was a dearth of information. Senator C. remarked, "If we sit back until everything is answered, we'll never do anything."

5.2.4 Jobs

One of the most significant arguments in favor of the Keystone XL project in Nebraska was its economic impact. Nebraska ranks 43rd in the United States in population density. With only approximately 25 people per square mile or 10 people per square kilometer, Nebraska's population density is similar to that of Russia. Agriculture accounts for approximately 15% of the economy, compared to about 1% for the whole country. On September 14, 2010, TransCanada announced that it had signed a Project Labor Agreement for Keystone XL with five major unions and the American Federation of Labor and Congress of Industrial Organizations. TransCanada would hire only union members to meet its skilled labor needs and negotiate conditions directly with unions. According to its own estimates, Keystone XL would create 13,000 jobs across the country, $6.5 billion in income, and $20 billion in spending. In March 2011, TransCanada revised its estimate up and stated that Keystone XL would generate

approximately 20,000 jobs. Industry organizations such as the Consumer Energy Alliance even estimated that Keystone XL would create more than 120,000 jobs. The Project Labor Agreement spawned a powerful countercoalition. Countercoalitions can complement the abilities of institutional insiders to engage in institutional defense in specific arenas by lending or renting out their credibility or resources.

After TransCanada signed the Project Labor Agreement, labor unions began advertising Keystone XL in public in Nebraska. The labor unions helped TransCanada establish the credibility of its jobs claims in three arenas. Union members—typically the business managers of local chapters—would attend public hearings of the State Department and the Nebraska Legislature. In these arenas, the presence of union members even proved to be a counterforce to against environmental grassroots. The two opposing groups, for instance, dominated a particularly contentious State Department hearing in Lincoln, Nebraska, on September 27, 2011. The *Lincoln Journal Star* noted: "If U.S. State Department officials came to Lincoln [. . .] expecting advice that would make their decision on [Keystone XL] easy, they were destined to leave town disappointed." Local union managers also engaged in media outreach. One union business manager—Ron Kaminski of LIUNA Local 1140 which covers Nebraska and Southwest Iowa—was quoted 11 times on Keystone XL in opposition to environmental protests between December 2, 2010, and November 8, 2011.

Finally, Kaminski acted as a force multiplier for the fossil fuel industry in reaching out to the Nebraska public. Together with Joseph Kohaut, a registered TransCanada lobbyist, and Beth Jensen, a TransCanada employee, Kaminski founded Nebraskans for Jobs and Energy Independence. The organization actively promoted Keystone XL until 2018. Between October 6, 2010, and June 30, 2011, it spent $120,000 on robocalls and direct mail marketing to garner

support from Nebraskans for Keystone XL. In collaboration with the Consumer Energy Alliance, Nebraskans for Jobs and Energy Independence gathered 31,939 comments in support of Keystone XL from Nebraskans that they submitted to the State Department. The comments were collected in a straightforward manner via phone: "Please Press 1 now to authorize us to send a letter to Secretary of State Hillary Clinton in support of the Keystone XL Pipeline." In December 2011—when the conflict in Nebraska briefly seemed fully settled—Nebraskans for Jobs and Energy Independence finally became a member of the Consumer Energy Alliance. Meanwhile, Kaminski continued to describe himself in the public discourse as a LIUNA business manager, without disclosing his role at the astroturf organization.

The countercoalition between TransCanada and the labor unions became unexpectedly important in September 2011, when a report by Cornell University's Industrial Relations School (ILR) cast doubt on TransCanada's job numbers. Quoting the numbers provided by TransCanada for the State Department's Environmental Impact Assessment, the ILR estimated that Keystone XL would create 2,500–4,650 jobs over its two-year construction period and about 50 permanent jobs. On November 8, 2011, Dr. Skinner of the ILR traveled to Nebraska to testify on the school's report. In Nebraska, Skinner had a hard time establishing the credibility of the ILR's claims. The countercoalition with the labor unions had provided TransCanada with a credibility advantage regarding its job estimates, as Skinner would soon discover:

> SENATOR S.: Tell me a little bit about the unions that you say you've been in contact with that are in opposition to this project. [. . .]
> LARA SKINNER: Yes. There's two transit unions, the Transport Workers Union and the Amalgamated Transit Union, and the other unions are the Domestic Workers United and the National Domestic Workers Alliance.
> SENATOR S.: Okay. And are any of those representatives that you've spoken with, are they located here in Nebraska?
> LARA SKINNER: Those four organizations, to the best of my knowledge, all have members in the states that the pipeline route runs through. But I would want to check on that before saying that confidently.

> SENATOR S.: Because we've had lengthy testimonies and contact and information provided to us by a number of the labor organizations in Nebraska that seem quite knowledgeable of what impact this pipeline is going to have on their union members in Nebraska. And I'm struggling here not . . . I mean, I welcome you to come and testify and I appreciate your testimony. But these are folks, these are jobs that are located in Nebraska that are talking about firsthand the impact this pipeline is going to have in Nebraska. And I've seen a lot of numbers thrown around and I'm just . . . I'm baffled, quite frankly, because it's so far apart from what we've heard in testimony over the last day.

The fate of the ILR's problematization of TransCanada's job claims was not determined by the quality of their data or their report, as Skinner would soon discover. Rather, her position in the social field would be the determining factor. On the same day, in a meeting of the Judicial Committee, Senator L. finally broke down the discourse into one simple question: "Why should we believe you instead of the representations of TransCanada?" Unfortunately for Skinner, in the Nebraska context, her Cornell affiliation was not sufficient to sway the senators. While the countercoalition with labor unions had lent credibility to TransCanada's job claims, Skinner's affiliation was met with skepticism. Senator H. remarked, "I had to go do some research, too, on the ILR because I'd never heard of it before. Is . . . are you truly pro-labor or are you socialist or what?"

5.2.5 Eminent Domain

TransCanada's original timeline called for the construction of Keystone XL to begin in 2011 and conclude within two years. To stay within this timeline, Keystone XL began acquiring the rights of way along the pipeline route in 2009. By February 2011, TransCanada had yet to reach an agreement with almost a quarter of the landowners in Nebraska, the highest rate in any state along the route. Fortunately for TransCanada, in Nebraska, the company could use eminent domain to obtain the necessary easements. To use eminent domain, TransCanada would have to obtain all the relevant permits—but because there is no permitting process in place in Nebraska

for major oil pipelines, TransCanada argued that they could use eminent domain by default. To employ eminent domain, TransCanada would have to announce its intention to file eminent domain 30 days in advance. Thus, in August 2010, TransCanada sent letters to holdouts: "This letter is Keystone's final offer, and it will remain open for one month after the date of this letter or until you reject it. [. . .] [W]e will be forced to invoke the power of eminent domain and will initiate condemnation proceedings against this property promptly after the expiration of this one month period."

Following TransCanada's announcement, landowners began reaching out to the Nebraska senators to express their shock at TransCanada's sudden decision to upend negotiations. Landowners also flocked to the Keystone XL hearings of the Nebraska Legislature on December 1, 2010, and February 9, 2011, to air their grievances about the letter and TransCanada's conduct more generally. TransCanada had violated the Nebraskans' expectation of good conduct, as landowner Linda B. explained:

> As a rural landowner, as president of Holt/Rock County Farmers Union and a lifelong Nebraskan, I'm appalled at the heavy-handed tactics TransCanada, a foreign oil company, is inflicting on my friends and neighbors. My livelihood, my way of life, as well as my neighbors are being threatened. Because this is my home, I cannot just sit aside and let this go on. I can't watch good, hardworking Nebraskans be taken advantage of again.

Despite the pressure from the landowners, it took until November 17, 2011—almost a year after the landowners first aired their grievances—for the Nebraska Legislature to finally address concerns over TransCanada's use of eminent domain with a bill: the Major Oil Pipeline Siting Act. When the Nebraska Legislature first discussed Keystone XL on February 17, 2010, Lee Hamann of McGrath North represented TransCanada. Hamann framed any attempt by the Nebraska Legislature to limit TransCanada's use of eminent domain now as problematic for

three reasons. The first reason particularly dominated the public discourse until the special session in November 2011:

> The first [reason] is the pre-emption by federal law. The second is that it imposes impermissible tax and undue burdensome . . . unduly burdensome restrictions on interstate commerce. The third is that it's prohibitive special legislation.

The senators received a critical piece of information regarding the state's role in the permitting process in the hearing on December 1, 2010. Among the material for the meeting was a legal analysis that Lee R. Terry, member of the House of Representatives for Nebraska's 2nd District, had requested from the Congressional Research Service. The memo states that the federal government oversees pipeline safety, while states have jurisdiction over the "siting" (i.e., determining the exact route) of oil pipelines and the use of eminent domain. While the memo was entered into the record as an exhibit, nobody seems to have recognized its significance, as it was not further discussed during the session.

In March 2011, the memo landed in the hands of Ken Winston of the Nebraska Sierra Club. To draw attention to the memo, Winston changed the arena—he organized a joint press event of 10 Nebraska grassroots organizations on the memo. The press event drew significant attention from the Nebraska media. Yet, the press coverage on the memo still did not compel the senators to study the memo or act. The memo was eventually raised in the Nebraska Legislature on May 19, 2011—unsuccessfully—by Senator H., who frequently acted as an intermediary between liberal activists and the more conservative Nebraska Legislature. H. suggested that the Nebraska senators dismissed the Congressional Research Service memo because they did not know what the Congressional Research Service *was*. Ironically, H.'s speech was interrupted before he could finish his thoughts:

> SENATOR H.: I'll continue with this. From the Congressional Research Service, a letter of September 20, 2010, to Lee Terry, and in one of the sections on this is

> oil pipeline siting authority. Now some people will say, oh gee, it's just a Research Service, but we have many other indications the Research Service is nonpartisan. In Congress, it's highly regarded. And on oil pipeline siting authority it says: In the absence of federal government siting authority, state laws establish the primary siting authority for oil pipelines, including interstate oil pipelines. Now I'm not going to beat us across the back or try to criticize anybody for not being there sooner, but we have this authority if we take it. And if you open the [U.S.] constitution, this great little document, Article X, which says . . .
> SENATOR C.: Time.
> Sen. H.: Thank you.

All subsequent attempts to draw attention to the memo were dismissed until October 2010, when former Nebraska Governor Heineman called a special session of the Nebraska Legislature on Keystone XL. Until October 2010, the debate on TransCanada's use of eminent domain continued, detached from the discourse on the memo. The State Department was expected to make a decision on the permit by the end of the year, as the department announced in a press release on March 15, 2011. After the regular session of the Nebraska Legislature ended on May 26 without any legislative action on TransCanada's use of eminent domain in Nebraska, H. and four other senators decided to lobby for a special session of the Nebraska Legislature. The senators raised the issue with Heineman, who held the power to call a special session. Having taken office in 2005, Heineman was an expressed supporter of Keystone XL but a critic of the route, which he first expressed explicitly in an August 31, 2011, letter to then-Secretary of State Clinton: "I want to emphasize that I am not opposed to pipelines. [. . .] I am opposed to the proposed Keystone XL Pipeline route because it is directly over the Ogallala Aquifer." In interviews, he deferred to formal rules rather than entering into a conversation on Keystone XL:

> Maybe that route needs to change or maybe they don't even go forward with it. But that is where the decision is—it is a federal regulatory issue and there's nothing we can do at the state level, at this time, to prevent that.

Heineman pointed to the same formal rules in September 2011 when he was asked to call a special session:

> Are they really suggesting that the state of Nebraska can pre-empt the president of the United States when he says it's in the national interest? Are they suggesting that we can ignore the federal interstate commerce clause, that state law can circumvent federal law? If we can, please send that to me. I'll be glad to take full responsibility and accountability for these issues, if I can totally ignore what the federal government's doing.

Two events finally broke Heineman's resistance to the rules of the game. First, Nebraska newspapers published a barrage of letters from Nebraskans that criticized the governor personally for his inaction—13 between August 8 and October 16 just in the Nebraska Lincoln Star. Second, Assistant Secretary of State Elisabeth Jones personally met Heineman during a visit to the state. The two continued to exchange letters in which Jones emphasized that the Nebraska Legislature could take action regarding TransCanada's use of eminent domain that would comply with the formal rules. On October 23, 2011, Heineman finally announced a special session but still left open whether he would support an eminent domain reform.

The discourse on jurisdiction continued on the first day of the special session. Alan Peterson, a lawyer representing the Nebraska Sierra Club, finally answered many of the questions of the senators regarding the issue. As a member of an environmental grassroots organization, Peterson worked outside the norm. The Nebraska senators knew him for his leading role in a lawsuit against the State of Nebraska over a denied permit for a nuclear waste facility. The lawsuit ended up costing Nebraska $150 million in legal costs. Peterson was later challenged on the ground of informal rules; however, unlike Winston and Stansbury, he escaped unscathed:

> SENATOR C.: Okay. What is Sierra Club's stance on fossil fuels versus renewables?
> ALAN PETERSON: I don't know.

AUDIENCE: Oh, oh, oh. (Laughter)
SENATOR C.: I'm done.

Resisting TransCanada's attempts to obtain the necessary easements in Nebraska was rendered difficult by a *dearth of information*. During the hearings of the Nebraska Legislature, many of them described their fruitless attempts to access information:

> SENATOR D.: Did you feel like you had any other place to go to, to maybe ask questions or get some unbiased or objective information or answers to questions you may have had?
> TERI T.: No, I don't think we did. We visited with other landowners. We did . . . we visited a lot with our local resource district, the Lower Niobrara Resources District. There aren't a lot of people you can talk to about what this is going to encompass and what it's going to affect, and it's going to affect each person differently. So to make a long answer short, no.

The landowners also described the psychological effects of the combined lack of information and psychological pressure from letters threatening eminent domain. These landowners described how they or their neighbors reluctantly signed the agreement against their better judgement: "You cannot fight big business" (landowner Susan D., Nov. 7, 2011). Furthermore, TransCanada required those entering into agreements to sign nondisclosure agreements. These nondisclosure agreements prevented new information from emerging and maintained the dearth of information. As a measure of last resort, TransCanada's contractors would lie to the landowners who had not signed their easements yet, as explained by landowner Susan L.:

> [Our neighbor] stated that they were still negotiating the survey of some of the ground and had not signed all the papers yet. [Our neighbor] also stated that they were told long time ago by [a friend] we had signed and settled our land contract. I told her that information was a lie. When I got into the van I asked [my friend] about our [two of our neighbors], if they had signed yet, and she stated they had.

Despite pressure from landowners, at the time of the special session of the Nebraska Legislature in November 2011, there were still holdouts who had not signed easements.

