MEDIA FRAMING OF UNCONVENTIONAL FOSSIL FUELS: THE ABSENCE OF CLIMATE DIALOGUE IN CANADA’S NORTHERN GATEWAY PROJECT

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ABSTRACT
Canada’s Northern Gateway Project is a controversial pipeline proposal that would carry unrefined bitumen from the Alberta oil sands to the coast of British Columbia for international export. We analyzed print media for coverage of the Northern Gateway Project in six Canadian newspapers, including 2097 articles published from 2006 to 2014, inclusively. The objectives were threefold: 1) to characterize media framing of the project using a risk/benefit framework; 2) to identify regional differences in framing between the two affected provinces; and 3) to investigate the framing of environmental risk. Our findings demonstrate that public discourse surrounding the project is framed as a trade-off between economic benefit and environmental risk, which is fairly typical for energy projects in North America. Despite a strongly regional distribution of risks and benefits (where Alberta would experience most of the economic benefits and British Columbia would bear considerable environmental risk), we did not find substantial differences in framing between the two provinces. Finally we found that the environmental risk frame was presented predominately according to potential local impacts due to pipeline or tanker rupture. The global impacts of climate change were rarely mentioned (less than 5% of the articles), and thus climate change is largely missing from the media we explored.

Keywords: unconventional fossil fuels; oil sands; climate change; media analysis; energy project; climate policy

1. INTRODUCTION
This paper examines media framing of a proposed pipeline project in Canada: the Northern Gateway Pipeline. The Alberta oil sands represents the largest known crude bitumen reservoir in the world (1; 2). Oil sands production is argued to be heavily dependent on the ability to transport bitumen to markets (3; 4). Because existing pipelines are reaching capacity, proponents of oil sands development have proposed the construction of several new pipelines to better access international markets (5; 6). One such proposal is the Northern Gateway Pipeline (proposed by Enbridge Inc.), which would extend from northern Alberta to the coast of British Columbia providing marine access to Asian markets. The regulatory review process began in 2010 and ended in 2014 with the federal government’s conditional approval of the project. In 2016, the project was put on hold when Enbridge’s petition to have its permits extended was denied. The proposed project and its regulatory review process have been highly controversial in Canada.

Debate over the Northern Gateway Pipeline, other pipelines projects, and oil sands more generally are framed differently depending on the context and the source/speaker. As a result, varying degrees of emphasis are placed on the potential economic benefits; concerns about increased greenhouse gas emissions; risk to local air, land, and water resources (at extraction sites and along pipeline routes) (7-9); and the role of First Nations (10; 11). While much of the environmental debate has focused on local risks (e.g. oil spill impacts), there is potential for the issue to become a major front in the debate regarding increasing production of Alberta oil sands more generally. Where construction of new export infrastructure is framed by proponents as necessary for continued oil sands expansion, opposition to new
pipelines is a means to protest oils sands development and support for a more proactive climate change mitigation agenda (12).

From a climate change perspective, the issue of expanding the use of unconventional fossil fuels has obvious implications for a carbon-constrained world. The increased extraction, processing and distribution of unconventional fossil fuels present a particular important threat to climate mitigation efforts. The Intergovernmental Panel on Climate Change and other researchers have stated that to increase the probability of limiting global warming to 2 degrees Celsius or lower, only about 1000 Gt of CO₂ can be burned—an additional 500 Gt from current levels which is projected to be exceeded by 2040 even with existing and planned climate policies (13-15). Researchers estimate that the current economically viable reserves far exceed this “carbon budget” (2900 Gt CO₂) with 11,000 Gt of CO₂ in resources that could become viable in the future (16). To those concerned with threat of climate change, new pipeline infrastructure may be interpreted as an “emblematic issue” (17) representing the larger problem of society-wide inaction on climate change. This climate change framing has appeared in other pipeline controversies such as the vocal opposition to the Keystone XL pipeline by environmental organization in the United States (12).

The present study had three research objectives. The first was to characterize media framing of Canada’s Northern Gateway Pipeline using a risk/benefit framework. The second objective was to identify any regional differences in framing between the two affected provinces, Alberta and British Columbia. For this particular project, Alberta stands to gain economically while British Columbia will bear a disproportionate amount of the environmental risk. Moreover, a 2014 study by Axsen (18) found greater support for the project in Alberta even when controlling for demographics and individual values. As a result, our study was designed to examine whether there was a quantitative difference in how national and regional media framed the project. The final objective of the study was to investigate the role of environmental risk framing—particularly the role of climate change versus other environmental impacts.

