

Extracting Views About the Environment: Oilfield Workers'
Understandings of Climate Issues in Moose Mountain, Saskatchewan

by

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Abstract

The purpose of this research was to describe oilfield workers in the Moose Mountain Provincial Park area in southeastern Saskatchewan views on climate change. This qualitative study, inspired by Grounded Theory, utilized fifteen, semi-structured interviews to analyze participants' perspectives and experiences. For this research, climate change means, “a change of climate which is attributed directly or indirectly to human activity and which is in addition to natural climate variability” (IPCC, 2014). This study has three main findings. First, participants have robust “sense of place” attachment that fosters environmental stewardship toward the Moose Mountain area. Second, participants hold conflicted understandings of climate change that alternate between the adoption of climate skepticism and acceptance of scientific consensus regarding anthropogenic climate change. Finally, this study demonstrates the importance of engaging in conversations with oil workers to facilitate a pluralistic narrative and navigate multiple worldviews to create understanding of a controversial topic in Saskatchewan.

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I would like to acknowledge the traditional Treaty 4 land the participants of this study are presently working on.

Dedication

I dedicate this thesis to my parents – Joan and Mickey Adams. Your unwavering support has pushed me to challenge myself and continue the path of lifelong learning with strength and compassion. Your love of, and service to the beautiful Moose Mountains for over 30 years has inspired me to care deeply for this place. I hope this research makes you proud.

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Chapter 1: Introduction

Dominant societal perceptions of the oil industry assume oilfield workers disrespect the environment and view environmental matters such as climate change as nonissues because they work for an industry that contributes to various forms of environmental degradation (Angel, 2014; The Wilderness Society, n.d.). When it comes to the often-controversial topic of the oilfield it seems a dualistic choice is to be made by members of the public: either support fossil fuels or support the environment (Etam, 2018). Although most oilfield workers are adamant that the industry's environmental regulations are sound, many feel they are viewed by the public as "dirty workers" (Ashforth and Kreiner, 1999) that seem to "live for today" (Houser, 2010) and have no sense of environmental responsibility. Rich (2016) suggests that individuals working with oil companies must navigate stigmas attached to fossil fuel production which contributes to pollution, contamination, and climate change. She also asserts that oil workers must identify nature as an object to be studied, commodified, extracted, and managed, rather than a part of themselves, in order to justify their jobs (p. 34). Moreover, she states that persons whose work is associated with resource extraction enables physical and social stigmas to manifest in activities tied to the destruction of the environment. Angel's (2014) rare study on the identity of male workers in Alberta's oil sands found that oilfield workers are typically stereotyped by the public as "roughnecks" and described as:

Boisterous crowds of young, single men with little education, massive pickup trucks "jacked up to the moon"- and fistfuls of cash . . . [and] when these "work-hard, play-hard" guys finish their shift, they take to binge drinking, drugging and reckless driving – triggering spikes in drug dealers, prostitutes, bar brawls, sexual assaults and car wrecks (p. 2)

Indeed, there is much research that conveys how *others* feel about oilfield workers' relationships to, and impacts on the environment (see Angel, 2014; Ashforth and Kreiner, 1999; Filteau, 2014/2015). Yet there is very little research that specifically encourages oilfield workers to describe their views about environmental issues. Krannich (2012) points

out that oilfield-related research is not only limited in the number of studies, but it is also limited with respect to visibility, accessibility, scope, and rigor (p. 19). According to Angel (2014), the general public's stereotypical perception of oilfield workers does not account for the vast and varied lived experiences of workers, their positive values, their family-based motivations, and their productive goals (p. 4).

A simple, generic Google search or social-media scan with the keywords "stereotypes of oilfield workers" yields results like Moore's (2015, para 2) opinion that oilfield workers are typically stereotyped as "rig pigs that should have went to school" or, Gilbertson's (2014, para 2) claim that they are often labelled as "testosterone-driven, emotionless, and uneducated members of the workforce." Representations in social media reveal an ominous stigma that if you work in the oil industry, you do not have to care about the environment (Leonard, 2012).

Oil companies have been cast by members of the public as "culprits or villains" (Evans & Garvin, 2009, p. 60) and the workers are labelled with the stigma "oil-field trash" (Filteau, 2015, p. 1157). A study by Filteau (2015) suggests that resource-extraction workers are commonly subjected to physical, social, and/or moral stigma from the public. Angel (2014) explains that oilfield workers are often characterized by the public as being mentally and physically tough, rugged, competitive, and taking part in unsafe work practices that save time and maximize profit. She believes that perpetuating these kinds of stereotypes for an entire social group can be dangerous in that it can overlook important implications for a social groups' identity and wellbeing (Angel, 2014).

Empathetic studies that *have* given voice to people in the oilfield have revealed very different perspectives from those of the public. Eaton (2017) found that people in oil-producing areas of Saskatchewan often view urban environmentalists as "out of touch" and "ignorant" when it comes to what they understand as the "already environmentally sound

practices of the oil industry” (p. 10). Moreover, she explains that the former premier of Saskatchewan – Brad Wall has expressed that concerned climate change activists are being “anti-Saskatchewan and [are] promoting magical theories characterized by ‘pixie dust and unicorns’” (Eaton, 2017, p. 11; CBC News, 2016). Because the province’s former leader inferred climate change is a hoax with the above quotation, some residents might feel there is an unwritten rule for being a Saskatchewan dweller – you should be more concerned about the province’s main economic industries than with environmental matters.