TransCanada had acquired only 90% of the necessary easements. The coalition of landowners and environmental grassroots organizations added two lawyers—the aforementioned Alan Peterson of the Nebraska Sierra Club and David A. Domina of the Domina Law Group. Domina had been hired—at a cost of $4,500, all raised from donations—to write a "green paper" arguing that Nebraska had the right to regulate Keystone XL. At the core of the landowner coalition was a small group intent on resisting Keystone XL until the end—regardless of the outcome of the special session. Randy Thompson and 45 other landowners vowed to wage "judicial trench warfare" and make their "last stand at the Thompson Ranch" (Olson, 2011). With a coalition in place, the landowners turned to recruiting senators to pass the bill. Teri T. stated the following:

> The fact that they have used this eminent domain threat, as I pointed out in my statement, from the first day that I saw maps that showed where this pipeline was going to cross our property, the word *eminent domain* was thrown out there. It shadowed us. It was—and I think my wording was, I think it was a tactical maneuver on TransCanada's part to get us to sign easements. . . . They didn't know that [our family members] were quite as bullheaded as we are, because we're very bullheaded. And I certainly hope you senators are just as bullheaded as we are, when you're threatened with lawsuits and things, because you can stand up to them. We have.

Naturally, TransCanada built its own coalition in response. For the special session, it now brought three lawyers, and in the financial quarter leading up to the special session, TransCanada spent two orders of magnitude more on lawyers: $500,000 to prepare for the special session, including up to $350,000 in legal costs. The battle turned on two issues: whether Nebraska had authority over pipeline routing and whether TransCanada could sue the legislators. The latter was a great cause for concern among the senators. Consequently, in his interactions with the Sierra Club's lawyer Peterson, Senator H. turned immediately to this topic: "At one point, it was put out that state senators could be sued for damages." Peterson believed that the senators would prevail, but he acknowledged the stakes: "TransCanada has 1,800 lawyers or so, as near as I can

tell. They'll present [their case] very well, I'm sure." Senator Ken S.'s poignant summary of the problem: "[Y]ou may believe that we could prevail in a lawsuit if that would happen with this bill in place. But that still means we have to pay for a lawsuit to defend ourselves." TransCanada's lawyer, David Carpenter was confident, saying, "In my judgment, this is not even a close case." Moreover, he presented himself as a powerful ally for TransCanada:

> I've handled many, many, many cases in which we've raised federal pre-emption and constitutional federal commerce clause challenges to state statutes that affect, you know, those firms and their interstate operations. I thought, off the top of my head, of 10 such cases. I listed them in the exhibit to my testimony. Seven of those I personally argued. I think six of them were in the U.S. Supreme Court. Nine were cases in which . . . they all upheld federal pre-emption challenges based on statutes issued under the commerce clause.

Unsurprisingly, TransCanada prevailed in the Nebraska Legislature. Although Senator D. —the driving force of the new Major Oil Pipeline Siting Act—expressed confidently on the first day of the special session that Nebraska had the right to legislate TransCanada's use of eminent domain: "LB1 creates an effective and constitutional legislation that provides Nebraska the routing authority which the federal government has reserved to individual states." However, toward the end of the special session on November 15, 2011, all sides agreed to another compromise. TransCanada would voluntarily reroute the pipeline to avoid most of the Sandhills and the aquifer. In exchange, Keystone XL would be excepted from the new Oil Pipeline Siting Act, and the State of Nebraska would pay for a study to find a suitable new route at an estimated cost of $2 million. The vote on the revised bill was unanimous. Robert Jones, TransCanada's vice president, stated that TransCanada was happy with the revised bill: "We are pleased that AM37 calls for the work to be done in an effective and timely manner." Yet again, TransCanada had succeeded in pushing aside a problematization.

5.3 Conclusion

This section introduces a new perspective on discourse analysis. I *do provide* an overview of four significant themes within the Keystone XL discourse: climate change, spill risk, benzene content, job creation, and TransCanada's use of eminent domain. I *also conduct* a qualitative analysis of each topic's trajectory and the challenges actors face when introducing each topic. I identify four mechanisms: actor dismissal, pushback based on the rules of the game, information asymmetry, and counter coalitions. Due to these social-behavioral mechanisms, the local discourse hinges less on the strength of the argument and more on the interactions that transpire.

By focusing on interactions, this section underscores a crucial aspect of discourse. The content of discourse is undeniably important, as an actor can only influence overarching assumptions and dominant practices with a compelling argument (e.g., Maguire & Hardy, 2009). However, the strength of an argument is a necessary but not sufficient condition (and perhaps not even that). The presence of the four social-behavioral mechanisms across topics suggests that even a compelling argument is unlikely to spontaneously lead to action. Instead, an argument needs to be "shepherded" until it can exert its influence. The process through which arguments shape the world depends not only on contents. Or rather, the process depends on contents but not the merit of the argument (cf. Harmon et al., 2015). The question becomes, *what is the appropriate topic for the occasion, and who is in a position to introduce it?* When viewing the world through this structurational lens, the "hypermuscular" Suddaby et al. (2017) actor—who single-handedly changes the world by introducing the right topic and challenging existing ideas —no longer seems larger than life, but rather a product of their time. Keeping these contingencies in mind, it is less surprising that in Nebraska, the pivotal topic was not climate change, but TransCanada's use of eminent domain.

Notably, the episode in Nebraska involves members of the in-group, including state senators, farmers, and landowners, and revolves around topics that *they deem* appropriate for discussion (cf. March & Olsen, 2011): eminent domain and environmental impacts. TransCanada's threat of using eminent domain to obtain rights of way through sensitive but profitable farm land put the company into direct conflict with Nebraskans' personal interests. Consider this quote by Nebraska resident Dan K.: "I am a third generation landowner and someday I wish to pass that legacy on to my children." TransCanada encountered an unexpected variation of mainstream future generations-oriented environmentalism (think "Seventh Generation"; Clarkson, Morrissette, & Régallet, 1992) that was intertwined with conservative family, property rights, and agricultural values.

Meanwhile, the state senators did not explicitly reject "out-group topics"—or indeed, talk them out. Instead, these topics disappeared from the discourse due to circumstantial reasons. The topic of climate change simply disappeared because no one actively maintained a conversation on the issue. The assembly also did not reach a conclusive stance on the topic of job creation, leaving it at a point where two conflicting positions were supported by two opposing coalitions. On the issue of the carcinogenic benzene, the debate ended in a state of uncertainty about "the science," while the discussion on oil spill risks was filled with questions about individual motives. Due to these social-behavioral processes, the local discourse depends more on the participants, their local social order (Goffman, 1983), and their interactions than on contents.

Unfortunately, it is difficult to discern the overall pattern behind topic selection and retention using only qualitative methods. In the following section, I use a novel mixed-method approach to address this limitation and reveal the unseen interactive processes that determine

what we observe and what topics disappear before our analysis of discourse content even really begins.

6 TOPIC MODELING–BASED MIXED-METHODS APPROACH

> *Um, we won. You won [. . .] Our movement spoke loudly about climate change and the President responded. There have been few even partial victories about global warming in recent years so that makes this an important day.*
>
> —Gandhi Peace Award Winner Bill McKibben, founder of 350.org, on the 2011 decision to delay a Keystone XL permit determination and commission a new environmental impact assessment.

This section examines Keystone XL as an ambivalent case study, as I will lay out below (see also Section 1 for the ideational context). On the one hand, Keystone XL has been lauded as a rare climate victory. In its early phase, Keystone XL appeared to be a foregone conclusion, another inevitable piece of fossil fuel infrastructure. Its successful construction would have been further evidence that, for all the rhetoric about sustainability and climate action, a general unwillingness prevails to limit the consumption of fossil fuels.[14] On the other hand, the Keystone XL opposition turned the battle around in the 11th hour, shortly before the project was due to be approved (see Table 3). However, the most notable attribute of the discourse on Keystone XL for this section is the curious status of the climate change topic in the debate. As already indicated in Section 4, my case study is unique because I observe a clear split in the discourse, where the topic of climate change dominates the discourse on the national level but is virtually absent from the discourse on the local level.

Though the climate *crisis* (e.g., Hansen et al., 2013) is a new phenomenon, the problem of gaps between discourse and reality is an old one (e.g., Zbaracki, 1998). Existing theory, particularly concerning institutions, is a good starting point for explaining anthropogenic climate change (Hoffman, Singh, & Prakash, 2015). In Section 2, I have already introduced four potential explanations for the discourse–reality gaps. (1) A disconnect can emerge during the

[14] Technically, since Keystone XL would have facilitated additional consumption *on top of* rather than to meet existing demand, its completion would have indicated an unwillingness even to rein in the *growth* of consumption (Erickson & Lazarus, 2014).

translation (Callon, 1984) *of discourse into action*. Actors may acknowledge climate change but then fail to implement policy changes that reduce emissions and resort to business as usual (Wright & Nyberg, 2017). (2) Firms' acknowledgment of anthropogenic climate change can be an act of *ceremonial conformity*. Once an environmental practice is common, more actors are motivated to take it up to meet the expectations of shareholders and customers, while the original intentions behind a practice take the back seat (Delmas & Montes-Sancho, 2010). (3) We may be witnessing an epidemic of *greenwashing*. Actors are making efforts to mislead the public into adopting overly positive beliefs about their environmental performance (Montgomery, Lyon, & Barg, forthcoming). (4) A pervasive *institutional field* has formed around vested interests in fossil fuel extraction. The network includes industry organizations, foundations, and think tanks as well as politicians and regulators (cf. Barley, 2010; Laffont & Tirole, 1991). Fossil fuel companies benefit from this network of industry-friendly organizations that may not be opinion leaders in the public discourse but can sink legislation that threatens the industry (Downie, 2017; Brulle, 2018). These approaches juxtapose the successful promulgation of a rhetoric with failures in implementation.

I take a different approach in this section by studying the most significant exception to the discourse–reality gap on climate change. The defeat of the Keystone XL mega pipeline was celebrated as "one of this generation's most monumental environmental victories" (Denchak & Lindwall, 2022). The project had been taken for granted as inevitable, with the State Department "inclined to" approve it (Clinton, 2010), until it was suddenly rejected in Nebraska in 2011. In principle, then, it appears to be one of the few instances in which rhetoric and action lined up. Indeed, an examination of the popular rhetoric around the project suggests that it had been

rejected on climate grounds. At the national level, opposition to the project centered on its climate impacts. At the local level, the action finally followed that rhetoric.

However, a more complicated story emerges when we examine the interactions concerning the project at the local level. The project was indeed rejected, but climate rhetoric hardly appeared at the local level. Instead, at the local level, the relevant gap was within discourse: In one segment of the discourse, climate change was a taboo topic. When the topic did appear in that segment, it was not treated favorably. Accordingly, what was happening at the local level that the project could be rejected, but without appeals to climate change?

In this section, I also apply my novel methodological approach, which combines inductive reasoning and topic modeling (see Section 4), to bring to the fore the discursive dynamics that allowed the defeat of Keystone XL. I inductively identify three dynamics—*dismissal*, *steering*, and *defensive framing*—which limited the range of topics covered by the local discourse on Keystone XL. I leverage topic modeling not only to show what topics appear but also to bring to the fore when topics are suddenly absent.

The study presented in this section raises a new explanation for implementation gaps, in addition to the four listed above. The decoupling exists not between discourse and reality, but within discourse, itself. In the introductory quote, McKibben alludes to Keystone XL as a climate victory that follows the discourse on climate impacts. However, in this instance, the climate discourse was temporarily suspended. Project opponents framed their resistance in entirely different terms to pinch the victory from TransCanada just before the ring of the bell. The result was a series of surprising interactions that turned on different topics but left spectators wondering about the true motives of the pipeline's opponents, as indicated by Senator H. in the quote leading into Section 5.

Process studies typically take the most salient and enduring topic and trace the thread of discourse from its beginning to its end. That analytical strategy can fail when there is a discontinuity in the topic of discourse, for example, when actors remain silent on key topics to hide their true intent. Instead, I gather all topics across various levels of the discourse before I identify key turning points when actors first question established practices. This rhetoric–rhetoric decoupling complicates discourse and frame analyses, which typically analyze how actors construct new meanings through discursive work (Benford & Snow, 2000; Maguire & Hardy, 2013). Instead, I explore the deconstruction of meaning through discourse using enforced silence. Finally, I discuss discourse as smoke and mirrors. The topic of climate change may not even be in the room when climate (in)action is chosen, and actors must weigh winning a battle over a fossil fuel project against winning the war on putting climate change on the agenda.

6.1 Methods (Abbreviated)[15]

I first used inductive and archival methods to probe the unique defeat of Keystone XL for generalizable knowledge before arriving at my unique topic modeling approach. Similar to one other author, I observed that although Keystone XL is celebrated as a climate victory, the topic of climate change is absent from large swaths of the discourse (Wood, 2019). As a first step, I zoom in on the means of controlling discourse on the micro level and identify two concepts: *dismissal* and *steering*. Because central concerns were left unspoken, my inductive methods quickly reached saturation. To understand what was left unspoken, I then *zoomed out* and included the macro discourse in my considerations before *zooming in* (Nicolini, 2009) on one critical moment—the events in Nebraska—to obtain an understanding of how dismissal and steering can be used systematically to enforce silence on certain topics.

[15] The full methodology is covered in Section 4.

6.1.1 Using a Topic Model to Render Silence Visible

Following my inductive analysis, I used my grounded understanding of the context in conjunction with topic modeling to render visible how silence is enforced on climate change in the local discourse (see Section 4 and Table 5). After creating the topic model, I used its deductive functionality to analyze the enforcement of silence on topics (compare Section 4.1.2). As described in Section 4.2.2, the topic modeling algorithm outputs a matrix of betas that specifies how strongly each word included in any of the documents is associated with each of the topics. By multiplying these betas with a count of the words included in any document and normalizing the result, one can obtain the topic loadings for that document. I used this functionality to deduce the topics of each individual remark made during six public hearings of the Nebraska Legislature in 2011. (In the previous step, I had aggregated remarks according to the individual and the hearing.) See Figure 5 for a visual example. Some individuals testified on more than one day. In total, I used 2,080 remarks by 139 witnesses across 225 testimonies for my mixed-method analysis.

Figure 5 showcases an instance of steering and the accompanying deductively identified topics of the remarks. The initial testimony of the witness (Remark #613 in Figure 5) reads as a passionate appeal to protect the local environment and agriculture by a rancher who is intimately connected to their land. The state senators initiate a conversation, and Senator S. steers the topic toward land acquisition and TransCanada's use of eminent domain. Afterward, the witness largely drops the topics with which she entered the assembly, and the land acquisition topic dominates the witness's subsequent remarks. The topic model quantitatively captures this steering process and allows me to visually depict it on the right side of Figure 5 .

In the Nebraska context, all remarks after the first respond to state senators' questions. Correspondingly, I can measure steering by comparing each remark of an actor with the initial witness testimony. I identified the initial testimony as each witness's first remark that is more than 50 words long. The prevalence of the topics of each remark—*topic loading* or *gamma* in the language of topic modeling—is stored in a vector with one value between zero and one for each topic, or 14 in this case. All values in the vector add up to one. Figure 5 shows five of these vectors as bar graphs on the right side. I create a continuous variable for steering by calculating as the Euclidean distance the change of topics between the initial testimony and each later remark:

$$S_t = \sqrt{\sum_{i=1}^{n} \left(\gamma_1^n - \gamma_t^n\right)^2} \quad (1)$$

where S_t is my measure of steering for Remark t, γ_1^n is the prevalence of Topic n in the initial testimony, and γ_t^n is the prevalence of Topic n in Remark t.