We analyzed print media for coverage of the Northern Gateway Pipeline, specifically, 2097 articles published by six major Canadian newspapers between 2006 and 2014, inclusively. We found that the controversy was, as expected, framed predominately as an issue of economic benefit versus environment risk. Despite the regional distribution of risks and benefits, we did not find significant differences in framing between Alberta and British Columbia. In terms of environmental risk framing, climate change was only mentioned in 4.5% of the articles. Thus instead of framing the risk as global due to impact of climate change, environmental risk was presented as primarily local impacts due to terrestrial or aquatic bitumen spills or general environmental risk.

2. BACKGROUND: THE NORTHERN GATEWAY PIPELINE

Oil sands are large bitumen deposits that consist of crude bitumen, silica sand, clay, minerals, and water. Extraction from Alberta’s oil sands has increased significantly from 0.2 million barrels per day in 1990 to 1.9 million barrels per day in 2013 (19). Oil sands production is argued to be heavily dependent on the ability to transport bitumen to markets (3; 4). Because existing pipelines are reaching capacity, proponents of oil sands development have proposed the construction of several new pipelines to better access international markets (3; 6).
One such proposal is the Northern Gateway Pipeline that would extend from northern Alberta to the coast of British Columbia providing marine access to Asian markets. Proposed by Enbridge Inc., the project would include approximately 1170 km of twinned pipeline carrying on average 525,000 barrels per day of unrefined bitumen west for export and, in the opposite direction, 193,000 barrels per day of condensate. In addition, a marine terminal with two tanker berths and 19 tanks for bitumen and condensate would be built in Kitimat, British Columbia. The terminal would have the capacity to serve 220 ship calls per year.

The NGP proposal was first launched in 2005 and in 2006 the federal Minister of the Environment referred the project to a joint review panel between the National Energy Board, the regulatory body charged with overseeing pipeline construction, and the Canadian Environmental Assessment Agency. In May 2010, Northern Gateway Pipelines Partnership Limited (a division of Enbridge Inc.) formally filed a regulatory application under the joint review panel. This signaled the beginning of what would become a highly contested review process.

The project was strongly opposed by environmental organizations in British Columbia out of concern for the impacts of an oil spill in remote and potentially fragile ecosystems along the pipeline route or in the coastal waters of northern British Columbia (12). A number of First Nations also opposed the project based on the potential impact to their ancestral lands and claims that the consultation and decision-making process violated their territorial and treaty rights.

Opposition flooded the joint review panel’s public hearings, so much so that the review process was extended by a year. There were also issues with the terms of reference of the joint review panel particularly the fact that it did not officially account for the upstream greenhouse gas emissions from oil sands production even though the economic benefits of the same production were included in the project rationale. In addition, in the midst of the review process, the federal government made significant changes to the legislation governing the process. Among other things, the changes set a two year timeline for project review, limited the scope of the “environmental effects” considered, limited public participation, and allowed the federal cabinet to override the ruling of the joint review panel (20). Fuelling the controversy, in 2012 the Prime Minister and several cabinet ministers made negative public statements about opponents of the project (21). The provincial government of British Columbia also weighed into the debate formally opposing the project in the review process and issuing five conditions that would need to be met before it would support the project.

In December 2013, the joint review panel submitted its report to the federal government recommending approval provided 209 conditions were met. The panel concluded: “The potential adverse environmental outcomes are … outweighed by the potential societal and economic benefits” (22). In June 2014, the federal government formally granted conditional approval based on the joint review panel’s recommendations. In 2016, with the certificates due to expire at the end of the year, Enbridge filed for a three-year extension. At the time, the project was facing a multitude of legal challenges from eight First Nations, four environmental organizations, and one trade union. It had also failed to secure supply contracts that were necessary conditions to proceed with the project. In July 2016, the extension was denied meaning that for the project to go ahead, it would have to reinitiate the review process.
3. LITERATURE REVIEW: FRAMING ENERGY AND CLIMATE CHANGE IN THE MEDIA

Frames are a means through which media and other stakeholders selectively emphasize particular elements or interpretations of an issue (23; 24) in order to affect how individuals and groups understand unfamiliar and complex phenomena with reference to their own experiences and predispositions (25; 26). A rich body of literature exists regarding how framing of technologies, policies, science, and social issues can influence societal perceptions and decision-making processes (27).

