How constructions of the future shape organizational responses: climate change and the Canadian oil sands

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Abstract
This empirical study examines the relationship between constructions of the future and anticipated organizational responses to climate change. Findings from the Athabasca oil sands region of Alberta, Canada indicate that actors’ views of climate change affect not only the way they construct the future of oil sands development, but also which responses they see as legitimate. Specifically, whether actors construct a future of no development, partial development or full development of the oil sands, influences the combinations of organizational responses they recommend (i.e. not responding, lobbying, engaging, developing and informing). These findings contribute to our understanding of organizational responses to climate change by showing that (1) climate action requires more than actors simply viewing climate change as strategic; (2) different constructions of the future create alternative strategic environments that necessitate divergent responses; (3) strong future constructions narrow the repertoire of business responses to climate change; and (4) in this process governments play a crucial role beyond setting climate change policy. This study thus highlights the importance of studying future constructions if we want to understand current organizational responses to environmental issues that contribute to climate change.

Keywords
Climate change, future, oil sands, social construction, strategy

Climate change is a strategic issue for organizations (Hoffman, 2005; Lash and Wellington, 2007; Porter and Reinhardt, 2007). This is because organizations both affect and are affected by climate change. As major emission producers and potential champions of lower-emission technology,
industrial organizations play a role in facilitating and mitigating climate change (Nyberg and Wright, 2012; Stern, 2006). Moreover, by contributing to change in government policy and consumer trends, climate change also impacts upon the strategic environment in which organizations operate (Banerjee, 2001; Lash and Wellington, 2007; Levy and Egan, 2003). However, climate change is not without ambiguity or complexity, in part because its effects often manifest years after the actions that spurred them (Berkhout et al., 2006), and because climate change is a highly politicized issue (Nyberg et al., 2013). Thus, while acknowledged as a critical issue, organizational responses do not always reflect this criticality.

In order to better understand how organizations respond or fail to respond to climate change, this article adopts a temporal constructivist perspective to investigate how different constructions of the future influence the responses of organizational actors. Specifically, it examines the different ways in which managers perceive climate change in relation to their business operations, how this influences the futures they project and, consequently, the organizational responses they recommend. The article uses the salient case of the Athabasca oil sands in Alberta, Canada to investigate different perceptions of climate change, the future constructions these produce and how they impact on the preferred responses of organizational actors. This case lends itself to the study of these issues particularly well, as the region has consistently found itself at the heart of the climate change debate due to the significant greenhouse gas emissions, and other pollution risks, resulting from the extraction, processing and transportation of this resource (Berman, 2013; Mayer, 2011; McKibben, 2012; van Renssen, 2012). Findings from the study demonstrate that organizational actors construct different futures for oil sands development based on their perceptions of climate change, and that these different futures shape what are deemed to be appropriate current actions.

While we know that perceptions of the future influence the actions of organizational actors (Mahoney, 2000; Pedersen, 2009), and that construction of the future affects the way actors respond to climate change in the present (Giddens 2009, 2010), we know little about how this process plays out in practice. By targeting this gap, my article thus extends existing work on the role of organizations in contributing and responding to climate change (Kolk and Pinkse, 2004, 2005; Nyberg and Wright, 2012; Slawinski and Bansal, 2012). First, it suggests that simply viewing climate change as a strategic issue is insufficient to motivate climate action. Next, it shows that different constructions of the future create alternative strategic environments that necessitate divergent responses. It also suggests that strong constructions of the future narrow the repertoire of business responses to climate change. Finally, it highlights the role governments play in setting climate change policy and shaping business responses. The study thus advances knowledge on business responses to climate change by uncovering some of the mechanisms by which imagined futures influence the organizational responses that underpin the mitigation of climate change and organizational competitiveness.

**Climate change: an ambiguous, complex and long-term strategic issue**

Climate change is a key strategic issue at the societal and organizational levels. At the societal level, climate change has entered political and public consciousness (Giddens, 2009) given the dramatic environmental changes forecast in coming decades, including a 90% chance of increased extreme weather events, 66% likelihood of drought, crop failure and famine, and the extinction of up to 33% of known species (Biello, 2007; IPCC, 2007; Lovgren, 2004). These potentially catastrophic changes have generated considerable attention from politicians, media and organizations, and translated into significant debate about possible policy responses. At the organizational level,
the debate surrounding climate change represents a substantial change in the external environment of organizations that many have argued requires a strategic response (Hoffman, 2005; Lash and Wellington, 2007; Markus and Geffen, 1998; Porter and Reinhardt, 2007). Indeed, climate change has significant impact on many aspects of the strategic environment, including regulation, supply chain, product and technologies, litigation, reputation and physical conditions (Lash and Wellington, 2007). For instance, the regulation of carbon emissions may drive up supply costs, catastrophic climate events can create serious operational disruption and customers may alter consumption patterns to penalize ‘heavy polluters’ (Lash and Wellington, 2007; also Porter and Reinhardt, 2007). Furthermore, climate change is unique because it is global, long-term and irreversible (Lash and Wellington, 2007: 96). Climate change is thus more than just another business risk; it is the prime risk of the 21st Century (Giddens, 2009). However, the interpretation of climate science and resulting policy has resulted in mixed signals and market ambiguity (Berkhout et al., 2006). This is in part due to two strategic complexities that are exploited and fuelled by those seeking to defeat emissions regulation: the uncertainty around climate change impact and the political debate over how best to respond to climate change.

One strategic complexity is the uncertain impact of climate change on the environment. First, though widely studied, there is no agreed measurement standard for climate impact (Tol, 2003; Whiteman and Cooper, 2011; Webster et al., 2003). Climate change predictions thus vary greatly based on the indicators used and how these are assessed. Further, climate change science is produced by a small group of actors external to the organization (Tol, 2003), who may not have a clear understanding of, or interest in, the organizational impact (Whiteman and Cooper, 2011). Together, this creates ambiguity and facilitates different interpretations of climate change signals (Lefsrud and Meyer, 2012; Yusoff and Gabrys, 2011). Without definitive data that readily transfers to organizational settings, actors tend to favour climate inaction: ‘… dangers posed by global warming aren’t tangible, immediate or visible in the course of day-to-day life … many will sit on their hands and do nothing’ (Giddens, 2009: 98; see also Berkhout et al., 2006; Linnenluecke et al., 2009; Whiteman and Cooper, 2011). As interpretation is central to response formulation (Giddens, 2009), we thus need to understand how managers perceive climate change.