6.2 Interaction Order and Control Over Topics of Discourse

In Section 3 I introduced some general rules of the Nebraska Legislature that play into its interaction order. There are three core rules, as follows: (1) Anybody is allowed to join and testify on the subject of the assembly. Officially, the subject of the assembly is the specific bill discussed in the session; in practice, testimonies overwhelmingly revolve around Keystone XL. The initial testimony is limited to five minutes. (2) After the witness finishes their unconstrained testimony, state senators take control. Any senator can ask any question, which the witness then answers. (3) The witness examination ends when no senator has more questions. By that point, the witness has no more opportunities to influence the senators, and the chairperson will ask the next witness to come forward. The senators ask questions when the witness's initial testimony mentions a topic that interests the senators. Otherwise, witnesses's words are recorded in the

official transcript but otherwise appear as though unheard. That dynamic and the senators' ability to pass legislation entail that this interaction order privileges the senators. The witnesses openly try to evoke a response, for example, "I beg you to enact legislation to protect us." The senators occasionally refer back to previous longer exchanges with witnesses, indicating that these are more impactful.

Rather than finding one unitary explanation for the silence on climate change—such as a strict rule or explicit climate denial—I witnessed how the decoupling of discourse played out in many individual subtle interactions under the interaction order. Most interactions stopped short of explicitly mentioning climate change. In fact, only one state senator has ever explicitly raised the topic at all in the Nebraska Legislature during the discourse on Keystone XL. On the first day of the special session, the conservative senator confronted the climate change topic head on. C. grew up in Holdrege, a small city of about 5,000 in Southern Nebraska, and earned a PhD in physical education in 1959 in the neighboring state at the University of Iowa. He had a frosty attitude toward the concerns advanced under the banner of science: "If we sit back until everything is answered, we'll never do anything." In an exchange with Tim T., a veterinarian and rancher, he saw an opportunity to set the stage for the remainder of the special session, albeit with mixed results:

> TIM T.: [T]here seemed to be a real disconnect between our understanding of what it would take to reclaim the land and the sensitivity of the area they were entering and TransCanada's view of it. So, in that essence, I don't really think you could be more disrespectful to a Sandhills rancher than to not understand, you know, what we would be faced with reclamation [. . .]
> Senator H.: Thank you.
> Senator L.: Senator C.
> SENATOR C.: Thank you, Senator L. I smiled at one of your statements and—which is okay, because I'm going to ask you some questions here, and I'm not leading you down a path. I think I'm going to illustrate maybe what your real concern is here. Are you against all the present oil pipelines in Nebraska?
> TIM T.: No, Sir.

SENATOR C.: Okay. Are you against additional pipelines in Nebraska?
TIM T.: No, Sir.
SENATOR C.: Are you against the further development of fossil fuels?
TIM T.: No, not at all, Sir.
SENATOR C.: Are you against drilling for oil in the United States?
TIM T.: No
SENATOR C.: Are you against coal-fired electrical generation?
TIM T.: No, not at all.
SENATOR C.: Are you—do you believe in global warming? (Laughter)
TIM T.: I'm—honestly, I'm not sure. I'm not trying to be cute or . . . I'm not sure.
SENATOR C.: I'm asking you these—I think your reservations and your resistance is [sic] for pure reasons. And I appreciate that. Thank you.

The exchange is a useful example of an interaction through which two actors create a shared understanding of an issue through cultural references that do not require an explicit, detailed rationale. By requesting his stance on fossil fuels, C. brings to the fore three elements of T.'s resistance to Keystone XL. (1) In his initial testimony (abbreviated above), T. expresses that he opposes Keystone XL for local environmental and social reasons. (2) T. supports, or at least does not vocally oppose, the fossil fuel industry. (3) T. expresses what appears to be genuine confusion about climate change. C. does not make explicit which of these three elements constitutes pure reason, but he signals that resistance, such as T.'s is welcomed by the assembly. The topic then[16] settles into its limbo of being present in the room but not actively discussed.

A similar exchange between C. and the attorney Anthony Swift demonstrates that through references to, for instance, coal and nuclear power, actors can convey much information quickly and gauge each other's stance. Swift is an analyst at the Natural Resources Defense Council who traveled from Washington to Nebraska to testify on the risk of a large-scale spill of the Keystone XL pipeline. Swift was knowledgeable regarding federal pipeline regulations, and in the year leading up to the hearing, Swift had also read up on pipeline spills. However, the

[16] There is one minor exception—C. raised the topic of climate change again when he gave the director of mobilization of the American Petroleum Institute an opportunity to talk about the topic. Considering the climate denialism of the American Petroleum Institute (Mann, 2012a), one would have expected a clearer answer, but C. was disappointed: "I am a certified government affairs lobbyist, and so, I'm not an expert on global warming by any means. Nor am I here to speak to that on behalf of the client."

senators were more interested in his organization's general positions. Note the parallel line of questioning, except for the lack of an explicit question about climate change. These omissions do not change the character of the exchange.

> SENATOR C.: Does [the Natural Resources Defense Council] support further development of fossil fuels in the United States?
> ANTHONY SWIFT: I don't know that I can personally speak to [the Natural Resources Defense Council]'s position on that point.
> SENATOR C.: So, it's safe to say that it's interested in the United States becoming more energy independent through wind and solar.
> ANTHONY SWIFT: Yes. The [Natural Resources Defense Council] believes that there are a wide variety of technologies out there, including wind and solar, that can lead to energy independence.
> SENATOR C.: Does [Natural Resources Defense Council] oppose coal-fired generation for electricity?
> ANTHONY SWIFT: I don't know that I can speak to the institution's position on coal-fired generation.
> SENATOR C.: Does it oppose nuclear power?
> ANTHONY SWIFT: And again, it's a . . . I can't speak to the organization's position on nuclear either.
> SENATOR C.: Well, you're having some difficulty telling me what their position is and yet you were contacted to come out here and really testify against this project.

The two exchanges above reveal the interaction order in action. The senators decide where to take the conversation and steer the topic by asking questions, while the other participants respond to these questions. The senators have more leeway in how they interact with witnesses. Not only does C. head the first witness down a path, but also he is dishonest about it. Simultaneously, C.'s moral judgment of the witness illustrates senators' moral expectations of the witnesses and indicates power asymmetry. The witnesses are supposed to exhibit "pure reason" by meeting expectations that are never explicated. The implicit task of the witnesses is to appeal to the senators through the topics they raise and their positions on them. Meanwhile, the senators can speak freely throughout. For instance, C. uses Swift's dissatisfactory response to agitate against Swift at the end of the exchange.

Taken together, the interaction order in Nebraska creates a disparity of voices in the discourse. Anyone could come in and hold forth with a defiant speech, but the likelihood of making an impact would be less than if the actor had made an appeal tailored to the senators. Witnesses generally rank lower in the interaction order, but there are more subtleties. Insiders—such as Tim T., the Nebraska farmer from the first exchange—are treated affectionately. Pipeline opponents from the United States' West Coast face critical questions regarding their motives for traveling to Nebraska, while fossil fuel industry insiders from Texas and Canada do not. Laypeople were likelier to be asked about their experiences with the pipeline project, while experts were asked about concepts. In the upcoming subsections, I discuss three mechanisms that turn on the interaction order and drive the contents of the discourse—steering, dismissal, and defensive framing—before subsequently I demonstrate how these mechanisms play into the bias of the discourse against discussing climate change or oil sands.

6.2.1 Steering the Topic of Conversation

Once witnesses completed their initial five-minute testimony, under the interaction order, the senators could steer the topic of conversation. In the subsequent interactions, the senators asked questions that the witnesses would then answer. This dynamic allowed the senators to drop any topic from the conversation and to focus on whichever topics they thought were, for instance, relevant or of strategic value. This dynamic placed witnesses and senators in a unique bind. The witnesses brought new information to the conversation, which gave them an opportunity to influence the unfolding events, for example, by making a more targeted appeal with added details. However, since the senators chose the topic of the conversation through their questions, they were in control at the meta-level.

One illustrative instance of steering occurred when a member of a climate action advocacy group raised the topic of climate change. Mark W. was a member of 350.org and one of only two individuals who were explicit in their concern about the project's climate impact (see also the next subsection). Founded in 2007, 350.org is now one of the largest international organizations to advocate for climate action. In September 2019, 350.org organized the Global Climate Strike—probably the largest ever with 4–7.6 million participants—but in 2011, it was still a relatively small organization. Below, I quote parts of W's testimony on a pipeline routing bill by Senator L. Previously, W. had participated in a successful campaign for an anti-smoking bill, and he used that experience to combine two topics for his framing: climate change and the regulatory process in Nebraska. However, when asking his follow-up question, L. steered clear of the climate change topic and focused entirely on one of the procedural issues:

> MARK W: [I am] the secretary for a relatively new group, The Nebraska Chapter of 350.org, which is very concerned about global warming and climate change [. . .] What happens if a governor is elected who believes the 98 percent of the global scientists in this country that global warming is caused by human activity, burning fossil fuels, and that governor just says no to every pipeline? Would that make all of you feel really good that you gave that much power to a future green governor? [. . .] Should the people appointed by the governor be accepted and approved by the Legislature? [. . .] And again, you've got, on page 8, you've got another deadline of 60 days [. . .] In page 9, Section 8, it starts out with 30 days, but you never mention the attorney general review. Is there not going to be an attorney general review of this committee that is set forth? [. . .] And if somebody wanted to ask questions of an organization that does think that this Keystone pipeline should be stopped, not just rerouted, I'm your man.
>
> SENATOR L: You brought up a whole new concept I hadn't thought of. Is there any Attorney review of the committee? Should there be an Attorney review of [our pipeline bills]?

In this exchange, L.'s steering effectively removes the topic of climate change from the discourse without bringing it to the fore. There is no odd shuffling as the senators and W. align their positions, because the difference of positions is not made explicit. Instead, under the interaction order, the senators can simply move on and continue the conversation with W. as

though the topic of climate change had never been raised. Hence, climate change appears to be a non-issue during the subsequent exchange. Markedly, because of the interaction order, this maneuver requires some degree of implicit agreement between the senators. Any senator could have returned the topic to the fore by asking a follow-up question and steering the topic back. The interaction order then entails that the topic of discourse emerges from the interaction. Witnesses raise topics, and the senators choose what topic or topics they want to steer and continue their conversation on. Next, I will discuss one caveat to this formula, which transfers more control to the senators.

6.2.2 Dismissing an Actor

The senators' most frequent means of exerting control was not engaging in an exchange at all. This happened so frequently that it would not strike anyone as odd. The chairman would politely thank the witness and call the next witness. The standard mode of operating was to end the conversation with a remark such as, "Well done. Are there any questions? Seeing none, thank you. Well done." Such remarks were ubiquitous, and always made in a courteous and professional manner.

Following his failure to put climate change on the agenda in the previous exchange, Mark W. changed his strategy and made another attempt. The second attempt took place on the same day, but another set of actors was involved. The exchange above took place in the Natural Resources Committee, while the exchange below took place in the Judiciary Committee. During this second exchange, W. was more focused on climate change, but his more forceful attempt was dismissed:

> MARK W: Because we must stop global warming caused by burning fossil fuels, I believe this pipeline may become obsolete within 30 years. If we don't, the Pentagon has said they are concerned for our security in and out of this country due to global warming and the climate changes that it will cause. Some people

think the Third World war will be fought over water because of global warming and climate change. Thank you very much.

SENATOR A: Thanks, Mark. Questions of Mark? Seeing none, thank you. Next proponent.

Although A.'s response does not give away a sentiment,[17] note the implicit agreement that had to be in place for it to occur and, hence, how "loud" the silence is. If just one senator had raised a question about climate change, the ensuing exchange might have foregrounded the invisible fault line that ran through the room. Without any questions being asked, we are left with no explicit statements by the senators on climate change. Instead, the silence on climate change becomes salient. By steering and dismissing actors, the senators effectively enforce silence on the topic of climate change without bringing the topic to the fore.

6.2.3 Defensive Framing

While the interaction order allowed senators to control the topic of conversation through steering, the witnesses had the means of pushing back through defensive framing. By providing an evasive response—or borderline lies—witnesses could force a change of subject or intentionally or unintentionally end the conversation. In the second exchange above, Swift attempts to evade a line of questioning about his organization's policy on fossil fuel by not providing a specific position. The attempt fails because it is too obvious: the state senator is suspicious after Swift states that he is unfamiliar with the Natural Resource Council's position on coal and nuclear power. Defensive framing is most effective when an actor can entirely avoid a contentious topic.

In the exchange below, Senator C. presses John Hansen, president of the Nebraska Farmers Union, on his organization's position on fossil fuels. Unlike the conservative image of rural America and American farmers, the Nebraska Farmers Union in 2011 pursued a

[17] The beauty of polite dismissal is that I had to read the meeting transcripts many times to discern the pattern of dismissal.

progressive agenda. The organization's 2010–2011 program warned about climate change and supported wind energy, biofuels, and carbon cap and trade. Within the framework of the National Farmers Union, the organization also ran the Nebraska Carbon Credit Program. Hansen, himself, wrote a comment to the State Department in June of 2011 regarding Keystone XL's environmental impact assessment. Referring to oil sands, he stated, "At a time when CO2 levels are at all-time recorded highs and climate change appears to be worsening, it does not make sense to expand this particularly environmentally destructive source of fossil fuel energy." In an exchange with Senator C., however, Hansen became tight-lipped:

> SENATOR C.: Is Farmers Union against additional pipelines in Nebraska in the future?
> JOHN HANSEN: No.
> SENATOR C.: Is Farmers Union against further development of fossil fuels?
> JOHN HANSEN: Nope.
> SENATOR C.: Is Farmers Union against drilling for more oil in the United States?
> JOHN HANSEN: No.
> SENATOR C.: Is Farmers Union against coal-fired electrical generation?
> JOHN HANSEN: No.

The tight-lipped defensive framing of his response allowed John Hansen to sidestep a conversation on his personal and the Nebraska Farmers Union's position on fossil fuel, oil sands, and climate change. After the exchange, C. asked a last time whether it was his organization's goal to "just stop" the pipeline. That question allowed Hansen to return the conversation to the tried-and-tested topics that he had used in his initial framing of the issue: TransCanada's land acquisition practices and local environmental impacts. These two topics had previously elicited positive responses and agreement.

Notably, the exchange only brought to the fore a defensive framing effort that Hansen had been engaging in all along. Hansen's initial testimony did not present *any* explicit statement on climate change or fossil fuels and, thus, did not represent the full range of his positions. The

exchange further suggests that Hansen's framing is grounded in an unwillingness to engage with senators on fossil fuel or climate change. In other words, defensive framing describes the constant avoidance of potentially polarizing topics. The exchange with C., when contrasted with Hansen's comment to the State Department, converts a convenient omission into an explicitly deceptive effort.