One recurring frame within environmental discourses is the trade-off between the economy and the environment (28). The idea that environmental protection necessarily comes at the expense of economic wellbeing is a deeply embedded assumption perpetuated by such things as: environmental standards, educational curricula, engineering and operational practices, and international regimes (28). Media frames environmental issues to align with cultural and moral assumptions (23; 29) and research has shown that public attitudes toward environmental technologies are shaped by media frames (30). Thus, exploring how media frames energy issues can provide insight into public debate and the social acceptance of particular projects and technologies.

There are a number of studies documenting media coverage of energy issues and, in the past five years, this includes a growing number that examine unconventional fossil fuels. This literature reinforces that technology is “domesticated” differently in different countries (31); that political and geo-political contexts are important to media frames (32); and that the process of development may be as or more important than the technology itself (33). As a result caution is necessary when generalizing across technologies or regions.

At a high level however, analyses of unconventional fossil fuels have found media coverage maintains risk-benefit framing (34) which aligns with the assumption that there is inevitably a trade-off between economic benefits and environmental risks. A media analysis of Canadian bitumen production found that media coverage was predominately framed in economic terms and was less attentive to political, social, scientific, and other dimensions (35). Another study of natural gas fracking in Texas found that media consistently reproduced the pro-development frames used by proponents while there was much more variation in the use of opposition frames (36). The implication of these studies is that the economic benefits of unconventional fossil fuel development, like increased gross domestic product and job creation, may be more frequently and consistently cited in media than the environmental and social risks.

Despite the predominance of a risk-benefit framing with an emphasis on economic benefits, reframing public debate is possible. An analysis of unconventional gas drilling in the Marcellus Shale found that, in some cases, media can be used to reframe environmental issues. In this case, citizens and environmental organizations successfully reframed gas drilling in the Marcellus Shale to incorporate more discussion of environmental risk (37).

Common to many studies is a version of the environment versus economy frame. For instance in an analysis of news articles in the Calgary Herald newspaper, Gunster and Saurette (38) argue that coverage of the Alberta oil industry presents the industry as inept at corporate relations and unable to protect itself from a well-funded environmental critiques that originate outside the province. This particular framing of industry versus the environment then does further work by justifying government intervention in order to protect a vulnerable, local industry from outsiders. Thus, although the framing of economy versus
environment appears straightforward, it has important implications for public debate, public
policy, and the legitimacy of actors engaged in the policy debates.

However, the empirical data on media representation of unconventional fossil fuel
development in Canada remains sparse. Given the specificity of technology development and
media representation, the relative absence of Canadian case studies constitutes a gap in the
literature that this study aims to fill.

In contrast with the emerging literature on unconventional fossil fuels, there is a well-
established literature examining media representations of climate change. Within this
literature, there is agreement that climate change is particularly challenging issue to
effectively communicate due to characteristics such as its distant impacts and scientific
uncertainty (39). It has also been found that media tends to entangle scientific claims with
ideological standpoints (40) and climate change coverage is strongly connected to policy
developments and does not follow a ‘natural’ cycle (41).

In line with international research, studies of Canadian media have found that
coverage of climate change is typically portrayed as a national or global problem rather than
a local issue (42) and that it focuses on impacts and mitigation rather than adaptation (43).
More specific to Canada, a longitudinal study of national print media found that over time it
is becoming less nuanced and thematically narrower with “less attention...paid to issues of
causation, scientific claims, and potential impacts, while more attention is granted to how
climate change superficially intersects with everyday politicking and business issues” (44).
Finally, and of direct interest to our study, a comparison of media framing in the United
States, Canada, and international newspapers found that media in all regions were hesitant to
frame climate change in relation to oil reduction solutions (45).