A second strategic complexity is the ambiguity around responses to climate change. While there is consensus that responses to climate change are critical, there is no consensus about the most effective response (Slawinski and Bansal, 2012; Tol, 2003). This is because we know relatively little about how policy and technology mechanisms mitigate climate change (Tol, 2003; Webster et al., 2003). Thus, despite some effort to adapt products and processes (Crane, 2000), and become ‘greener’ and more ‘socially responsible’ (Crane, 1995), most organizations pursue a strategy of reactive conformity (Sharma, 2000). Further, because human development is difficult to predict (Webster et al., 2003), climate change responses (e.g. geo-engineering) may have unexpected negative impacts (Mahoney, 2000; Tol, 2003). Finally, as resources needed for climate action often transcend organizational boundaries, responses may not be feasible (Berkhout et al., 2006). This makes it difficult for organizations to respond to climate change and often leads to inaction (Giddens, 2009).

These strategic complexities are further compounded because climate change manifests slowly; its impacts stretch beyond the standard time horizon allocated to strategic initiatives: ‘the long time-scales and uncertainties inherent to climate change set it apart from more conventional drivers of change’ (Berkhout et al., 2006: 153; see also Whiteman and Cooper, 2011). This suggests that standard strategy exercises targeted at assessing risks and opportunities in the market environment may be insufficient to appreciate the seriousness of climate change. This is particularly true because the most significant impacts of climate change are prospective (Giddens,
This requires an understanding of organizational actors’ orientation to the future and how this shapes current responses.

One promising approach to this issue recently reintroduced to organization studies is the study of managerial constructions of the future (Kaplan and Orlikowski, forthcoming). This stream of research suggests that humans use constructions of the future as sense-making devices that inform actions in the present (Butler, 1995; Pedersen, 2009). Futures provide a sense of purpose and direction by making specific frames and actions salient (Emirbayer and Mische, 1998). As such, imagined futures change the meanings ascribed to present conditions (Barry and Elmes, 1997), alter perceived possibilities (Adam, 2008; Wright, 2005) and shape responses (March, 1995; Pedersen, 2009). Yet, while there is a strong tradition of studying the impact of the past on the present (David, 1985; Flaherty and Fine, 2001; Sewell, 1992; Stinchcombe, 1965), little empirical work examines the future in the same way. Studies of future constructions are thus needed to advance our understanding of business responses to climate change.

The role of the future in organizational responses to climate change

Constructions of the future are particularly relevant to the study of climate change because its long-term horizon necessarily requires imagination (March, 1995) and forward-thinking (Giddens, 2009). However, the very nature of strategy analysis tools, which provide structural frameworks that encourage fact-based analysis, means that these do not adequately incorporate the mechanisms for fluidity and imagination required in climate change. It is thus difficult for actors to make sense of the innately unpredictable nature of climate change. One way they try is by using imaginative constructions (Beck and Holzner, 2007; Wright, 2005). These constructions offer ‘a generative space’ in which climate futures can be envisioned (Yusoff and Gabrys, 2011: 517) in relation to anticipated damage and recovery (Gephart et al., 2009). Yet, constructing the climate future is a highly interpretive process, as climate change predictions are uncertain and subject to increasingly partisan political debate (Nyberg et al., 2013). This results in multiple and varied future constructions of climate change (Yusoff and Gabrys, 2011), which are likely to evoke an equally diverse array of responses and non-responses. In order to better understand the link between constructions of the future and organizational responses to climate change, we need to understand how managers incorporate environmental issues into the futures they create.

While some authors propose that firms do not generally consider environmental issues in their vision of the future (e.g. Giddens, 2009), few studies have explicitly investigated whether this is the case. Indeed, a number of management writers have advocated greater corporate engagement with climate change in terms of risks and opportunities, which necessarily involves some future-orientation (see e.g. Lash and Wellington, 2007; Porter and Reinhardt, 2007). More generally, Hjerpe and Linnér (2009) show how utopian and dystopian visions of future societies are used in climate change science and policy. While dystopian thought presents climate change as resulting in apocalypse, utopian elements emerge in policies to encourage sustainable development via managed economic growth, GHG targets, as well as technological innovation (e.g. carbon capture and storage and geo-engineering). Indeed, Hjerpe and Linnér (2009) argue that utopian thinking, based on a more holistic vision of the future, makes climate action more likely.

Looking forward is thus critically important as it ‘creates the conditions for material interventions in and political sensibilities of the world’ (Yusoff and Gabrys, 2011: 516; also March, 1995). Specifically, it creates a perceptual frame that either narrows or broadens our repertoire of responses (Carvalho and Burgess, 2005). This opening up and closing down of responses gives future
constructions a critical role in creating climate reality, in that it ‘co-fabricates it in ways that effect [sic] the possibilities to act on it … actively produces it as an event’ (Yusoff and Gabrys, 2011: 520, emphasis in original). However, despite the existence of these conceptual tools, we know little about the process by which constructions of the future influence our experience and response to the present. Indeed, there have been recent calls for research looking inside the ‘black box’ of managerial interpretation to explain responses to sustainability issues (cf. Linnenluecke et al., 2009). That is the focus of this article, which asks specifically (1) What futures do organizational actors construct? and (2) How do these constructions shape action?