Defensive framing enforces silence on a topic in a fashion similar to steering: Witnesses simply refuse to engage on certain topics. Successful defensive framing leaves the counterpart without any room to develop a conversation on a topic, for example, without any idea to criticize, comment on, or develop further. The strategy can fail, for instance, if an actor's position on a topic is already known or can be assumed, as was Swift's case for the Natural Resources Defense Council.

Defensive framing is the last puzzle piece of joint control over the topic of conversation in the Nebraska Legislature. Witnesses open the conversation with their initial testimony. The interaction order then hands control over the conversation to the senators, as they have the exclusive right to ask questions. The right to ask questions allows senators to steer the discussion or dismiss witnesses by not asking questions. Defensive framing hands some of the control back to the witnesses, as they can choose not to engage when certain topics arise. Defensive framing comes to the fore only when an actor is pressed on a specific topic. However, the same principle applies to the initial testimony of witnesses: they can sidestep certain topics. The freedom to choose what topics to engage applies when witnesses answer questions—and even more so applies when they deliver their initial testimony. In the next subsection, I systematically analyze the interplay of the three mechanisms and how participants jointly exert control over discourse.

6.3 Systematic Analysis

This section employs the topic model (see Section 4 and Section 6.1) to analyze the incursion of the national into the local discourse. The model encompasses 14 topics (see also Table 5), including the topic of *climate change* (Topic 9), which is largely absent from the local discourse. A related topic is the environmental impacts of *oil sands*, for example, on the region where the wells are located. Another reference point for the incursion of the national into the local discourse is discussions of the State Department's *permitting process*, such as timelines, prospects, or the quality and contents of the Environmental Impact Assessment. Furthermore, the topic model allows us to detect a *project description*—accounts of the pipeline route, and locations of facilities such as pumping and monitoring stations. This descriptive language is most salient in the documents by the State Department (see Figure 4). My topic model includes two topics that are only tangentially related to Keystone XL: *Meeting administration* (Topic 11) is carried out by the session chair and includes calling witnesses, keeping track of time, or taking questions, and *witness examination* (Topic 6) entails direct interpersonal communication and often uses more informal language, for instance, the frequent use of delexical verbs.

The topic model captures three variations of local environmental concerns and three local non-environmental topics. The most specific form of local *environmental concerns* (Topic 1) centered on erosion, environmental restoration, and potential damage to crops. Farmers raised these concerns because in the region along the pipeline route in Nebraska, the topsoil was thin and prone to erosion or blowouts. More generally, Nebraskans raised vague concerns about long-term environmental risks for Nebraska's *agriculture* (Topic 12), emphasizing that its success depended on a clean environment and clean water. Finally, some individuals raised well-articulated concerns about the topic of *groundwater* (Topic 14), and the hydrology of Nebraska.

Faculty members from the University of Nebraska–Lincoln championed concerns that a pipeline spill could quickly spread and have a devastating effect because 85% of Nebraskans relied on drinking water from the local aquifer. The pipeline would have traversed the Nebraska Sandhills, a geographic feature unique to the United States. The sandy, porous soil of that area acts similar to a giant sponge that quickly absorbs rain, and the large, connected underground aquifer below carries liquid 25–300 feet or approximately 10–90m per day.

Figure 4 displays the divergence of topics across three analytic levels. National-level actors talk about Keystone XL in a very broad, almost allegorical fashion as a pipe to transport oil sands (Topic 13), while mentioning the role of oil sands in climate change (see also Table 2). The focus on the oil sands spills over into the State Department's Environmental Impact Assessments. The assessments become dominated by the climate change topic (Topic 9) as the department adds discussions of climate impacts and climate change to its existing material (see Section 3). Meanwhile, corresponding to my manual reading of the material, the climate change topic is almost completely absent at the local level in Nebraska. Instead, the local level is characterized by a far larger diversity of topics being actively discussed. The pivotal issue of TransCanada's acquisition of land along the pipeline route (Topic 8) exhibits a strong presence across all public hearings in Nebraska. Overall, the hearings appear to be multi-vocal assemblies where many topics can be discussed.

Figure 4: Comparing Discourse Across Analytic Levels to Highlight Discrepancies

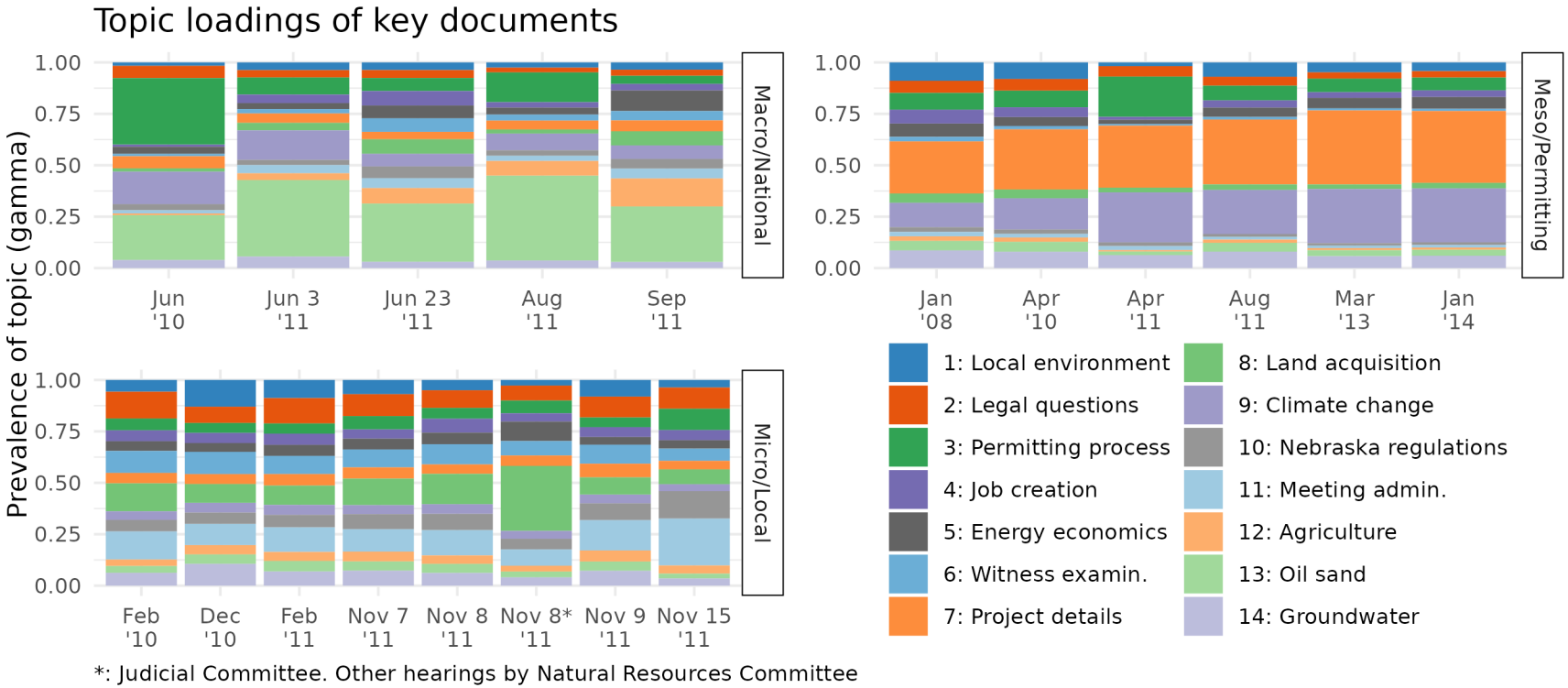


Figure 5: Comparing Topics Within Micro Level

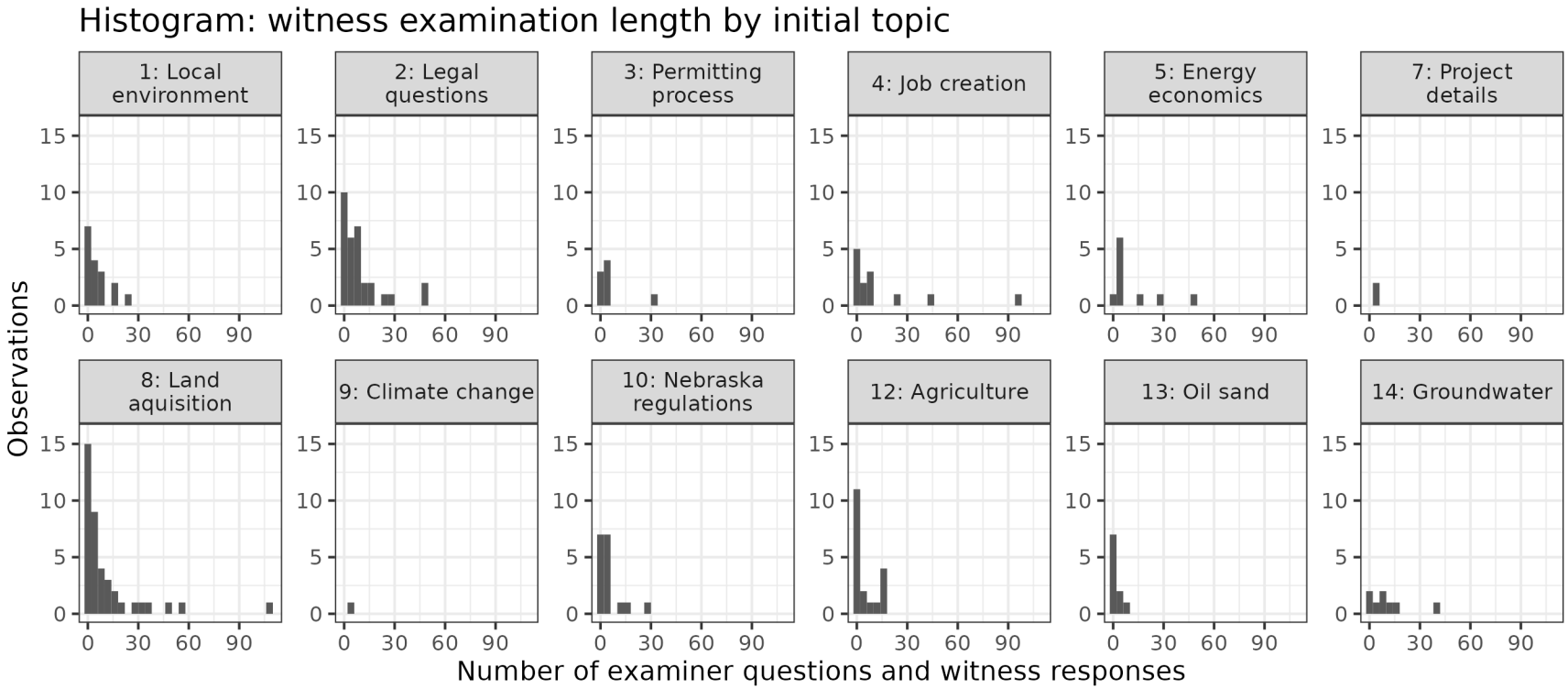
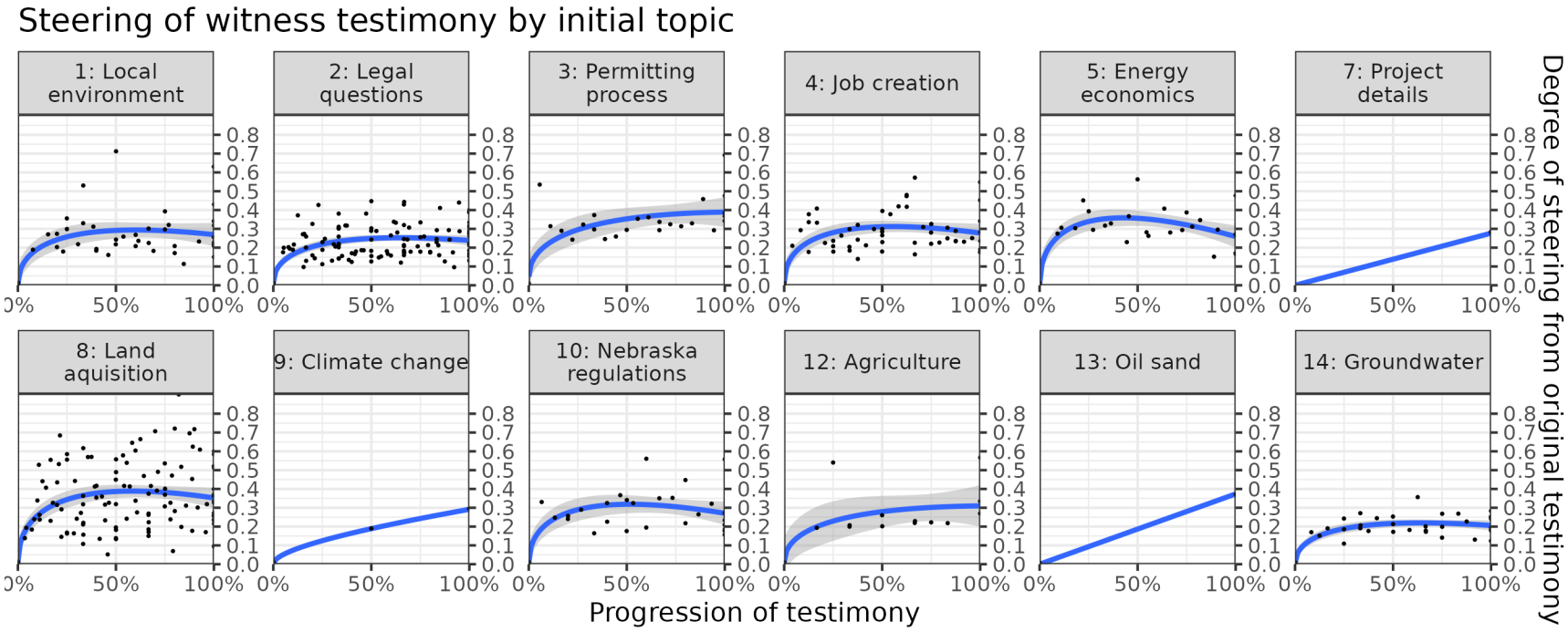


Figure 6: Topic of Initial Testimony and Steering



Topic change measured as euclidean distance
Smoothing: squareroot function

6.3.1 Discourse and Silence

In the inductive analysis, I observed that a conversation on climate change would require a two-sided effort. Topics emerge from witnesses' initial testimonies, while the senators act as "gatekeepers" who can select out topics. The key interactive mechanisms are steering and dismissal by the senators and defensive framing by the witnesses to evade controversy and censure. In the next two subsections, I demonstrate first how dismissal and defensive framing played into the decoupled discourse in Nebraska, and then I discuss the role of steering. While my investigation is motivated by the absence of a climate discourse (Topic 9) in Nebraska, I also track the adjacent topic of oil sands (Topic 13), which is also associated with the national discourse. The other topics are used as reference points.