In light of this literature we expect that media coverage of the Northern Gateway
Pipeline will be presented using the typical economic benefits versus environmental risks
frame. Although the climate change impacts of new pipeline infrastructure are a major
concern, the extent that it will be present in media coverage remains unclear. On one hand,
popular representations of the controversy over the Keystone XL pipeline suggest that new
pipeline infrastructure may be emerging as an “emblematic issue” (17) representing the larger
problem of society-wide inaction on climate change. On the other hand, the difficulty
communicating climate change and the reluctance to frame it in relation to oil reduction
strategies call into question the extent to which environmental risks will be framed in relation
to climate change.

4. CONCEPTUAL FRAMEWORK: ADAPTING THE SOCIO-POLITICAL
EVALUATION OF ENERGY DEPLOYMENT (SPEED) FRAMEWORK
We base our conceptual framework on the socio-political evaluation of energy deployment
(SPEED) framework (46). The SPEED framework was developed to guide research
exploring the interconnections among various actors and socio-political factors that can
influence the adoption of new energy technologies and infrastructure at the regional level,
including laws, regulations, institutions and policy actors, and perceptions of risk and benefits
(46). The framework draws from theories of transition management, risk perception, policy
analysis, and technology diffusion. It has been the basis for multiple studies in different
energy contexts, including the deployment of wind turbines (47; 48), carbon-capture and
storage (49; 50), and smart grids (51). The framework has been used with numerous methods,
including media analysis, to categorize the framing of energy projects according to technical
factors as well as institutional, regulatory, political, economic, and social/cultural factors. It has also been used to evaluate regional differences in discourse, policy approach, and response to energy technologies (52). For our purposes, the SPEED framework is particularly useful as an energy specific framework that is designed to evaluate regional differences. It allowed us to apply a risk/benefit framework and examine the regional differences between British Columbia, Alberta, and national news coverage. We use the basic categories of the SPEED framework as a starting point for our analysis modifying these categories to suit the context of this study. As explained further in the next section, we coded risk/benefit statements found in media coverage of the Northern Gateway Pipeline for the following frames: Economic, First Nations, Technological, Health & Safety, Socio-cultural, Political and Environmental. Several frames also included sub-categories relevant to our research objectives.

5. METHODS
This analysis examined newspaper coverage of the Northern Gateway Pipeline from six Canadian newspapers. We chose newspapers that represent the top circulating newspapers nationally (The Globe and Mail, The National Post) and in the two provinces directly impacted by the pipeline, Alberta (The Edmonton Journal, The Calgary Herald) and British Columbia (Vancouver Province, Vancouver Sun).

The database Factiva was used to retrieve the articles using the search term “northern gateway” occurring in the first 200 words of articles that were 300 words or greater. All newspaper articles appearing between January 1, 2006 and September 1, 2014 were collected. The 2006 start date was chosen to cover the entire range of project from its early development through to its conditional approval in 2014. All articles collected were reviewed and classed into three categories: category A articles were substantively about the project, category B articles included a specific discussion about the project, and category C articles only mentioned the project or the search terms in passing. Articles in the category C were discarded from the sample leaving 2097 articles with the following distribution across newspapers:

<table>
<thead>
<tr>
<th>Newspaper</th>
<th>Number of articles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vancouver Province</td>
<td>155</td>
</tr>
<tr>
<td>Vancouver Sun</td>
<td>445</td>
</tr>
<tr>
<td>Calgary Herald</td>
<td>477</td>
</tr>
<tr>
<td>Edmonton Journal</td>
<td>394</td>
</tr>
<tr>
<td>The Globe and Mail</td>
<td>372</td>
</tr>
<tr>
<td>National Post</td>
<td>254</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2097</strong></td>
</tr>
</tbody>
</table>

All articles were coded using NVivo 10 qualitative analysis software. One author coded a subset of articles developing and testing a codebook with descriptive memos for each code. A team of six coders then used the established codebook to code the entire sample. Three calibration exercises were completed with a sample of 100 articles to ensure a minimum of 70 percent agreement between coders. Each calibration involved testing
individual coders against the aggregate of the other coders and follow-up discussions to refine the codebook and coding procedures.