Method

Case context

Once considered too expensive, as well as too damaging to the land, exploitation of Alberta’s oil sands is now a gamble worth billions (…) ‘It’s a struggle to balance the needs of today and tomorrow when you look at the environment we’re going to live in (…)’ In northern Alberta the question of how to strike that balance has been left to the free market, and its answer has been to forget about tomorrow. Tomorrow is not its job. (Kunzig, 2009)

In seeking to explore how organizational actors interpret climate change, this article adopts an interpretive case study approach (Silverman, 2004), focusing on the revelatory case (Yin, 2009) of oil sands development in the Lower Athabasca region of Alberta, Canada. A range of researchers have highlighted this context as particularly relevant in seeking to understand climate change and sustainability issues (Lefsrud and Meyer, 2012; Sharma, 2000; Slawinski and Bansal, 2010, 2012). The Lower Athabasca region is high in biodiversity, featuring many species of fish and wildlife, ancient boreal forest, extensive lakes and key rivers (Government of Alberta, 2008). At the same time, with 170bn confirmed barrels of oil, Alberta is second only to Saudi Arabia in terms of oil reserves (Government of Alberta, 2009b). Thus, the area has seen extensive development over the past ten years (Government of Alberta, 2008, 2009a).

However, the Athabasca oil is contained in oil sands, which are notorious for their deleterious environmental impact during extraction, due to the large amount of energy and water required and carbon dioxide produced (Kunzig, 2009). As a result, the oil sands have generated substantial media attention, become a target of criticism from environmental activists and been subject to extensive political debate. For example, the European Union recently sought to assign a 23% higher carbon footprint to oil generated from oil sands rather than conventional sources, to raise awareness of it as a highly polluting energy source (Carrington, 2012; van Renssen, 2012). In addition, there is mounting concern about the way the oil is transported across North America. For instance, the Keystone XL Pipeline, a large development proposed to transport oil from Canada into and across the United States, has attracted strong criticism on the basis of its potential impact on the ecosystem (Abraham, 2013; Berman, 2013; Mayer, 2011; McKibben, 2012). This encompasses not only concerns about the disruptiveness of building and hosting the pipeline, but also potential oil spills from pipeline breaks and increased greenhouse gas emissions through consumption of oil sands oil (Abraham, 2013; McKibben, 2012). The oil sands, particularly the world’s largest deposit in the Athabasca region of Canada, are thus at the heart of the climate change debate.

In addition, the oil sands are contested territory because multiple stakeholder groups are involved and affected by its development. Regional stakeholders include aboriginal groups, industry players, municipalities and NGOs. All of these groups have legitimate claims over the area. For instance, 12 First Nations reserve lands and two Métis settlements fall within the boundaries of the Lower Athabasca region (Government of Alberta, 2009a).
Interviews and documents comprise the main data sources for this study. Interviews with key stakeholders in the Lower Athabasca region of Alberta, Canada were conducted to access the subjective experience of these actors. This is important as subjective experiences are critical to the study of meaning construction (Czarniawska-Joerges, 1992). Specifically, 23 interviews were held with individuals centrally involved in the region. As reviewed above, development of the oil sands in the Lower Athabasca region has become a significant political issue given their contribution to carbon emissions. People within the region are thus exceptionally aware of climate change issues. Interviewees included representatives from government, energy companies, regulatory bodies and other interest groups. Specifically, I interviewed executives of energy companies operating in Alberta, senior municipal and provincial government officials and representatives from industry bodies, consumer groups and NGOs. Interviews lasted one to two hours, and were used to access participants’ perceptions of climate change and constructions of the future; interviewees were specifically probed about economic and environmental goals in relation to future oil sand development, and asked to outline the most appropriate courses of action. Interviews were recorded and transcribed verbatim, producing over 500 pages of data.

Additionally, 216 documents dealing with the oil sands were collected. This included key industry, government and media reports, development plans and draft plans, meeting agendas, meetings minutes and press releases. These documents created an extensive dataset amounting to several thousand pages of data. All data were read into NVivo 9 for coding and analysis. An overview of the dataset is available in Table 1.

### Data analysis

As is typical in interpretive research, the analysis progressed via a series of iterative stages (Maguire and Hardy, 2009). First, a rich case description of the Lower Athabasca oil sands was produced to identify key events and actors (Geertz, 1973; Langley, 1999). This description was developed based on a range of documentary sources such as government reports and speeches, industry

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**Table 1. Data sources.**

<table>
<thead>
<tr>
<th>Data format</th>
<th>Number</th>
<th>Pages</th>
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<tbody>
<tr>
<td>Interview</td>
<td>23</td>
<td>536</td>
</tr>
<tr>
<td>Industry</td>
<td>6</td>
<td>152</td>
</tr>
<tr>
<td>Regulator</td>
<td>6</td>
<td>118</td>
</tr>
<tr>
<td>Industry association</td>
<td>4</td>
<td>90</td>
</tr>
<tr>
<td>NGO/Consumer Group</td>
<td>4</td>
<td>106</td>
</tr>
<tr>
<td>Government</td>
<td>3</td>
<td>70</td>
</tr>
<tr>
<td>Document</td>
<td>216</td>
<td>4,194</td>
</tr>
<tr>
<td>Consultation documents</td>
<td>38</td>
<td>1,340</td>
</tr>
<tr>
<td>Meeting agendas/minutes</td>
<td>24</td>
<td>124</td>
</tr>
<tr>
<td>Press release</td>
<td>47</td>
<td>62</td>
</tr>
<tr>
<td>Reports</td>
<td>86</td>
<td>2,432</td>
</tr>
<tr>
<td>Terms of reference</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td>Websites</td>
<td>17</td>
<td>220</td>
</tr>
</tbody>
</table>

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1. Interviewed executives of energy companies operating in Alberta, senior municipal and provincial government officials and representatives from industry bodies, consumer groups and NGOs.
reviews and organizational websites. The resultant thick description was used to create familiarity with the case context, the data and to confirm case suitability.