6.3.2 Dismissal and Defensive Framing

The topic model indicates that dismissal and defensive framing brought about a latent gap between the national and local discourses. Two observations are of interest: how often actors raise a topic and how quickly they are dismissed. In Figure 5, the x-axis shows the length, and the y-axis the frequency of all witnesses' examinations at the six public hearings of the Nebraska Legislature in 2011. The plot is faceted by the topic of the initial testimony to allow comparison across topics. The figure reveals that one individual raised climate change as the primary topic of their testimony but was dismissed immediately. Of the 10 individuals who raised oil sands as the primary topic of their testimony, seven were dismissed right away while three had very brief exchanges of 1–2 remarks. Several environmental organizations and grassroots attended the hearing, and some of these then had climate policy objectives in place—most prominently, the Natural Resources Defense Council. Yet, I observe that both climate change and oil sands are

rarely used as the primary frame in the initial testimony, and when these topics are raised, the witnesses are dismissed quickly.

The systematic approach to mapping testimonies and responses highlights the overall two-sided nature of control over interactions. I can confirm that witnesses systematically skirted the topic of climate change and that they largely avoided the oil sands topic. The "death knell," however, comes from their counterpart, the senators, who systematically select out the topic the few times it appears. This two-sided dynamic indicates that the intentional avoidance of the topics—defensive framing—is well founded. The bias becomes clearer when we compare the responses to these two topics to the responses to other uncommon topics. The senators were slower to dismiss other uncommon topics, for instance, discussions of TransCanada's claimed job creation numbers (Topic 4) or concerns over groundwater pollution (Topic 14). In other words, job creation numbers and groundwater pollution are niche topics that the senators were eager to learn more about. Well-founded caution is a much likelier explanation for why witnesses did not raise my two topics of interest more often.

In contrast, the senators were slower to dismiss other uncommon topics, for instance, discussions of TransCanada's claimed job creation numbers (Topic 4) or concerns over groundwater pollution (Topic 14). Overall, this illustration of framing and dismissal indicates that the presence of topics in discourse is a function of two sides interacting. Two constraints act on the topics. The topic must to be raised by focal actors, and the field should be open to discussing the topic. A caveat to this first finding is that dismissal would be less relevant if the senators' primary means of suppressing specific topics was through steering.

6.3.3 Steering

My systematic analysis did not indicate that steering was as important a means of biased silencing in discourse. My concern was that senators would forgo dismissing witnesses who discuss certain topics but steer them off their matter of concern instead. Figure 6 depicts the steering of witnesses' testimony, again split into multiple plots by the primary topic of the initial testimony. The y-axis denotes the progression of witnesses' testimonies in percentages. That is, an individual with three remarks would have three dots at 0%, 50%, and 100%. I normalized the progression of each witness into percentages rather than using ordinal numbers so I could make a comparison across all remarks by all witnesses. The x-axis uses my novel steering variable (Equation 1), which I calculated for each individual remark by each witness. (The origin marks the initial testimony of the witness, where the steering is always zero.) To compare steering between topics, I estimated steering as a function of testimony progression using a square root function. The blue line shows the estimated trends and standard errors. Figure 6 reveals that topics comparable to climate change or oil sands in frequency after escaping dismissal also escape steering. Topics 4 and 14, which I highlighted in the last subsection as surviving dismissal, were no likelier than other topics to see strong steering. Steering also did not seem to increase as testimonies progressed.

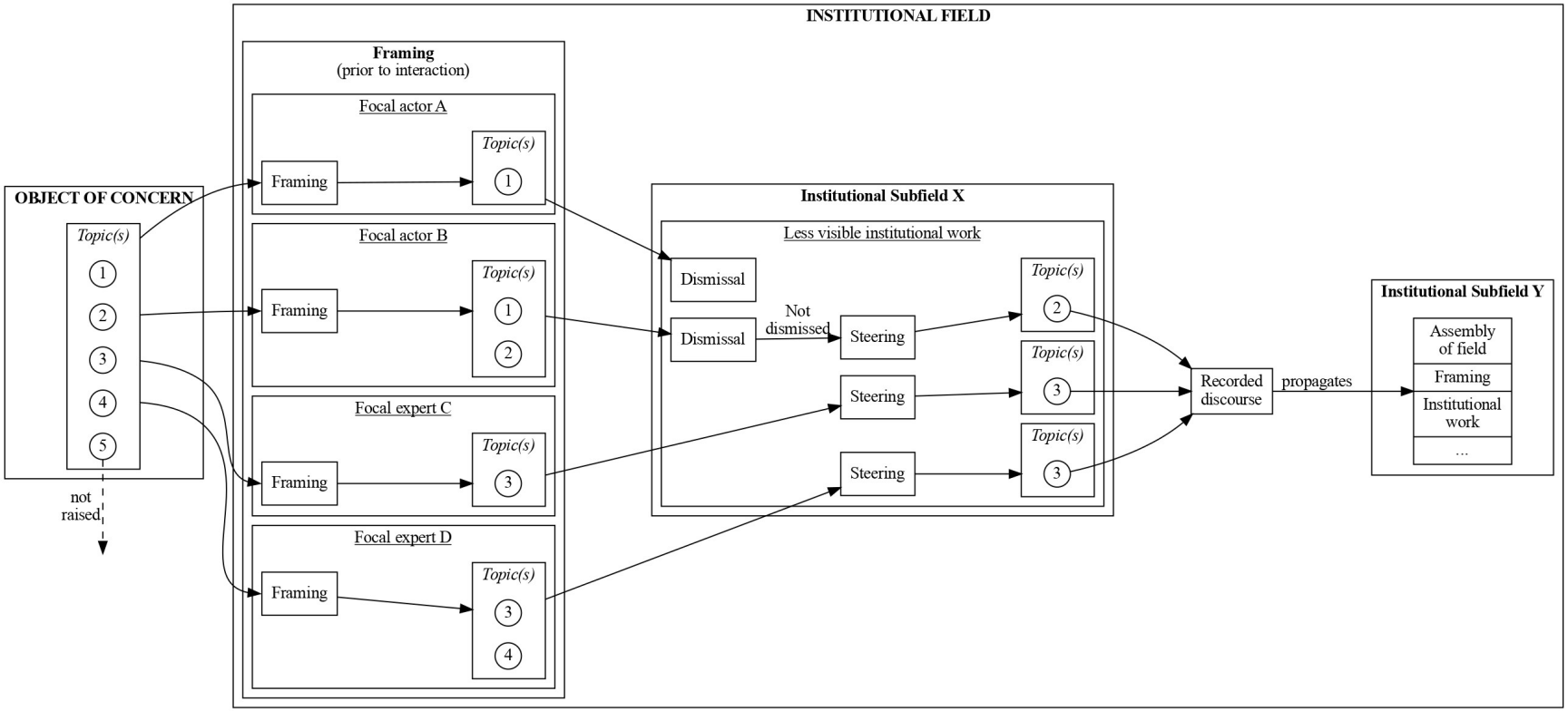
Similar to dismissal, a quantitative examination of steering reveals that interactions determine the topic of the recorded discourse with a slight twist. Under the interaction order, the senators can select and steer based on an initial topic that resonates with them. For example, Figure 6 reveals that witnesses who initially testify to TransCanada's land acquisition (Topic 8) are most frequently asked by the senators to provide information on other topics. The relative frequency is large compared to wittnesses testifying on other topics: Those testifying on land

acquisition experienced almost twice as much steering as the groundwater topic (Topic 14). My interpretation is that senators use steering to let members of their in-group—landowners and farmers—speak on a wider variety of topics rather than to suppress specific topics. Steering, then, would be another means of deciding who can talk on what topic, but with a different mechanism than I initially expected.

6.4 A Model of Topics of Discourse and Silence

The model depicted in Figure 7 integrates the three concepts discussed in this section into an interactive process model. The process begins with the framing phase, followed by the more elusive processes of dismissal and steering. During the framing stage, a focal actor selects one or more of the topics related to the subject matter to construct a framing, prior to entering a subfield or assembly and beginning an interaction. Note that the framing stage itself is also "pseudo-interactive", as actors adjust their framing, and may take a defensive stance where they withhold some of their positions if they foresee negative reception. Throughout the ensuing interactions, actors are subject to an interaction order (see Section 6.2), where different actors possess varying degrees of control over the unfolding discourse. Specifically, I discuss the potential impact of steering and dismissal on the discourse topics in Section 6.3. As an aside, for most assemblies, the interaction order also applies to the selection of witnesses. For example, my dataset includes testimonies to Congress (see Section 3.3.1), where witnesses were vetted for their expertise and their position on the Keystone XL pipeline project. In the unique case I present in this thesis, witnesses were relatively unconstrained, which allowed me to highlight dynamics more effectively. In other assemblies, we would anticipate more control over topics to be exerted *before* the observed interaction commences.

Figure 7: Model of Enforcement of Silence



During the framing stage, actors decide which topics to incorporate as they present their stance on the subject matter. Both my inductive analysis and the topic model underscored the wide range of topics that bore on Keystone XL discourse. Actors can select a topic or multiple topics from this pool, and construct their framing around these topics based on their understanding of the subject matter and their objectives. For an environmental activist, the choice might be between climate impacts (Topic 9), and risks for the groundwater along the pipeline route (Topic 14). As a climate activist with 350.org later stated about the period leading up to the events in Nebraska: "I analyzed what it would take to win Keystone XL, I saw that [Nebraska's] aquifer was threatened and that was a major wedge" (Adler, 2015).

Dismissal and steering limit the duration and attention given to a topic in the first place, rather than constituting constructive engagement with a topic. In other words, actors can take advantage of their control over the discourse and the interaction order to suppress a topic's discussion before it fully unfolds. Once dismissed, an actor might be entirely excluded from the discourse. Dismissal also eliminates the usual need for actors to coordinate and bridge differences in understanding (cf. Steele, 2021; Harmon et al., 2015). While the existing literature assumes that a difference in opinion is resolved when actors grasp the underlying assumptions behind a statement and amicably resolve disagreements, the possibility of dismissal implies that disagreements can be simply set aside. Frictionless social interaction usually requires a degree of coordination; dismissal may obviate that need. If the interaction order makes it easy for certain actors to dismiss others, the act might become common enough to draw no attention at all from observers. In contrast, steering does not limit the time and attention that a focal actor receives, but rather affects the range of topics an actor may discuss. When the social context allows an actor or a group of actors to set the agenda—for instance because they are the ones asking

questions—then these actors can move past a topic that is perceived as odd by changing the topic. Like dismissal, steering may not draw a lot of attention if it routinely occurs.

Discourse does not occur in a vacuum. The outcomes of interactions propagate through subsequent interactions, even those concerning different topics and matters of concern, if the same actors participate. I highlight three examples of this propagation. First, the field's composition may change if outside actors are dissatisfied with the outcome of the discourse and decide to enter the field. Second, the inhabitants of the field may perceive the events as an indicator of unwanted changes on the horizon, and carry out more institutional work to guard the institution and influence other actors. Third, actors may soften the impact of the events by shaping how the public "reads" the discourse, for instance by reframing a failure as a success, or by attacking the legitimacy of a pivotal topic.

For discourse analysis, the processes of dismissal and steering present significant challenges. These two actions result in silence, rather than generating data. As previously noted, a single instance of dismissal or steering might not raise eyebrows if these actions are routine. This inconspicuousness makes dismissal and steering effective mechanisms for preserving existing assumptions about a topic by pre-empting a more in-depth discussion of that topic. (However, this only holds true as long as the topic is not frequently brought up—repeatedly avoiding discussions on a topic that garners significant attention from other actors could be seen as suppression.) In this section, I hope to have filled in some of the void that is created by dismissal and steering, by making visible gaps in discourse through a mix of inductive methods and topic modeling.

6.5 Conclusion

This section utilizes topic modeling to systematically explore the decoupling within discourse and silence on two critical topics: climate change and oil sands. Section 5 demonstrated dynamics around silence by highlighting specific interactions where dismissal, along with three other dynamics,[18] were most salient. However, acknowledging the often implicit nature of silence (see Section 2), this section adopts a systematic approach to examine silence. It employs topic modeling to reveal the divergence in topics within the discourse. Furthermore, it highlights three dynamics behind silence: defensive framing, dismissal, and steering.

To draw out the dynamics behind silence, this section applies a modified topic modeling approach (see Section 4). In addition to the qualitative attention to interactions between actors, which was already present in the previous section Section 5, I layer an analysis of the topics of discourse, and their fate. The topics of discourse are contingent on participants' dynamics rather than, or in addition to, the merit of their arguments. My findings systematically demonstrate how defensive framing, dismissal of actors, and steering of discourse resulted in the quiet omission of the climate change and oil sands topics in the local discourse on Keystone XL.

Overall, the cross-level analysis of topics reveals that *what is not said* is as significant as *what is said*. The absence of certain topics is a crucial feature of discourse. There are two dimensions to the interactive selection of topics. On one hand, individual actors can exert their agency on an issue. Defensive framing allows actors to avoid contentious topics in favor of resonant topics. One could interpret the events in Nebraska as a climate victory that was achieved by actors who astutely recognized the topics of eminent domain and local environment as the winning formula. On the other hand, the topics of discourse reflect the social structure. Actors with a strong environmental stance encountered resistance in Nebraska. For instance,

[18] The other three being rules of the game, information dearth, and countercoalitions.

Mark W.'s concerns about climate change were disregarded, while John Hansen and Anthony Swift were grilled about their stance on fossil fuel. In contrast, Nebraskan farmers dominated the agenda. Their numbers ensured that there were ample opportunities to hear about local issues, while the senators showed interest and often followed up with related or unrelated questions. Thus, the topics that dominate the space are indicative of its social structure, evidence of the farmers' relative influence in Nebraska.

These two perspectives are not as contradictory as they may initially appear (Giddens, 1984). Silence can both be an act that brings a "hypermuscular" Suddaby et al. (2017) actors closer to their goal by avoiding potentially contentious issues—thereby highlighting the potential for strategic action (Cornelissen & Werner, 2014)—and yet indicate a severely constraining social order (Steele, 2021). The constraining social order does not manifest as coercion, but reflects that actors hold certain assumptions or beliefs in the particular context. To be comprehensible in a context requires working with these beliefs (Harmon et al., 2015), for instance by focusing on topics where there is common ground while passing over others. Overall, the process is characterized by its interactive nature (Reinecke & Ansari, 2021), where actors on either side both "push" and "pull" certain topics, resulting in the overall topic mix.