The articles were coded according to several categories. On the first reading articles were coded for: actors and institutions mentioned; feasibility statements claiming the project was or was not likely to succeed; metaphors; mentions of other energy projects; and the component focus (e.g. pipeline, oil sands, marine terminal, etc.) of each statement. On the coders’ second read of the article, statements claiming a risk, a benefit, or a defensive statement claiming no harm were coded for high-level frames (Economic, First Nations, Technological, Health & Safety, Socio-cultural, Political and Environmental) with several frames including subcategories. Each statement could be coded for multiple frames.

6. RESULTS

Our analysis of risk and benefit statements (Figure 1) illustrates that the benefits were primarily framed as economic while environmental risks dominated newspaper coverage of the project. Economic benefits included, for instance, jobs created during the construction of the pipeline and the overall benefit of the oil sands industry to the Canadian economy. One supporter was quoted as saying “As a resource driven economy, there's no question that Canada needs access to tidewater and the project is going to generate billions in terms of spinoffs, thousands of jobs and benefits to communities” (Globe and Mail A246). The economic benefits frame also included some dire predictions for the Canadian economy if the pipeline were not built. For example, citing an Enbridge lawyer, the Globe and Mail reported, “Canadians could face “economic catastrophe” if the country continues to rely almost solely on the U.S. and that export market stops taking oil from Canada” (Globe A161).

Environmental risks were by far the most frequently mentioned risk frame. The most cited environmental risks were 1) general environmental risks (with no specific mention of details), 2) the risk of oil spill and tanker activity in the coastal waters of British Columbia, and 3) the risks of oil spills on terrestrial ecosystems. As one BC paper put it,

“…ultimately, the most critical element of the proposal is the risk it poses. First, pipelines do leak. Just witness this week's oil spill from an Enbridge pipeline into a river in southern Michigan…. And this northern pipeline would cross a thousand streams and rivers, including two of Canada's most important salmon-bearing watersheds, the Skeena and the Fraser.” (Province A178)

The second most frequently mentioned risk frame was the political risks of the project—particularly the possible backlash against politicians for supporting the pipeline. Several economic risks were cited, including the possibility of stranded assets, the relative cost and marketability of oil sands product, and public liability for environmental damage. Finally, First Nations were framed as potentially benefiting from the project and as both being at risk from the project and being themselves a risk to the project (via their constitutionally protected territorial rights).

The pattern of economic benefits versus environmental risks repeats itself when “no harm” statements are combined with benefit statements to create a category that we call “pro” meaning statements that support the project. This recategorization adds over 400 statements to the environmental benefit frame, suggesting the project would not create significant
environmental harm. For the other frames, the benefits and the pro columns are not significantly different.

Thus, as anticipated, the Northern Gateway Pipeline project is framed primarily as a trade-off between economic benefit and environmental risk. The large number of “no harm” statements in the environment category compounds this finding by illustrating the extent to which the media coverage weighed the overall environmental risk of the project.

We also coded feasibility statements indicating that the project was likely or unlikely to succeed. Figure 2 illustrates that overall, feasibility statements tended to be negative with 20% of the articles making a negative statement about feasibility. First Nations, and their ability to delay and/or halt the project through legal processes were the most cited reason (11% of the articles) the project might fail. Also cited, in decreasing order, were general statements about project infeasibility (6.3%), political infeasibility (4.3%), regulatory infeasibility (2.7%), and economic infeasibility (0.5%). Only 5.1% of all articles made positive statements regarding project feasibility and these were most likely to be general statements (1.6%) that did not specify economic, political, or regulatory feasibility. Although Figure 3 shows some difference between Alberta, British Columbia, and National media, overall the coverage is pessimistic about the project.
The similarity in coverage between British Columbia, Alberta, and the national newspapers is also seen in the aggregate of risk, benefit, and pro statements as broken down by region (Figure 3). The Alberta newspapers have a slightly larger percentage of articles citing the benefits of the project (42.1%) while the national papers show a slightly larger percentage of articles referring to risks (54.5%).