Second, frames analysis (Boykoff, 2008; Kaplan, 2008; Pedersen, 2009; Sharma, 2000) was employed to analyse how actors viewed climate change. Over multiple inductive coding rounds (Corley and Gioia, 2004), I identified five distinct views of climate change: climate change as a non-issue or irresolvable issue; climate change as a market threat; climate change as an environment threat; climate change as a market opportunity; and climate change as an environment opportunity. These are defined and illustrated in Table 2. The existence of these categories was confirmed through reference to existing literature, noting overlap of the categories with the idea of prognostic and agnostic features of framing (cf. Benford and Snow, 2000, cited in Kaplan, 2008), utopian and dystopian visions of climate change (cf. Hjerpe and Linner, 2009) and environmental opportunities and threats (Sharma, 2000). While the findings most closely matched the labelling by Sharma (2000), I found that his categories were not nuanced enough to fit the data. I thus extended his typology, utilizing some of his labels but adding further categories in line with this dataset.

Third, I conducted a temporal analysis to identify constructions of the future. I began by searching for references to the future. This included explicit mention of the ‘future’, ‘forward-looking’, ‘alternate states’, ‘visions’ or ‘scenarios’ (Taylor, 2002; Yusoff and Gabrys, 2011), and implicit references via the use of future tenses. I carefully coded these data for the ways in which actors constructed the future. This process identified three different constructions of the future in relation to the oil sands development: full, partial and no development. These categories are explained and exemplified in Table 2. As future constructions are central to the article’s contribution, I report them in Section I of the findings.

Fourth, I explored the relationship between future constructions and climate action. This involved identifying the climate responses that actors proposed. I noted multiple strategic responses to climate change: (1) non-responses ignored climate change by giving responsibility for it to policy-makers; (2) lobbying sought control over climate change by influencing policy-makers; (3) engaging aimed to negotiate climate change targets by involving community stakeholders, (4) developing focused on altering climate change by creating technologies; and (5) informing tried to lay claim to climate change expertise by producing and sharing information with key parties (see Table 2). Matching responses to future constructions revealed three patterns; these are reported in Section II of the findings. An overview of the analytic process and order of constructs is presented in Figure 1.

The findings of the research are presented in two parts. Firstly, I review the multiple future constructions organizational actors assembled in the context of the Athabasca oil sands to answer research question one. I then outline the proposed organizational responses to climate change and how these link to constructions of the future to answer the second research question. I found that actors created visions of the future based on their understanding of climate change, and that this informed which responses they viewed as appropriate. In presenting the findings below, I draw on the constructs developed during the empirical analysis (Table 2).

**Constructions of the future**

Organizational actors constructed multiple futures of the oil sands. Depending on whether they viewed climate change as an opportunity or a threat, whether they viewed this as affecting the environment or the market, the extent of the impact and their perceived ability to mitigate these affects, actors would vary in their recommendations for full, partial or no development of the
Table 2. Codes, definitions and illustrations.

<table>
<thead>
<tr>
<th>Category</th>
<th>Code</th>
<th>Definition</th>
<th>Illustration</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Views on climate change</strong></td>
<td>Non-issue / irresolvable</td>
<td>Climate change seen as a non-issue; neither market nor environmental impacts are seen to be of concern or benefit. This is either because there are perceived to be no impacts, the impacts are unknown, the impacts are too far in the future to warrant action, or there is no appropriate course of action</td>
<td>‘I’m an agnostic when it comes to climate change’; ‘Maybe that’ll be next year’s project’; ‘Climate change is an irresolvable issue; why waste the energy?’</td>
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<td></td>
<td>Market threat</td>
<td>Climate change seen as threatening the market; including mention of reduced investment, increased cost-price, greater market volatility and making the market less attractive overall</td>
<td>‘If you put a cap on the market, you create a problem because the market no longer does what it needs to’; ‘Uncertainty about climate change policy jeopardizes investment’</td>
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<td>Environment threat</td>
<td>Climate change seen as threatening the environment; including mention of negative impacts on health, flora, fauna, landscape, water and air</td>
<td>‘It kills birds by the thousands’; ‘nitrate is poisonous gas’; ‘contaminate usable ground water’</td>
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<td></td>
<td>Market opportunity</td>
<td>Climate change seen as offering market opportunities; including mention of improved corporate image/reputation, competitor differentiation, increased customers and commercial gain</td>
<td>‘It’s about corporate image; we find it one way to distinguish ourselves from competition’; ‘there’s some commercial gain to be had’</td>
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<td></td>
<td>Environment opportunity</td>
<td>Climate change seen as offering environmental opportunities; including mention of preventing environmental damage and reducing impact of existing practices</td>
<td>‘The industry is at the intersection of economy and environment. We can make real changes’</td>
</tr>
<tr>
<td><strong>Constructions of future</strong></td>
<td>Full development</td>
<td>The future was constructed as in a way that involved full development of the oil sands; this construction was often offered when participants perceived climate change as a non-issue or an irresolvable issue. This meant progressing existing development plans without any restriction or delay</td>
<td>‘The key is ensuring access to the hydrocarbon resource’; ‘We must advance industrial development’; ‘Our key focus is growth. Stability is a four letter word around here’</td>
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<tr>
<td>Category</td>
<td>Code</td>
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<tr>
<td>No</td>
<td>development</td>
<td>The future was constructed as in a way that involved no further development of the oil sands; this construction was often offered when participants perceived climate change as a critical issue. This meant rejecting applications for further development and/or stopping existing development from continuing</td>
<td>'Ideally we'll be shift off oil altogether'; 'There should be no further development of the oil sands until these issues have been addressed or at least looked into!'</td>
</tr>
<tr>
<td>Organizational responses</td>
<td>No response</td>
<td>Non-response; climate change is seen as governmental responsibility via environmental policy (carbon pricing, trade, tax, rates), regulatory mechanisms (rules, incentives, penalties) and market mechanisms (subsidies, competitive tender)</td>
<td>'Disagreeing with drilling in a environmentally-sensitive area ... that is not a decision for us, that’s a policy decision'</td>
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<td></td>
<td>Lobbying</td>
<td>Influence-based response that seeks to get best possible climate change policy by lobbying government. This includes seeking clarity or more information from government in relation to policy, and trying to influence policy via advice or market pressure</td>
<td>'we make sure they understand the difference their policies will have'; 'if they don’t listen, we go higher up the political chain'</td>
</tr>
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<td></td>
<td>Engaging</td>
<td>Community-based response that seeks to get best possible market conditions by engaging with those involved. This includes seeking settlements with affected parties to avoid government intervention, engaging with the public and media to raise awareness of impacts and educating parties by sharing data</td>
<td>'Stakeholder negotiations will balance the social, economic and environmental aspects'; 'we let them know the price will go up'; 'make them look bad in the media'</td>
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<td>Developing</td>
<td>Technology-based response that seeks to get best possible market conditions by responding to signals from consumers and policy-makers via development. This includes developing environmental technology (carbon capture and storage, smart metering, co-generation, etc.) and renewable energy sources (solar, hydro, wind)</td>
<td>'We invest in renewables like wind; and that's voluntary'; 'We are looking into ways to get co-gen up'; 'Our CCS initiative is one of the largest in the world'</td>
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<td></td>
<td>Informing</td>
<td>Knowledge-based response that seeks to get best possible market conditions by gaining and sharing information. This includes research on the opinions of policy-makers and consumers, as well as research on actual climate change impacts and responses</td>
<td>'We regularly take the pulse of policy-makers to make sure we know what is going to happen so we can work toward it'; 'model the effects'</td>
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Table 2. (Continued)
oil sands. While there were clearly nuances within each construction, I focus on the shared elements.