Through qualitative and quantitative data on interactions, this section shows that the specific social constellation in Nebraska is a key factor for the delay of Keystone XL, which eventually snowballs into the project's defeat. Specifically, Section 6.2 introduces the interaction order (Goffman, 1983), which influences in manifold ways how the discourse unfolds in the specific context. The contents of discourse cannot be separated from their wordsmiths and the interactions between them and their audience. Essentially, what we are witnessing in this section

is the visible portion of the tacit socio-cognitive processes that take place long before any detailed argument is made or assessed:

> Once individuals—for whatever reason—come into one another's immediate presence, a fundamental condition of social life becomes enormously pronounced, namely, its promissory, evidential character. It is not only that our appearance and manner provide evidence of our statuses and relationships. It is also that the line of our visual regard, the intensity of our involvement, and the shape of our initial actions, allow others to glean our immediate intent and purpose, and all this whether or not we are engaged in talk with them at the time. Correspondingly, we are constantly in a position to facilitate this revealment, or block it, or even misdirect our viewers. (Goffman, 1983)

Importantly, Section 6.2 shows that the interaction order is skewed toward the state senators, whom other actors want to influence and who eventually—albeit indirectly (see Section 8.1)—cause the crucial setback of the Keystone XL project. Section 6.3.3 describes the senators efforts in turn to hear from their constituents: farmers and landowners from Nebraska. Unsurprisingly, the topics of discourse lean toward their concern for local issues, while topics that interest out-groups do not fare as well. Thus, the interaction order is central to the matter. By systematically analyzing interactions against the backdrop of a specific social constellation, this section shows that attention to context can be crucial to understanding discourse. In the context of their campaign on the national level against the "climate killer" Keystone XL, environmental organizations mobilized supporters in the Midwest, but only local issues, entirely decoupled from the topic of climate change, could bring about the "climate victory" against Keystone XL. A decontextualized analysis of discourse can easily overlook silence on a key topic—either on climate change or on local issues—as would have been the case had I only studied discourse on a macro or micro level.

7 OUTLIERS

> All right. Let me ask you, tell me your credentials again. Tell me your background, your education, and your experiences that lead up to your testifying here.
>
> —Senator C. "interrogating" Anthony Swift, an attorney and policy analyst with the Natural Resources Defense Council who traveled from Washington to Nebraska to testify.

So far, I have focused on the content of discourse in terms of topics and ignored *who* testifies. The outliers indicate that identity matters in two ways. Steering allows those favored by the interaction order to choose *who* gets heard on *what* topic, and they can be biased in their choice. An expert status renders individuals less vulnerable to dismissal and steering, but a long testimony introduces some additional challenges. Experts are exposed to more instances of visible institutional work.

First, I tuned into the large cohort of witnesses testifying on land acquisition (topic 8). These individuals were subject to an elevated degree of steering (see Figure 6). 18 of the 40 individuals described themselves as farmers or ranchers. In the interactions with these farmers, the state senators occasionally alluded to identity playing a role in their interactions with them: "Just a rancher doesn't work here. (Laugh)". State senators expressed their respect for farmers and/or identified themselves as farmers: "I'm a farmer; I'm not just a farmer." The positive reception of farmers is incongruous with my inductive observation (see Section 6.2) that steering could be used to prevent the emergence of discourse on a topic in an early stage. Farmers testifying on land acquisition and being steered to other topics indicates an additional modus of steering. By steering a farmer from land acquisition to, for example, the topic of local environmental impacts, the state senators create an echo chamber. In that modus, steering amplifies the voice of a group that is close in identity to the state senators. Employed in that way

to amplify voices, steering provides additional control over the discourse to those with a more control over discourse.

Members of the second group with long testimonies have a more negative experience. Table 5 shows a selection of individuals who have exceptionally lengthy conversations with the state senators in Nebraska (95th percentile). Their affiliations and roles categorize them into three distinct groups: (1) TransCanada staff and contractors, (2) members of the industry and industry organizations, and (3) expert witnesses, including university faculty and other individuals with relevant expertise such as attorneys. If expert witnesses have more space to talk about the topics in their expertise, they could exert disproportionate influence over the outcome of discourse. A comparison of the three groups and conventional witnesses confirms the special role of expert witnesses. To create Figure 8, I hand coded all participants of the 2011 Nebraska Legislature special session to determine whether experts are given more time to testify—shown are the results for the six topics with the best data coverage across groups. Individuals are Nebraska residents without any group affiliation such as ranchers who come to the Nebraska Legislature on their own accord to testify. Except for a five individuals, every single expert witness testifies longer than every single individual witness. TransCanada employees and industry insiders are also typically given more space to testify than individual witnesses. I also observed that expert witnesses and industry insiders were subject to less steering than individual witnesses, maybe owing to the increased steering in the land acquisition topic that many individual witnesses testified on.[19]

[19] Data available from the author upon request.

Figure 8: Who Has Room to Speak?

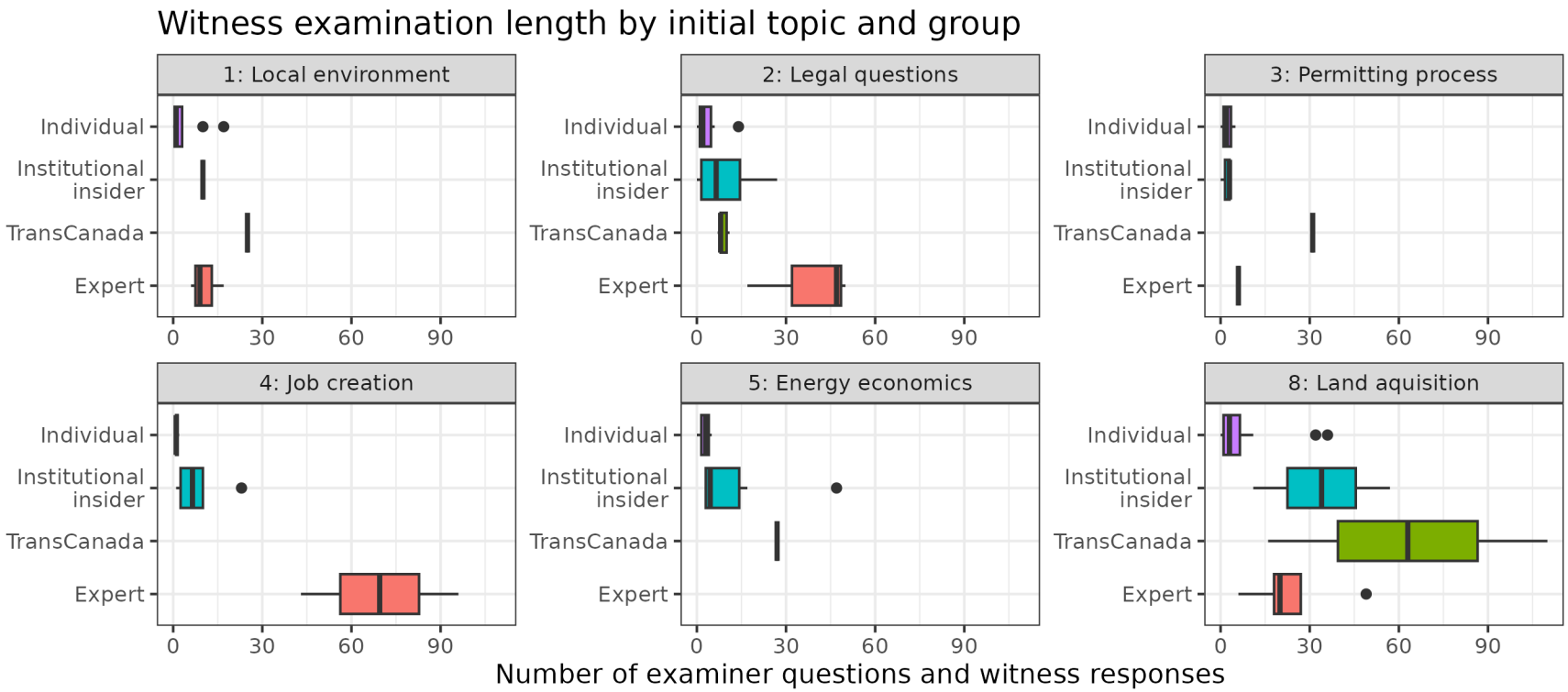


Table 7: Individuals with Exceptionally Lengthy Witness Examinations

Name	Affiliation	Role	Questions	Group
Robert Jones	TransCanada	Vice President, Keystone	110	TransCanada
Lara Skinner	Cornell University Global Labor Institute	Associate Director of Research	96	Expert witness
John Kuehn	Southern Public Power	Secretary of Board of Directors	57	Institutional insider
Alan Peterson	Sierra Club	Attorney	50	Expert witness
John K. Hansen	Nebraska Farmers Union	President	49	Expert witness
Anthony Swift	Natural Resources Defense Council	Policy analyst, attorney	47	Expert witness
Michael Whatley	Consumer Energy Alliance	Executive Vice President	47	Institutional insider

Note: This table includes individuals in the 95th percentile with regard to testimony length. As a robustness check, I also looked at 90th percentile, and the 90th percentile by number of words, both of which yielded a similar picture.

However, the axial coding of the experiences of these three groups highlighted that experts had a significantly less pleasant experience when testifying in the Nebraska Legislature when compared to TransCanada employees and industry insiders. I demonstrate this in the next three subsections by sharing the archetypal experiences of three actors that were part of my axial coding cohort. In all cases, the testimonies began with a subject matter testimony, but were soon sidetracked by the processes that I capture with my three concepts. The environmental engineer John Stansbury who constitutes the scientist-turned-activist and was faced with *information asymmetry*; the boundary spanner Lara Skinner of Cornell University who faced a *countercoalition*; and the attorney and career activist Anthony Swift who was *questioned* about his *motives*.

7.1 Information Asymmetry: the Scientist Turned Activist

John Stansbury enters into the conflict over Keystone XL based on his expertise in risk assessment, which he built as a practitioner before joining the University of Nebraska-Lincoln as a professor. I briefly introduced this group in the Subsection Information asymmetry. Some time in July of 2011, he published an "Analysis of Worst-Case Spills From the Proposed Keystone XL Pipeline". In his analysis he stayed entirely in the realm of engineering and discussed shortcomings of the worst-case scenario analysis conducted by TransCanada. On the first day of the special session, Stansbury testified on the water pollution risk that Keystone XL posed for Nebraska and responded to 12 questions by the senators.

The biggest hurdle that Stansbury faced was the difficulty of accessing information for a proper risk assessment (see also subsection above on Information asymmetry). Rather than stating that the pipeline would not be safe, he resorted to stating his uncertainty: "*[H]ow can we possibly say that the science says that the aquifer will be safe? I haven't done the science yet.*" The state senators asked Stansbury twelve questions, but only one returned to the topic of his initial testimony. Three were short questions. The major topics of discussion was the countercoalition between TransCanada and the State Department with three questions and Stansbury's motives for testifying with five questions. In particular, Stansbury answered four questions regarding his relationship with Friends of the Earth, an environmental organization that had helped Stansbury distribute his report to the general public. The final line of questioning suggests that his uncertain initial testimony and the exchange had drawn the attention away from the topic of Stansbury's initial testimony, and shed some doubt on his expert status: "*Have you ever conducted a pipeline risk assessment?*"

While information asymmetry does not directly enforce silence on a topic, it deprives us of some of the insights we might have otherwise had. For observers, the effect can approach that of complete silence. Under conditions of information asymmetry, actors can at best make the case that there is uncertainty about statements by the other side of the debate. I are deprived of a definite statement that would warrant a subsequent debate and allow for analysis.

7.2 Countercoalition: the Boundary Spanner

Lara Skinner was the Associate Research Director of Cornell University's Global Labor Institute. The institute had created a critical report about the TransCanada's claims concerning the number of jobs to be created by Keystone XL. The report used four topics in its framing, but Skinner reduced the framing further by not raising the topics climate change and oil sands in Nebraska and focusing on jobs and energy economics instead. She claimed that constructing Keystone XL would get rid of a bottleneck in the US Midwest and raise prices in the area by 10-20 cents per gallon. Skinner was asked a total of 99 questions, 37 of which were short or yes/no questions. Skinner was afforded 22 opportunities to talk on the topic of her testimony through follow-up questions.

Pushback emerged when one senator asked Skinner about her institute's affiliations with labor unions:

> SENATOR S.: Okay. And are any of [the union] representatives that you've spoken with, are they located here in Nebraska?
> LARA S.: Those four organizations, to the best of my knowledge, all have members in the states that the pipeline route runs through. But I would want to check on that before saying that confidently.
> SENATOR S: Because we've had lengthy testimonies and contact and information provided to us by a number of the labor organizations in Nebraska that seem quite knowledgeable of what impact this pipeline is going to have on their union members in Nebraska.

The remainder of the questions focused on Skinner's motivation for testifying (29), and compared the institute's network to the countercoalition between TransCanada and labor unions in Nebraska (9). She was afforded an opportunity to speak, and was not dismissed early or steered away from her area of expertise. However, the exchange honed in on her connections, and the state senators compared her network with the countercoalition between TransCanada and labor unions. The questioning of Skinner's motives, and the comparison with the countercoalition did not directly attack her initial testimony on the topic of job numbers–instead the senators obtained information that may in the eyes of some observers make her initial testimony appear in another light.

While expert status usually confers a great bit of credibility, when opposing coalitions emerge audiences can not rely on expert status as the only cue. Unless they were experts in the field, too, audiences would have to weigh the expert status of two or more sides against each other. They would have to determine whether Cornell is more credible on labor issues or local labor unions. In any case, the presence of the countercoalition can shift the conversation from one of subject matters to one of relative expertise.

7.3 Questioning Motives: the Career Activist

Anthony Swift was an attorney with the Natural Resources Defense Council. I already covered the key line of questioning in the subsection on questioning motives. On the Second Day of the testimony, Swift testifies to the Nebraska Legislature regarding the risk of a pipeline spill. The senators subsequently ask him 47 questions. Swift is asked 13 follow-up questions related to his initial testimony, all by the same senator, as well as four short or rhetorical questions. The subject matter questions were overshadowed by a barrage of 30 questions that concerned Swift's motives for testifying. Among the most striking were two question that implicated Swift for

traveling to Nebraska, including "*so what business do you have in Nebraska?*". Swift was also asked ten leading questions on the energy policy of his employee, including loaded questions such as: "*Does [NRDC] support further development of fossil fuels in the United States?*" Other questions with a critical undertone concern Swift's organizational connections (8x), NRDC's funding (2x), and Swifts professional qualifications.

Swift was asked at first a relatively high number of follow-up questions, but the line of questioning he was subjected to after was the most aggressive across all expert testimonies. His subsequent testimony proves this point–Swift returns to testify the next day and is immediately dismissed without follow-up question after his opening testimony. It is the only instance of an expert being immediately dismissed, indicating that the senators' questioning of his motives did successfully undermine Swift's testimony.

Questioning motives pre-empts conversation on the topic raised by a focal actor, as the conversation no longer hinges on the validity of an argument on the topic. An focal actor could be knowledgeable in topics A and B and choose to talk about topic B despite caring more about topic A. I would still want to take the focal actor's input on topic B into consideration. The questioning of motives implies that actors believe there will be bad faith arguments or outright falsehoods at play when a focal actor moves from topic A to topic B. The obvious solution would be to evaluate the validity of the argument rather than the motives of the actor. However, the actors in the specific context are laypeople who lack the means necessary to evaluate the arguments made by the various parties. In contrast, questioning motives is both fast and easy. Since questioning motives does not hinge on the validity of the argument, it is doubtful that questioning motives has brought the actors in Nebraska any closer to learning about the true state

of the world. Rather, questioning motives seems to have played into their own biases, and the line between questioning motives and direct ad hominem attacks is blurry at best.