These differences are relatively minor suggesting that, in a quantitative assessment, the coverage of the project does not vary substantially by region. However, this finding does not speak to the qualitative differences that might be found between individual papers or regions (e.g. through discourse analysis demonstrated by Gunster and Saurette (38)).
Finally, Figure 4 illustrates the distribution of environmental risk mentions in our sample, according to frame sub-categories: climate change risks, coastal risks, terrestrial risks, and a “general/other” risk category that includes other types of environmental risks, as well as general statements of environmental risk without further specification. General environment risk or “other” environmental risks (not fitting into any of the other categories) dominated the media coverage, indicating that environmental concerns were rarely explained in any depth. Coastal risk was the next most frequently mentioned sub-category, followed by terrestrial environmental risks. The risk of climate change is present in only 4.5% of the articles, and is thus the least frequently cited environmental sub-category. In other words, in the media coverage of the Northern Gateway Pipeline global environmental risks, and particularly, the risk of climate change, are overshadowed by the local impacts of the proposed pipeline and the associated tanker activity on British Columbia’s northern coast.

![Environmental Risks (# Mentions)](chart)

**FIGURE 4 Distribution of environmental risks by sub-categories**

Moreover, a qualitative analysis of statements that include the risk of climate change found few articles that elaborated on climate change or positioned the project against climate mitigation efforts. Instead, there was a tendency to simply mention the risk of climate change, often in a list that included other environmental risks or First Nations objections to the project. For instance, an Alberta paper summarized opposition with the following statement: “The proposed line has prompted fierce opposition in B.C., particularly from environmental and First Nations groups concerned about potential oil spills and increased greenhouse gas emissions from expanding the oil sands.” (Herald A119)

**7. DISCUSSION AND POLICY RECOMMENDATIONS**

Overall our analysis shows a predictable trade-off between economic benefits and environmental risk where the debate over the project is largely focused on whether the economic benefits (e.g. jobs and increased production of the Alberta oil sands) warrant the
environmental risks of shipping diluted bitumen over ecologically and culturally significant landscapes and waters. This debate may simply be the unconscious repetition of a deeply embedded assumption that underpins many discussions of environmental risk. It may also be, in this case, exacerbated by the strongly regional distribution of risk and benefits that may support an us-versus-them debate rather than encouraging broader discussions regarding alternative energy futures or greening the economy.

However, despite the regional distribution of risks and benefits along provincial lines, we did not find differences in framing between Alberta and British Columbia. This finding would suggest that media may not be a major factor in the regional differences in support found in Axsen (18). Alternately, it may be necessary to analyze individual newspapers and/or to use qualitative analysis (38) to capture the differences in coverage.

In terms of the environmental risk frame, we find that media coverage often did not explain such risks beyond the general term “environment”—that is, articles did not elaborate on particular impacts. When a specific environmental risk was made explicit, it most often referred to local impacts (coastal and terrestrial) due to bitumen spills and other issues related to tanker activity on British Columbia’s coast. Climate change was marginal in the media coverage, mentioned in only 4.5% of the articles. This finding supports others findings that climate change is difficult to communicate (39) and that there may be reluctance to align one of the country’s major industries with climate change. Further, empirical research indicates that only minorities of British Columbia and Alberta citizens belief that the Northern Gateway Pipeline will increase overall greenhouse gas emissions (18). As a result, project opponents may have been strategic in their emphasis of local environmental impacts; choosing to appeal to the immediate interests of affected communities. The absence of climate change from the public debate may also be related to the terms of reference of the joint review panel that did not officially account for the upstream greenhouse gas emissions from oil sands production.

Regardless of the reason for the relative absence of climate change in the media coverage, our findings suggest that the media coverage of the Northern Gateway Pipeline did not present the project as an “emblematic issue” (17) standing in for the larger problem of societal inaction on climate change. Although climate change is evoked and (occasionally) referenced, the media tends to frame the project on the grounds of more immediate, local environmental concerns.

As of November 2015, a newly-elected national government (Liberal party) has broadened the scope of on-going review processes to include both upstream and operational greenhouse gas emissions. Although this new government will likely not reverse the conditional approval of the Northern Gateway Pipeline, it has made commitments to ban tanker traffic on British Columbia’s northern coast. The effect of the political and regulatory changes appears to be twofold. First, if the government maintains its commitment to ban tanker traffic, the Northern Gateway Pipeline will not be built. Second, and more generally, official acknowledgement and accounting for upstream greenhouse gas emissions in the regulatory review process has broadened the terms of the debate. Whether or not this will influence future media coverage (or citizen perceptions) of the Northern Gateway Pipeline or other the pipelines currently in the review process remains a question for future research.
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