**Construction 1: full development**

The full development scenario cast a future in which development of the oil sands continued at its current rate. There was no discussion about limiting or delaying existing development plans: ‘I’m thinking about how I get access to the land so I can keep developing my resource’ (Executive, EnergyCo 1); ‘The planning horizon is 20 to 30 years; we’ve already approved these projects, so nothing will change in the near future’ (Executive, Regulator 1).

This construction depicted oil sands development as central to the Albertan economy: ‘The oil sands are the second largest oil reserve in the world next to Saudi Arabia; as a result you can use it as an economic engine’ (Executive, Industry Association 1). Moreover, government representatives saw it as neither desirable nor feasible to restrict development: ‘Royalty revenues from oil sands development help pay for valuable services for Albertans, including important infrastructure, a world class education system and the delivery of health care services’ (Gov Report); ‘The industry is too big to fail … with billions of dollars in liability on the ground, if the industry went belly-up today, we would have to clean up their mess’ (Gov Rep).
Logic of construction. When actors employed this construction, they viewed climate change as neither a threat nor an opportunity, but rather saw it as insignificant, overstated or irresolvable. Some actors saw no business impact: ‘Honestly? We currently do nothing about climate change … Maybe that’ll be next year’s project’ (Executive, PipeCo); ‘There is a lot of talk about the environment, but not a lot of action. So, at the moment I would say the business impact is negligible’ (Chief, Industry Association 2). Others felt the environmental impact was overstated: ‘They’ve been talking about climate change for the past twenty years. We’ve seen no impact’ (Executive, Regulator 2); ‘I’m an agnostic when it comes to climate change. There are not enough pieces of this puzzle to draw the kinds of conclusions we’re drawing … we are doing far too many things anticipating an outcome that we don’t have enough facts on’ (Chair, Energy Industry Body). Still others talked of climate change as irresolvable: ‘We don’t have the technology for climate action, so we need to stop debating the issue and move projects forward. We will find a solution in the future’ (CEO, Regulator 2).

In this construction, actors either did not perceive environmental issues–specifically climate change–to be strategically significant or could fathom no effective response. It gave dominance to economic gains by constructing a future in which it was acceptable to develop the oil sands at the present rate and downplayed the need for environmental action. Indeed, in the absence of an immediate environmental threat that could be mitigated, continued development was seen as legitimate.

Construction 2: partial development

The partial development scenario envisioned a future that required some adaptation of the oil sands development. Though development plans were projected to progress, progress would be partial or plans adapted: ‘The purpose of the Land-use Framework is to manage growth, not stop it, and to sustain our growing economy, but balance this with Albertans’ social and environmental goals … smart growth’ (Policy Document).

Interestingly, there was variation in the anticipated changes to oil sands development. Some foresaw development changing to account for specific environmental or market issues: ‘We need to ensure that the environment is protected to some degree … if you put a road in, you may be affecting grizzly bears. You have to be sensible … managing growth’ (Chief, Regulator 1); ‘For us it’s royalties and rates; if they get too high, this market isn’t attractive anymore’ (Executive, EnergyCo 2). Others anticipated a reduced rate in overall development: ‘There will come a point when we are going to have to slow down and take stock of the impact’ (Advisor, Regulator 3); ‘This industry was booming, so we haven’t had time to consider the market needs. We will need to take pause sometime’ (Executive, PipeCo). Still others envisioned regionally restricted development: ‘Special attention should be paid to sensitive areas, such as fens, muskeg wetlands and other ecosystems that cannot be restored’ (Consultation Doc). Finally, actors anticipated a shift toward renewable alternatives: ‘Renewables are clearly in favour to achieve GHG targets and … being environmentally responsible going forward’ (CEO, Regulator 3); ‘We think there’s some commercial gain to be had if we are good at renewables … so we’re pushing government to accept some of our more innovative ideas’ (Executive, EnergyCo 3).

Thus, actors predicted adaptation in response to environmental or market issues: ‘The uncertainty in the industry has created a situation where we have issues around transmission development, issues around competition … Industry isn’t willing to progress without further clarity’ (Executive, NGO 2); ‘We are driven by the market; signals are ambiguous and that is going to inform our investment decisions’ (CEO, EnergyCo 2).
**Logic of construction.** Industry actors employing this construction viewed climate change as relevant, but also saw important economic gains from oil sands development. The focus of actors thus tended to be on both market and environmental issues. Regardless of the perception of climate change affecting the market or the environment, the construction of the future was the same: development would at some point need to be restricted. However, while climate change would affect the market and/or environment, this affect could be mitigated: ‘We ensure that the environment is protected, or that things are mitigated to a reasonable standard. Obviously there’s going to be some minor environmental damage’ (Executive, Regulator 2).

In this construction, actors perceived climate change to be strategically significant and requiring response. While dominance was given to neither economy nor environment, diverse actors prioritized these differently based on what was seen as most likely to alter the industry. Actors constructing the future in this way actively pursued, or at least anticipated, changes that would alter the strategic landscape and impact organizational action.