7.4 Comparing Proponents and Opponents

To advocate for the project, TransCanada's Vice President in charge of the Keystone division participated in the hearings in Nebraska. The character of his examination drastically differed from that of the pipeline opponents. This paragraph covers the Vice Presidents first testimony during the Special Session on November 7, 2011. The questions were not focusing on one topic and, for instance, probing TransCanada's stance for contradictions. Rather, the state senators' 44 longer questions provided the Vice President with an opportunity to lay out at length TransCanada's stance on a range of issues, including the land acquisition process with five questions, the State Department's permitting process with five questions, and energy economics with seven questions. There were two questions regarding TransCanada's motivation concerning the companies' lobbying efforts in Nebraska, but they were not as aggressive, and senators did not follow up as they did with the pipeline opponents. At five points, individual senators contrasted TransCanada's stance and that of landowners who had testified before. These questions could be categorized as regarding countercoalitions, but the character of the questions was fundamentally different–they were more akin to curveballs: "*[O]ne of the testifiers said that most citizens think it's like all other oil or crude; it is not this crude. I'm using crude. This crude doesn't rise to a surface, it sinks. Untrue?*"

While generally other supporters of the pipeline were treated similarly, one outlier was a representative of Americans for Prosperity. Americans for Prosperity is a conservative think tank that has spent at least a 9-figure amounts to support pro-fossil fuel politician engages in climate denial (Mann & Toles, 2016). The representative used his initial testimony to attack opponents of

Keystone XL, claiming that environmental "*propagandists … had succeeded in in entrenching a fantasy as fact in the minds of thousands of Nebraskans*". He was asked only two questions by one senator who pushed back to protect the landowners along the pipeline route:

> *There are some people, there are a number of people that honestly feel like a risk to the aquifer, however small that might be, is not worth taking. And I think those are genuine feelings, and I may not agree with it but I can honor their convictions on that. On the other hand, there are other people that use harm to the aquifer as a crutch because there's ulterior motives that they want to stop the pipeline and they want to stop fossil fuels and they want to stop coal-fired generation.*

The comment may be the most suitable to demonstrate the fault lines on the local level. The senator sanctions testimony that raises concern about local environmental issues, but not direct or indirect attacks on the fossil fuels industry. In exchange for following these rules–or because their genuine convictions align with this expectations–landowners along the pipeline route are not a legitimate goal for attacks. The other pipeline proponents, who did not violate this unspoken rule fared much better, and did not experience pushback to the degree that pipeline opponents did.

7.5 Conclusion

The preceding Section 6 illustrated how elusive social processes shape discourse topics. This section turns its attention to experts, whom we might assume are less prone to obstacles. Certainly, if either I or Dr. Reader were to testify on our area of expertise, we could expect not only the audience's undivided attention, but also their receptivity to external input, *or could we?* While experts in Nebraska do receive more questions, and therefore time to discuss the same topic compared to other groups (see Figure 8),[20] the social context remains significant. Once experts step into a shared discursive space, they, like non-expert witnesses, no longer have sole control over the message. The primary challenge for experts is not to construct the perfect initial

[20] That is, following the initial framing stage, as even the experts in my context do not broach the subject of climate change.

framing, but to guide *any* suitable framing through an interactive process where their topic, *and they themselves*, are scrutinized and challenged by—sometimes hostile—counterparts.

This section examines three outliers whose testimonies are subject to information asymmetry, face countercoalitions, or are questioned about their motives. These dynamics do not influence the choice of topics, but they become relevant in subsequent stages. They affect the experts' standing in the interaction order and how their statements are interpreted by the audience. Despite dedicating considerable time and effort to researching Keystone XL spill scenarios, Stansbury was hampered by the difficulty of accessing information and was unable to make definitive statements about the risks. Meanwhile, Swift could not make definitive statements, and his testimony was marked by personal attacks from the senators and their dismissal of him on the second day immediately after his initial testimony. In summary, my analysis of outliers reveals a silent-adjacent phenomenon. In dynamic interactions, experts also encounter constraints. Public testimony never occurs under ideal conditions, where an expert simply shares pre-existing information in a context. Instead, experts also need to collect information and shield themselves from potential attacks. While experts face fewer constraints in their choice of topics, they are influenced by the social context.

8 DISCUSSION AND CONCLUSION

> Now I have to, first of all, identify myself properly with no reservations; I have no secrets. I'm a hardliner. I'm not just a tree hugger, I'm a globe hugger. And when you've seen the recent articles like in the Journal Star about the global warming situation having exceeded worst-case scenarios, surprising even the 98 percent expert scientists in going beyond what their horrible predictions were, where do we go from here?
>
> —Excerpt of testimony by Alexandra K. on Keystone XL. There were no follow-up questions.

This thesis introduces a new perspective on the gap between omnipresent climate rhetoric and lackluster climate action. The existing literature focuses on gaps that exist between discourse and implementation, resulting, for instance, from the translation process (see Section 2.1), from ceremonial conformity (see Section 2.2), from greenwashing (see Section 2.3), or as brought about by an institutional field that shuts down any proposed legislation that goes against the fossil fuel industry's interests (see Section 2.4). In contrast, my thesis highlights an instance of decoupling within discourse, during the conflict over Keystone XL. At the local level, actors frequently opted not to incorporate the topic of climate change or oil sands into their framing, and when they did, were courteously dismissed or steered away from this topic. Those who chose not to bring up the subject and employed other framing were acknowledged, but they encountered different obstacles: information asymmetry, the presence of countercoalitions, and most importantly their motives were questioned on the suspicion of harboring a climate agenda (see Section 7).

The remainder of this section is organized as follows. First, I provide a brief epilogue of the events that transpired after the earliest moment of change (Lounsbury & Crumley, 2007) that changed the trajectory of Keystone XL and eventually led to the project's defeat. In this part, I detail how the events discussed in this thesis snowballed into the federal government's negative

permit decision. Subsequently, I discuss how my work contributes to the existing literature and highlight the points where my approach deviates. Finally, in the conclusion, I turn to the quote above and to the legacy of Keystone XL's defeat to reflect on whether or not the approach of sidestepping an uncomfortable topic such as climate change in pursuit of "small wins" (Weick, 1984) is a model to emulate.

8.1 Postscript

In the context of discourse around deeply entrenched institutions such as fossil fuel consumption and infrastructure, the "battlefield" Nebraska presents an intriguing puzzle. On one hand, the mobilization of actors against Keystone XL in Nebraska marked a pivotal shift that resulted in TransCanada losing momentum and ultimately failing to realize the project. On the other hand, the very issue that Keystone XL symbolized in the national discourse—climate action and a halt to fossil fuel exploitation—barely surfaced at the local level. How is it possible that the Nebraska arena was seen as crucial to the success of the movement, yet remained separate from it?

8.1.1 Interdependence of Micro and Macro

Local leaders sought to maintain a separation between their discourse at the local level and that on the national stage. One senator depicted the struggle as follows:

> There's another set of lobbyists that work very hard to defeat the pipeline. They stirred people up, in my opinion, with half-truths and some outright lies. They created a very strange partnership. They influenced independent, strong-minded ranchers who aren't against pipelines. They're not against the development of fossil fuels. They're not against further development of coal-fired electrical generation. They're not opposed to drilling for oil in Nebraska. They're not opposed to nuclear energy. But they influenced these people who love the land to join with them and join with them with those who are against all of these things, those that are against pipelines. They're against development of fossil fuels. They're against further development of coal-fired electrical generation. They're against drilling for oil in Nebraska. They are against nuclear energy. They want most energy to come from wind and solar, and they don't care what it costs. I

> think this is a dangerous view. And I strongly believe that we as a state cannot go there.

The senator portrays the events that transpired at a macro level as an attempt to sabotage the pipeline project by any means necessary, while asserting that local residents along the pipeline route had no intention of participating in this larger scheme. In the following months, the Nebraska Legislature spearheaded an effort to bring the pipeline project back on track with a new pipeline route that would address some of the complaints raised in the state. As a result, TransCanada executives estimated the pipeline had a fifty-fifty chance of approval by the current federal administration, and an even better chance of success if a leadership change occurred in the forthcoming presidential election (McConaghy, 2017, p. 51). In the end, however, the fate of Keystone XL hinged on a handful of landowners who continued to fight the new pipeline route through Nebraska, again not on grounds of climate change (see Section 8.1.2). Instead, they fought on the grounds of eminent domain, arguing that TransCanada lacked the legal authority to build a pipeline across their property. The project never fully recovered from the setback in Nebraska, leading TransCanada to ultimately abandon the project in 2021.

Preeminent American environmentalist and recipient of the Gandhi Peace Award, Bill McKibben, celebrated Keystone XL as a landmark climate victory:

> The deepest thanks, however, go to you: to indigenous peoples who began the fight, to the folks in Nebraska who rallied so fiercely, to the scientists who explained the stakes, to the environmental groups who joined with passionate common purpose, to the campuses that lit up with activity, to the faith leaders that raised a moral cry, to the labor leaders who recognized where our economic future lies, to the Occupy movement that helped galvanize revulsion at insider dealing, and most of all to the people in every state and province who built the movement that made this decision inevitable. (McKibben, 2011)

His quote reflects the macro lens through which the Keystone XL project appears constitutive of the larger socio-cultural struggle over climate change that underlies the national discourse (cf. Lounsbury & Wang, 2020). However, Nebraska only appears in the margins.

8.1.2 Subsequent Events

At the conclusion of the Nebraska Legislature's special session on Keystone XL stood a compromise that was followed by two Pyrrhic victories, which I will describe in the remainder of this subsection. Four parties were part of the compromise. Environmental grassroots achieved a partial victory as TransCanada pledged to reroute the pipeline and avoid the most environmentally sensitive parts of the Nebraska Sandhills and the Ogallala aquifer. This action also prevented the imminent issuance of a national permit by the State Department, as the department first had to study the new route, which would take more than a year. The new regulations put in place by the Nebraska Legislature filled the legal vacuum that had allowed TransCanada to exercise eminent domain at will. A state-level permitting process was now in place. Thus, initially it appeared as though the governor and senators such as C. or S. had managed to address complaints from their constituents about TransCanada's use of eminent domain, without precluding the construction of Keystone XL. Although TransCanada had suffered a partial defeat in rerouting the pipeline, the new status quo represented significant progress on another front. On November 10, 2011, the State Department announced in a media note that the conflict in Nebraska was the primary obstacle to the Presidential Permit for Keystone XL:

> State law primarily governs routes for interstate petroleum pipelines; however, Nebraska currently has no such law or regulatory framework authorizing state or local authorities to determine where a pipeline goes. Taken together with the national concern about the pipeline's route, the Department has determined it is necessary to examine in-depth alternative routes that would avoid the Sand Hills

in Nebraska in order to move forward with a National Interest Determination for the Presidential Permit.

The amended siting act in Nebraska would resolve both of these issues. Nebraska would finance a study that would identify a route for Keystone XL, and TransCanada could assert that the state had approved the pipeline without undergoing the full permitting process that the act entailed.

The compromise proved to be a Pyrrhic victory for environmental grassroots and for the senators who had originally authored the bill. In early 2012, TransCanada had to resubmit its pipeline application for technical reasons.[21] The re-submission meant that the siting act would now apply to Keystone XL, and the exception would no longer apply. This could have been a victory for the coalition between landowners, grassroots, and senators: the originally intended permitting process could take place without any of the legal concerns coming into play. However, the majority in the Nebraska Legislature reneged on the coalition. By April 11, 2012, the Nebraska Legislature had passed an amended siting act to keep open the streamlined pathway toward a permit in Nebraska for Keystone XL. Senator L.: "The whole purpose of the amendment was to keep with the spirit of what was negotiated during the special session." The coalition in the Nebraska Legislature was no more, as the key actors behind the special session bill, H. and D. along with three other senators, voted against the bill. H. stated on April 5, 2012, "I'm going to vote against LB1161. I still believe TransCanada has been a victim of their own machinations and we've done our part. We did our part in November."

The purpose-made bill turned into a Pyrrhic victory for TransCanada. On February 17, 2012, landowner Thompson shared his thoughts about the Nebraska Legislature's efforts to write

[21] Specifically, the US Congress passed a law requiring the State Department to make a permit decision within 60 days. The State Department then denied the permit application, stating it did not have sufficient time to reach a positive decision. However, the note also stated, "The Department's denial of the permit application does not preclude any subsequent permit application or applications for similar projects" (DOS, 2012).

a new bill: “I think we’re getting on a very slippery slope when our lawmakers start reshaping and changing our existing laws just for the benefit of one company.” Ironically, the opponents of Keystone XL were now using TransCanada’s legal arguments against the company. After TransCanada had resubmitted its application on May 5, three landowners brought on their premeditated judicial trench warfare” (Olson, 2011). On May 23, Domina Law Group filed on their behalf “Thompson v. Heineman,” which would see Keystone XL halted in courts for three years. The entire Keystone XL process was halted by the stubborn persistence of three landowners, who personally had nothing to gain from the lawsuit—the new pipeline route would not even cross their property.

The major challenges brought against Keystone XL in Nebraska marked the beginning of the end for Keystone XL. The sluggish process in Nebraska demonstrated that pipeline operators could no longer take for granted their ability to quickly complete a megaproject such as Keystone XL in a short time frame. Environmental organizations felt emboldened and targeted subsequent mega projects such as the Dakota Access Pipeline (see Section 8.3). The Keystone XL project never fully recovered and continued on a zig-zag trajectory. In 2015, the Keystone XL permit application was denied. After the 2016 presidential election, TransCanada resubmitted its permit application in 2017. The permit was granted, but construction was halted in court as the new permit was flawed. In 2019, the President revoked the old permit and issued a new, corrected permit. Construction finally began in 2020, but less than 10% of the pipeline was ever built. In 2021, the incoming President canceled the new permit on his first day in office. The fossil fuel industry viewed the permit denial as a significant defeat. World Oil commented that the expected resistance and delays would threaten the viability of any future project: “Keystone

XL shutdown may signal the end of major U.S. oil infrastructure" (Freitas, Adams-Heard, & Gilmer, 2021).

8.2 Contributions

The gap between the national and local discourse serves an important purpose for pipeline opponents. Keystone XL opponents urgently needed to win some time, but the Nebraska Legislature was not welcoming arguments around climate change and pollution from oil sands. The decoupling anti-Keystone XL rhetoric from the climate change topic made possible a critical victory at the right time. More generally, decoupling within discourse can be a way for actors to bracket some topics and allow for movement on an issue where otherwise there would be a deadlock.

My study indicates that paradoxically, important action on a topic can be where the topic is not present. This has some interesting implications for research. The conventional approach would be to identify the topic of interest and identify how discourse on the topic unfolds, that is, how new accounts on the topic develop over time. The permitting process of Keystone XL cannot be analyzed in this fashion. To understand the silence on climate change on the local level, I instead analyzed all topics that were brought to bear on the project. I also developed a mixed-method approach to studying these forms of disconnect, which can be applied to other contexts. My empirical approach takes advantage of the unique interaction order in Nebraska, but the same methodology could be used to explore how topics appear or disappear in other interactions, for instance in the media or in interactions between activists and firms (cf. Reinecke & Ansari, 2021).