**Construction 3: no development**

The no development scenario cast a future in which the development of the oil sands was stopped; this meant either discontinuing present development or not engaging in further development. For instance, some actors foresaw existing projects being halted: ‘We have become as an industry so concerned with public notice and consultation … requirements imposed by the regulator here in Alberta are beyond onerous … drive projects to a halt’ (Executive, Regulator 1); ‘They think you put a well in the ground and it has no environmental footprint whatsoever. But when you’re out here and you see … what it does to these people and to see the water destroyed … we would stop developing the oil sands’ (Independent Land-Use Activist). Actors also foreshadowed that further development would not be pursued or be rejected: ‘We are not going to put in any more applications until we have some guarantees from government’ (CEO, EnergyCo 2); ‘We need to stop approving projects until we can do an environmental impact assessment’ (Advisor, NGO 3).

This construction incorporated the unique challenges oil sands development posed to market and environmental goals: ‘The real threat from development is the environmental impact … We’re 17 years ahead of schedule to meet production target, but 17 years behind in dealing with the environmental management’ (CEO, NGO 3). This made it appropriate to discontinue development in future: ‘We don’t want to pull out of the market, but I can see conditions under which we would’ (Executive, EnergyCo 2); ‘The drilling has to stop now if we want a community that our children and grandchildren can live in’ (Independent Land User Activist).

**Logic of construction.** When actors employed this construction, they viewed climate change as a critical issue that needed to be addressed with some urgency. The perception of a future regulatory and market risk was fuelled by regulation of carbon emissions. Moreover, the immediate environmental costs of oil sands development created a need to limit future impact: ‘From an environmental perspective, the oil sands’ projected growth is the fastest-growing source of emissions in Canada … so it’s the single biggest challenge for us meeting our international obligations. And then we also have to consider it from a forest perspective, from a water perspective, from a land footprint perspective, and the tailings ponds’ (CEO, NGO 3); ‘Our number one uncertainty is climate change and how the government is going to respond to it’ (CEO, EnergyCo 2). Climate change and policy was seen to significantly impact business: ‘We are watching the
science and policy debate around carbon with great interest, and are looking at how that policy impacts the market’ (Gov Rep).

In this construction, dominance was given to the threat of climate change and, consequently, the risk of developing the oil sands. Actors saw climate change as introducing risk into the strategic environment. This enabled the construction of a future in which it was not acceptable to continue developing the oil sands, given both the market and environmental risk and resulted in future oil sands development being construed as illegitimate.

**Constructions of the future and proposed climate action**

How then did these future constructions shape current and proposed actions in relation to climate change? Actors engaged in five different responses to climate change: not responding, lobbying, engaging, developing and informing. While each of these responses served a different purpose (see Table 2), all of them engaged with the future dimension of climate change. Not responding involved forsaking the future: ‘These [environmental] impacts lie in the future. We can’t worry about that now’ (CEO, EnergyCo 2). Lobbying, by contrast, was a way to gain access to the future: ‘Talking to government means we know sooner and we are better able to respond’ (CEO, EnergyCo 1). Engaging assisted in negotiation of the future: ‘How we prioritize things and what gets done really depends on what people say to us’ (Gov rep). Developing helped invent the future: ‘What happens here next depends on how these projects turn out … whether these technologies are viable’. Informing was a way to lay claim to the future by supporting and legitimizing one’s own construction: ‘Our research shows very clearly what the impact of the oil sands development is and what course of action is needed’ (CEO, NGO 2). Interestingly, multiple responses aligned with each construction of the future: (1) Full development was associated with no response and the responses of lobbying and engaging; (2) partial development was linked to the responses of developing, lobbying and informing (3) no development was associated with the responses of lobbying, informing and engaging. The next section discusses the patterns and their implications for the climate future.

**Full development: no response, lobbying and engaging**

When the future was envisioned as full oil sands development, three responses were salient. The first response, no response, pushed the responsibility of climate change to policy-makers: ‘We do what the market incentivizes. Right now, that means digging up the oil. It is not our job to set the price of carbon. That’s one for government’ (CEO, EnergyCo 2); ‘People aren’t prepared to pay for clean energy … relatively right-wing … don’t necessarily believe in climate change … So, unless the government tells us otherwise, we are going to keep developing’ (Executive, Industry Body).

The second response, lobbying, constituted attempts to influence government and gain policy clarity or input: ‘It’s very much working collaboratively with government … to talk about the appropriate regulatory approach … we lobby on behalf of industry to keep development moving’ (CEO, Industry Body); ‘If we can shift policy a little bit toward us, then we can keep developing in line with shareholders needs’ (CEO, EnergyCo 1).

The third response, engaging, meant communicating with those involved in or affected by the oil sands development: ‘The last group we need telling us what to do is a quasi-government group or regulator–We prefer to talk to those actually affected and find a swift solution’ (CEO, Industry Body); ‘We push it back out to them via consultation. That way they have to balance stakeholder interests’ (CEO, Regulator 3).
Consistent with the construction of the future, these responses supported continuing oil sands development. Where no impact of climate change was perceived, actors chose not to engage with the issue. Where impact was perceived but seen as negligible or easy to mitigate, responses to climate change were directed at producing the best possible policy and market conditions (here via lobbying and engagement). These responses were quite market-centric, prioritizing market goals without real regard for other goals; responses thus did not deal seriously with climate issues. Interestingly, responses did emphasize the role of others in mitigating climate change, indicating that responsibility lay either entirely with others or was distributed across multiple groups. This ‘distributed responsibility’ helped justify relatively ineffective responses to climate change. Critically, responses were consistent with a future of full oil sands development and thereby essentially reinforced it.

**Partial development: developing, lobbying and informing**

When the future was constructed as partial development of the oil sands, actors drew on three responses. The first, developing, was a technology-focused response that involved building new environmental technology and exploiting renewable energy sources: ‘… need for the province and nation to reduce the reliance on fossil fuels and begin developing other energy resources in the region, such as hydroelectric and nuclear power’ (Consultation Doc); ‘We need to allow for the projects to move forward that would deal with the capturing of carbon … we have probably one of the best locations in North America for carbon capture and storage’ (CEO, EnergyCo 1); ‘We’re a very industrial province, we have a large amount of oil sands and the processes are fairly carbon-intensive … new technology shows real promise’ (Chief, Regulator 2).

The second response, lobbying, consisted of attempts to influence government by gaining policy clarity or input. This meant ensuring that environmental and/or market interests were considered in climate change policy, capitalizing on perceived opportunities and minimizing perceived threats: ‘We’re talking to policy-makers about the carbon trade scheme and pricing mechanisms … we want to make sure that we have a price signal so we can respond appropriately’ (CEO, EnergyCo 2); ‘A big part of our job is working with government to make sure they understand the real cost of the oil sands development–Long-term issues like usability of land, groundwater safety, habitat impacts’ (CEO, NGO 2).

The third response, informing, was research-based. Here attempts were made to gain and disseminate information on market and environmental issues: ‘It’s a lot of research before we start filing rate applications. It’s about being able to make informed market decisions’ (Chief, Regulator 3); ‘We use a whole variety of tactics … we do a lot of research … We leverage that as much as possible in terms of outreaching communications’ (CEO, NGO 3).

Consistent with the construction of the future of a more limited development of the oil sands, actors engaged in responses that enabled them to capitalize on environmental or market opportunities, and mitigate environmental or market risk. These responses saw organizations involved in areas such as research and development, which could mitigate climate change and gave greater process ownership to organizations. Responses aligning with this construction were also fluid and proactive. Instability in the strategic environment carried potential for significant change, altering what might constitute a suitable response; organizational actors thus needed flexible responses that could address various climate policy and technology scenarios. Accordingly, these actor’ focused on retaining the potential for action and the ability to change strategic direction. ‘Middle of the road’ responses were thus pursued and these reinforced the future vision of the partial development of the oil sands.
No development: lobbying, informing, engaging

When the future was constructed in a way that envisioned no development of the oil sands, actors presented a different combination of responses. The first response, lobbying, included attempts to influence government by gaining policy clarity or input. These attempts particularly centred on ensuring that environmental and/or market risk was contained: ‘The position we are taking to government is clear: No further oil sands development’ (CEO, NGO 4); ‘The key thing we need is clarity. That necessarily involves some bi-lateral discussions with government’ (Executive, EnergyCo 2).

The second response, informing, used research to demonstrate why development was not appropriate: ‘The research consistently shows the same things. Nitrate levels are up, fish are dying’ (Advisor, Regulator 3); ‘We are going to hit 4bn barrels of oil a day by 2020 … have to stop approving development if we want to have any chance of curbing the [emissions] impact’ (CEO, NGO 3); ‘Investment only continues as long as the rates and conditions are right … that won’t be the case in Alberta’ (CEO, Industry Body).

The third response, engaging, meant involving key stakeholders: ‘… get those affected to voice their opinion. A lot of people don’t want to see the development continue … we make it possible for them to be heard’ (Independent Land Use Activist); ‘When industry and stakeholders sit around the table, that’s the time to push back … there will be no more development unless we can agree amiable market conditions’ (CEO, Industry Body).

These responses were consistent with a future in which the oil sands would no longer be developed. By highlighting environmental and market risks that could not be mitigated, responses justified discontinuing oil sands development. However, the justification for this focus differed dramatically; actors sought to mitigate climate impact either purely because of the environmental consequences or because of the knock-on effects these would have on market conditions. While responses did not address climate change per se, they targeted the conditions that produced it. Responses thus supported a future without development.

Summary. Interestingly, while the way the future was constructed did not necessarily determine a single set response, it did influence the direction and fluidity of response. Those who foresaw full development of the oil sands responded in ways that favoured market goals and did little to address the environmental issues that perpetuate climate change. Those who foresaw no development of the oil sands responded in an environmentally beneficial way by targeting the conditions that created environmental problems, even if this action was actually market-driven. Those that foresaw partial development of the oil sands chose flexible responses that sought to address various climate policy and technology scenarios. Actors working with this future construction sought to address the conditions that created environmental problems as well as the detrimental consequences these brought about. They also remained most strategically agile and capable of changing direction. Importantly, the only response common across all three constructed futures was the lobbying response. This indicated that, regardless of whether actors constructed a future in which there was full, partial or no oil sands development, they saw the role of government as critical, seeking to engage and influence it in ways that fit their particular construction of the future.

Discussion

This article set out to answer the questions: (1) What futures do organizational actors construct? and (2) How do these constructions shape action? Findings from the study highlighted three different constructions of the future of oil sands development which influenced the direction and fluidity
of organizational responses. I now discuss how these findings contribute to the literature on organizational responses to climate change.

First, this study confirms and extends the strategic relevance of climate change within organizations (Kolk and Pinkse, 2005; Lash and Wellington, 2007; Porter and Reinhardt, 2007; Wittneben et al., 2012). In this study, future constructions of oil sands development were based on perceived market and environment opportunities and threats. Full development was envisioned when climate change was viewed as non-strategic (e.g. no impact), partial development when it was seen as an important issue with some business impact (e.g. consumers’ desire to consume environmentally consciously sourced oil) and no development when it was viewed as a strategic issue with immediate and significant business impact (e.g. prohibitively high carbon pricing eroding profit margins). Thus, organizational actors are driven by business competitiveness (Banerjee et al., 2003) and respond to climate change only if they view it as strategically important (Okereke, 2007). However, this study suggests that, while viewing climate change as strategically important is necessary for climate action, it is not sufficient. Actors also need to be capable of perceiving suitable responses (Henriques and Sadorsky, 1999) that can mitigate climate impact, e.g. new technologies that affordably and effectively reduce carbon emissions. Those viewing climate change as irresolvable will commit no strategic resources to climate action, instead focusing on issues they can affect. Therefore, the assessment of strategic significance and response effectiveness is closely tied to actors’ constructions of the future and their drive for action.