The role of framing and interaction in the defeat of a project that had been taken for granted also institutional processes also has interesting implications for research on taken-for-

grantedness (Steele, 2021). The actors in Nebraska hold certain positive assumptions around the Keystone XL project, and the fossil fuel industry more generally. To "blend in" and undermine the project, one possible strategy is to *not* openly attack these assumptions, and instead identify a wedge within the proponents' epistemology. That strategy could fail if one's original intention was to shine through — the resulting frame break would bring the original topic of concern to the fore and could ruin the ploy by revealing the true lines of conflict (Goffman, 1974). I therefore suggest that taken-for-grantedness can be performative. In other words, actors pretend to accept a position on a topic to bracket it out and allow for movement on an intermediate goal. The spiel was successful, as one senator let's it shine through: "*[T]hen this whole issue has created strange bedfellows … conservative ranchers working with environmentalists, they're conservationists, but not necessarily environ…so it's created strange tensions.*"

8.3 Conclusion

This thesis examined the peculiar confluence of a lively discourse on climate change and silence at a key moment (see Section 3.3). One might expect that complete silence during the discourse concerning climate change (see Section 2) would result in no notable changes for the movement. However, I present a case study that exhibits both a striking silence on the topic of climate change and an incongruent outcome—the refusal of the Keystone XL mega pipeline. That outcome was one environmental organizations had been working toward and celebrated as a landmark victory for the climate. I use this context to illustrate how interactions can contribute to silence.

My mixed-methods analysis employs topic modeling to reveal shifts in topics when actors do not interact at eye level. It is rare for two actors to meet on completely equal terms. An actor, sensing that a topic might not be well-received and in an attempt to appeal to others, may

adopt a defensive stance and exclude that topic from their framing. On the other hand, the interaction order (Goffman, 1983) might permit an actor or a group of actors to exert a disproportionate degree of control over the discourse topics (see also Section 6.2). I use topic modeling to identify these discourse topics. The topic model enables us to observe the disparity in the reception of various topics. Actors who introduce certain topics are more likely to be dismissed, effectively eliminating their concerns from the ongoing discourse. I also identify steering as a significant mechanism by which a controlling actor can guide the direction of the discourse by encouraging other actors to discuss specific topics.

My findings about how interactions and social orders influence the content of discourse suggest a need to reassess our assumptions about discourse. The conventional model of discourse is rather linear. An actor observes something, shares that observation with others who may or may not disseminate what they have heard, and then the collective social field may or may not change (e.g., Maguire & Hardy, 2009). My thesis, however, suggests a less equitable view of discourse. The phenomenon of silence and silencing raises two questions: *Which* topics have been removed from discourse, and *who* is not being heard?

8.3.1 Discourse As an Inequitable Process

Discourse is an inequitable process over which some actors exert more control than others. These actors serve as gatekeepers, controlling either access to the discourse or its agenda. They are neither superheroes nor villains—in the simplest model, their choices merely reflect their own biases (cf. Druckman & McGrath, 2019). For example, in Section 6.2, we observed Senator C. pushing back against pro-environmental themes. His attempts were blatant and therefore easy to circumvent. It is not difficult to gauge the prevailing sentiment in the American Midwest and to determine the appropriate response to the question, "*Are you against the further*

development of fossil fuels?" None of the participants outright failed this "character test," especially after Senator C. attributed "pure reasons" to Tim T. when he claimed to be uncertain about climate change.

Discourses are not independent of their participants. The content of a discourse reflects participants interest and debates on various topics are interconnected. This assertion can be illustrated with an extreme example: The discourse on abortion and the discourse on climate action may have little to no overlap in content, but if you understand the trajectory of one discourse in the United States, you can likely infer the trajectory of the other. These dynamics of discourse suggest an additional level of analysis which a linear model of discourse does not capture. In a dynamic model, the actors who can exert control over the boundaries of discourse also influence common practices within fields and have tangible impacts on our social and physical environment (cf. Foucault, 1972; Leibel et al., 2018). I have attempted to demonstrate this principle using the fossil fuel industry as an example, but I am not the first to do so. Scholars from other disciplines, such as political ecologists, have been advocating this perspective for years (e.g., Adger, Benjaminsen, Brown, & Svarstad, 2001; Shapiro-Garza, 2013; Robbins, 2012). At the national level, *of course* prominent figures like environmentalist Bill McKibben and climate scientist James Hansen enjoy the liberty to express their views, given their established audiences. However, at the local level, especially in rural communities, such as Nebraska which prides itself on its "stubbornness," it becomes essential to tailor one's message to meet the audience's expectations and beliefs.

While it is interesting to observe how dynamics between actors and control over discourse shape its contents, defensive framing may be the most impactful and elusive of my mechanisms. As Nebraskans strove to shape the state's discourse on Keystone XL, they found

themselves influenced by the very audience they sought to persuade. Rather than saying what they think, actors appealed to the senators who were in control of the local discourse at the time. By fine-tuning their message, the actors on the ground allowed the hypothetical audience in their minds to influence over what they would say. I opened this section with a quote from Alexandra K., a steadfast and dogmatic environmentalist—she seems not to have fine-tuned her message. The lack of any reaction suggests that she, in turn, has not managed to influence others. Her self-description as a "tree hugger," an environmentalist with strong values often perceived as eccentric or extreme, indicates that she had anticipated this lack of response.

The dynamics between those who hold some sway over discourse and the appellants attempting to sway others are reflected in the contents of any discourse, and in any text that forms the basis for research. These dynamics have a twofold impact. On one hand, they constitute an essential part of orderly or "civilized" discourse. By adjusting our speech in real-time, we facilitate smooth, conflict-avoiding conversations (Steele, 2021; Harmon et al., 2015). On the other hand, strategic maneuvers and formal or informal limitations on discourse topics can lead to a selective silence on certain subjects (see Section 2). In the next subsection, I will lay out why in my context of interest, this silence-inducing dynamic has led to a troublesome trajectory—we are gradually entering a climate crisis often without discussing it when we contribute to it.

8.3.2 Hegemony and Resonance—Farmers Resistance vs. Indigenous Resistance

The dispute over Keystone XL was ultimately celebrated as a climate victory, but this pipeline is an outlier. Keystone XL is the only pipeline to have its permit denied by the United States government (see Table 2). The discourse surrounding other pipelines has also taken discursive turns. Environmental activists have attacked many pipeline projects on climate

grounds, while focusing primarily on other issues. In those cases fossil fuel companies have emerged victorious for the other projects. Two notable comparison points are the Dakota Access Pipeline, owned by Energy Transfer Partners and, like Keystone XL, crossing the United States' Great Plains; and Coastal GasLink in British Columbia, Canada. Both pipeline projects briefly became flashpoints in their respective countries' national discourse, but they did engage a different crowd than Keystone XL did in the United States' Midwest. Instead, they drew a cross-section of environmental and indigenous activists.[22] Each pipeline became a focus of activism for its respective country's indigenous movement, but in hindsight, it seems these movements stood little chance. While individual activists may have been driven by climate change concerns to join the movement, indigenous self-determination emerged as a dominant theme in both cases. Both movements achieved significant symbolic, albeit partial, victories. In Canada, the movement temporarily shut down a substantial portion of the national freight train network in 2020, and members of the Wet'suwet'en First Nation experimented with exercising governmental authority in their traditional territory (see also Figure 9 (a)). In the United States, the protest camp against the Dakota Access Pipeline was often described as the largest gathering of indigenous Americans in over a century, although this claim is based solely on anecdotal evidence (see also Figure 9 (b)). This subsection will briefly introduce two counterpoints which bring to the fore the lesson to be learned from Keystone XL.

The indigenous anti-pipeline movement presents a stark contrast to the farmer and landowner-led opposition against Keystone XL. The indigenous community is notably less integrated with their surrounding jurisdictions, often maintaining a distinct identity (e.g., Estes, 2019). In the case of Keystone XL, we witnessed the triumph of in-group members—farmers and landowners who connected with state lawmakers based on a shared identity—successfully

[22] The movement against the Dakota Access Pipeline also attracted over a thousand combat veterans from the Afghanistan and Iraq wars.

persuading their states to act, thereby overshadowing a pipeline company and its allies. Conversely, the indigenous anti-pipeline movement encountered a less than welcoming reception. Both the movements in the United States and Canada were suppressed in a manner echoing each country's imperial history.

In Canada, the quelling of the protest evoked memories of the country's genocidal residential school system (Sterritt, 2019), a legacy with which the nation was grappling in the national discourse around the same time. The residential school system involved the Royal Canadian Mounted Police (RCMP) forcibly removing children from their indigenous parents to place them in boarding schools, often hundreds of kilometers away, in less remote locations where countless children perished from preventable diseases. To clear the path for Coastal GasLink, the RCMP dismantled an activist camp on remote, unceded indigenous land and arrested 30 individuals at gunpoint (see Figure 9 (c)), including two journalists. The police detained them over the weekend, filing only civil charges, before releasing the detainees in Prince George, over 300 kilometers away. The arrests were orchestrated by the police force's Community–Industry Response Group, a specialized unit that focuses on crimes and protests that hinder mining and drilling, and elicited a rebuke from the United Nation's Committee on the Elimination of Racial Discrimination. As of 2022, the Community–Industry Response Group had spent $25 Million CAD solely to police the Coastal GasLink project. As of 2023, a court case against Wet'suwet'en Chief Dtsa'hyl, who initiated the the seizure of company equipment under First Nation jurisdiction, is still pending—his position: "We're not recognizing [Coastal GasLink's legal action]. We're not part of [British Columbia]. We're not part of Canada."

In the United States, parallels are often drawn by indigenous observers between the Dakota Access Pipeline conflict and previous wars between the United States army and the

Lakota or other indigenous peoples of the Great Plains. Specifically, Estes (2019) highlights similarities to Sitting Bull, who was buried on the Standing Rock reservation territory, the same location where anti–Dakota Access Pipeline activists set up their camp. Sitting Bull was known for his victory against European-American expansion in the 1876 Battle of the Little Bighorn. Initially, the protest camp exuded an atmosphere of indigenous revival, until a coalition of local and state law enforcement, along with private security forces, started to clear the camp during the winter of 2016–2017. The conflict's paramilitary nature came into focus when journalists obtained internal documents revealing that TigerSwan, the pipeline company's security contractor, had likened the protesters to jihadis. Composed of Afghanistan and Iraq war veterans and contractors, TigerSwan is a private security company that was gathering intelligence both undercover on-site online, operating drones, and compiling weekly intelligence reports about the camp. Throughout the weeks-long standoff between the two camps, police utilized tear gas, pepper spray, and rubber bullets. Some protesters sustained bite wounds from the private security forces' dogs. The escalation peaked in November 2016 when police used a water cannon to douse protesters in water at night in freezing temperatures (see Figure 9 (d)). The national guard later deployed a helicopter, military-style vehicles, and rifles to clear the camp (Estes, 2019).

Figure 9: Counterpoint—Indigenous Protests Against Pipelines

a — Haudenosaunee (Iroquois) allies executing a Wet'suwet'en First Nation eviction order (Costal GasLink), b — Standing Rock protest camp (Dakota Access Pipeline), c — Royal Canadian Mounted Police arrest protesters and two journalists at gunpoint (Costal GasLink), d — Separated by barbed wire, protesters doused by water cannon at freezing temperatures (Dakota Access Pipeline)

The disparity is striking between local issues impacting Keystone XL and those affecting Coastal GasLink or Dakota Access Pipeline. The unsuccessful indigenous resistance against pipelines underscores the distinction between local issues and local dynamics. The opposition to Keystone XL prevailed not only due to the issues presented but also because of the dynamics between the individuals who presented them and those to whom they were appealing. Farmers and landowners played their issues off of the state lawmakers, who held the farmers and landowners in high regard. Conversely, indigenous peoples remain on the periphery of North American, European-American-dominated society. The indigenous resistance mobilized substantial forces, but due to their relative isolation and the lack of sympathy from other local actors, the indigenous movement ultimately achieved little success.

8.3.3 Local Issues and Local Dynamics

This thesis concludes on a somewhat ambivalent note. My thesis has illuminated the unexpected triumph of local actors against a fossil fuel project that seemed inevitable. The question that arises now is whether other actors can hope to replicate this success? On the climate front, three factors indicate substantial obstacles. The history of similar pipeline projects (see Table 2) and the two projects I just highlighted as counterpoints in Section 8.3.2 reveal numerous conflicts that were hard-fought but ultimately ended in victories for the fossil fuel industry. Furthermore, the overall outlook is bleak, as the World Meteorological Organization forecasts that we will start surpassing the elusive 1.5°C global warming goal within the next five years (WMO, 2023; via "Rough Years Ahead," 2023). Individual climate victories can be misleading if the overall picture continues to be grim.

Indeed, under the appropriate conditions, David can muster the strength to topple Goliath if the conditions are just right. My analysis does not imply a static world, nor does my model

make unrealistic assumptions about “hyper-muscular” entrepreneurs who can single-handedly transform a field (Suddaby et al., 2017). My examination of Keystone XL indicates that local dynamics could pave the way for path-breaking victories. To tread this path, actors must be attuned to local dynamics—provided these local opportunities are available to them. However, considering that Keystone XL has not been the small win that the climate movement could expand on to eventually breach the dam (cf. Weick, 1984), one might question whether Alexandra K., quoted at the beginning of this section, should not still serve as a Quixotic ideal for anyone challenging an institution (cf. Zbaracki, Watkiss, McAlpine, & Barg, 2021). True, her participation in the discourse on Keystone XL was ultimately inconsequential, and she could be characterized as delusional. But she voiced her opinion and tried to get to the core of the issue, thus taking a shot at advocating for her ultimate, overarching goal—no matter how improbable her attempt to win over Midwesterners to environmentalism might appear. Her voice was one of the few recorded to indicate that Keystone XL, on the local level also, was an issue of climate change. Perhaps, in light of the unfulfilled legacy of Keystone XL as a stepping stone victory, this Quixotic ideal represents another pathway worth considering.

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Education

- PhD Business Administration – Sustainability at Ivey Business School, Western University (2017–2023)
- Master of Management Science at Peking University HSBC Business School (2015–2017)
- B.A. Chinese Studies/East Asian Studies at Free University of Berlin (2009–2014)

Publications

- Montgomery, A. W., Lyon, T. P., & Barg, J. (2023). No End in Sight? A Greenwash Review and Research Agenda. *Organization & Environment*, 36. https://doi.org/10.1177/10860266231168905
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Awards and Scholarships

- Chisholm Graduate Scholarship in Sustainability, 2020
- 2018 Academy of Management Annual Meeting – ONE Division Best Reviewer Award
- Deutscher Akademischer Austauschdienst Scholarship, 2015