Next, different constructions of climate change futures help explain the myriad, and often contradictory, responses of organizations to climate change. This study suggests that different combinations of organizational responses (i.e. not responding, lobbying, engaging, developing and informing) arise out of different future constructions. By offering ‘competing interpretations of what might emerge in the future’ (Kaplan and Orlikowski, forthcoming: 1), these constructions create different strategic environments and thereby necessitate different responses. Specifically, if organizational actors develop strong visions of the future, i.e. future visions consisting of a single coherent, plausible and acceptable future (Kaplan and Orlikowski, forthcoming: 1)–the full development and no development scenarios in this study–responses tend to be more polarized. For instance, actors who perceived no real impact of climate change or no way to mitigate that impact, prioritized market goals of profit generation and favoured full oil sands development. Conversely, actors anticipating serious and irreversible climate impact, and the associated market-restricting consumer and regulatory responses, prioritized environmental goals of habitation protection and chose to stop development. This may explain why some organizations present themselves as becoming ‘greener’ and more ‘socially responsible’ (Crane, 1995, 2000), while others reject such approaches (Nyberg et al., 2013). It also responds to recent calls for research into how future visions inform present action by creating the conditions for response (Mosakowski and Earley, 2000; Yusoff and Gabrys, 2011).

Additionally, the study extends this work by suggesting that strong constructions of the future tended to narrow, rather than broaden, the repertoire of responses viewed as appropriate (March, 1995; Pedersen, 2009). Indeed, strong visions (i.e. full development or no development of the oil sands industry) focused actions around specific but not necessarily well supported predictions, thereby reinforcing path dependence (David, 1985; Flaherty and Fine, 2001). By contrast, those constructing a partial development future were continuously scanning the environment for changes that would create new opportunities and turn non-viable responses into strategic ones; they were more resistant to path dependence (David, 1985; Flaherty and Fine, 2001). However, there was also a unidirectionality contained within this. While actors consistently talked of changes in the strategic environment affording added opportunity for climate change action, they failed to...
recognize the presence of risks that could significantly increase climate change urgency. This is despite recent climate predictions that present a far more catastrophic scenario of global warming than previously predicted (IEA, 2012; World Bank, 2012), which may drive more dramatic regulatory action and create the potential for stranded fossil-fuel assets. Yet, within much of the Lower Athabasca oil sands industry visions remained utopian (Hjerpe and Linnér, 2009). This positions climate change as a condition perpetuated by our limited imagination of the future (Giddens, 2009).

Finally, this study demonstrates the complexity and ambiguity surrounding climate change, and the government’s role in clarifying that ambiguity. I found only a single response that was common to all three constructions of the future: the lobbying response. Regardless of how actors constructed the future, climate change action or inaction always included a policy element. This may be because many of the opportunities and threats arising from industry development result from the climate change policy that is set by government and enforced by regulators. These signals are clearly important and future research should consider how these signals are set and interpreted within a business context. However, this finding may also highlight a more ominous trend in climate change: The use of manipulation and avoidance tactics. As climate change is a complex, ambiguous and long-term issue, it may well be easier for firms to influence government than to respond to climate change and its antecedents. If lobbying requires less investment and—from a purely economic perspective—yields similar outcomes, then it makes good business sense. This ‘politicising’ (Nyberg et al., 2013) deserves further attention and may explain some of the progress breakdowns and stalemates (cf. Kaplan and Orlikowski, forthcoming) in recent years, e.g. the failure to agree an extension of the Kyoto protocol at the UN climate change summit in Copenhagen in 2009. While some scholars suggest that breakdowns may be generative in certain cases because they entice actors to search for new action paths (Kaplan and Orlikowski, forthcoming), we cannot afford to use breakdowns as catalysts for innovation in the context of climate change because the outcomes are likely to be devastating (IEA, 2012; World Bank, 2012). Future studies should thus investigate how we can encourage innovative practice without requiring impasse.

Conclusion

This article demonstrates the importance of considering multiple futures in constructing innovative responses to climate change and the conditions that perpetuate it. It also highlights the need for awareness about our limited imaginative capacity, which necessarily restricts our choice of response. Consequently, polarization of response (e.g. full or no development) creates a serious danger by removing the ability of actors to perceive alternative options. More ambiguous future scenarios (e.g. the partial development scenario highlighted in this study) potentially open up different paths for action, incorporate innovation, create flexibility and allow for changes in response. However, such ambiguity is far from a ‘universal solution’ because it contains as much compromise as it does innovation. Indeed, in situations of dire social threat, like climate change, it is often undesirable to build compromise into the response. Rather, the ambiguity implicit in the partial development scenario should be seen for what it is: actors’ attempting to cope with competing pressures in the context of significant complexity. It is a true example of ‘muddling through’, i.e. adaptive but not necessarily ideal (cf. Lindblom, 1959). In seeking to better understand climate change, we thus need improved understanding of these micro-issues that perpetuate it. Climate change is a real danger, but it is one that is difficult to make sense of within a business context. It is at odds with regular business discourses and exceeds normal strategic horizons, and thus requires imaginative thinking. In encouraging organizations to respond to climate change, it is therefore important to understand and encourage organizations’ needs to retain flexibility. Firms cannot become locked
into a single path of action or they risk their ability to respond to change. This could prove disastrous in the context of climate change.

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1. A brief overview of interviewees is available in Table 1. I decided against offering more comprehensive descriptions of roles and companies out of concern that this might compromise the anonymity of participants in such a small and interconnected industry.

2. There is considerable debate about whether ‘oil sands’ or ‘tar sands’ is the appropriate term. Indeed, the most technically appropriate and my preferred terminology is bituminous sands. However, as this is not regularly used and thus less likely to be understood, I chose the term ‘oil sands’. This is because it is the more commonly used and less inflammatory of the two alternatives. My use of the term should not be taken as a political statement or support of the industry. For more on this topic, please see http://www.capp.ca/canadaIndustry/oilSands/Energy-Economy/Pages/OilSands-or-TarSands.aspx.

References


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