Additionally, social media platforms such as the websites “OilFieldTrash.com” and “Oil Sands Strong” – a popular Facebook group, and songs such as “Roughneck” by Johnny Cash, tend to glorify oilfield worker stereotypes by providing a proverbial, heroic narrative of extraction workers by painting them with qualities like hard-working and gritty. It is likely that some oilfield workers in the southeast Saskatchewan area have embraced oilfield stereotypes as a prominent *positive* component of their identity. For example, some oilfield-working friends that I have on the social media platform Facebook have “shared” many posts containing elements of industry pride and appreciation that received many “likes” which, not only shows support for their jobs, but further acts as a form of positive reinforcement for workers. The extent to which negative environmental stereotypes manifest within individual oilfield workers as self-doubt, guilt, and/or shame is difficult to fully understand.

This thesis begins to fill the gap in knowledge identified by Angel by examining the environmental consciousness of oilfield workers, especially as they relate to climate-change issues around the Moose Mountain area. Public polling in South-eastern Saskatchewan has shown that Saskatchewanians are among the least likely in Canada to think the earth is warming and that humans are mostly to blame for this warming (Mildenberger, Howe, Marlon and Leiserowitz, 2016). Moreover, Weber (2015) reports that only 51% of Canadians believe global warming is a serious problem. Furthermore, data released from the Canada

Institute at the Washington-based Wilson Center has stated that fewer than 15% of Canadians believe climate change will greatly harm them (Weber, 2015).

Although Saskatchewanians demonstrate low levels of belief in anthropogenic climate change, broader research has shown that most Canadians *are* concerned about climate change though few are willing to take action to address the phenomenon (Gifford, 2011). There seems to be a current disconnect between knowledge about environmental issues and pro-environmental action (Tabi, 2013). For example, a 2008 survey by the *Globe and Mail* found that while 79 percent of respondents claimed that the tar sands in Alberta are good for Canada's economy, more than half of those respondents said that the sands were not good for the environment (Homer-Dixon, 2010). Clearly there is a distinct disconnection between environmental consciousness and behaviour for many Canadians. As a result, Canadians have a high quality of life and value the environment but create some of the highest per capita impacts in the world in terms of carbon dioxide emissions, water use, and waste production (Dearden and Mitchell, 2012).

For this thesis, I interviewed fifteen oilfield employees living and working near my hometown of Kenosee Lake in the Moose Mountain Provincial Park area. I engaged with them in order to describe and interpret their perceptions in an attempt to create a better understanding of an over-stereotyped and under-researched group (Angel, 2014). It is my hope that this study will minimize ignorance toward oilfield workers in Canada's second largest oil-producing province (Government of Saskatchewan, 2017). Additionally, this research may help to bridge tense relationships between oilfield workers and environmentalists. Finally, if a different future based on sustainable energy is to emerge, workers in the oil industry will need to be part of that transition. Understanding how these workers view climate and environmental issues will be key to engaging them in developing an alternate future of energy use. Co-constructing a pluralistic narrative could foster

collaboration between traditionally polarized groups within Canada. After all, global climate change inevitably requires a reconceptualization of the relations with the environments in which people live and work (Rich, 2016).

Why This Topic?

I have lived almost my entire life in Moose Mountain Provincial Park – a forest island just shy of 100,000 acres in the middle of the prairies. A tourist destination in the summertime, Moose Mountain is temporary home to roughly 450 cottage-owners and over 300,000 campers/visitors in the busy summer season, and approximately 130 year-round residents in the wintertime (J. Adams, Park Manager, personal communication, January 11, 2018). I grew up in this oasis, surrounded by trees, trails, and watersheds, and inevitably developed a strong sense of place, a passion for the outdoors and, as I would discover later, a yearning to study environmental issues.

The primary economic industries surrounding the park are agriculture and the oilfield. There are over 25 oilfield-related business offices within 50 kilometres of my house. Growing up, a lot of my friends' parents worked for oil companies – these were good, hardworking people that enjoyed outdoor pursuits almost as much as my family. As I got older and more educated, I realized that climate change and other environmental issues were becoming more prevalent and I began to question the sustainability of the main industries where I live. Coincidentally, I became curious about the views of those that work in this industry.

When I moved to the city to attend university, I became aware of the ostensible stigmas of the oil industry and its effect on the environment. I felt a personal conflict as I heard unpleasant and, at times, degrading comments directed towards an industry where people I cared about made their livelihood. I felt guilty as I began to grow some

environmentalist roots yet also felt a sense of obligatory loyalty to the people back home. I began to wonder about the extent to which people care about the environment, how they feel about current environmental issues of the Anthropocene, and if their sense of place impacts their perspectives. This ultimately led me to combine my curiosity regarding people's environmental views, with the main industry of my home region to form my primary research question – *what are oilfield workers in the Moose Mountain area of Southeastern Saskatchewan's views about environmental issues such as climate change, and what experiences influence their understanding?*

Additionally, at a broader level, scientists' predicted consequences of climate change if carbon emissions are not drastically cut (soon) also motivates me to study this topic. For example, the latest Intergovernmental Panel on Climate Change (IPCC) report released in October 2018 suggests that a rapid and drastic process of decarbonization is needed in order to rescue a habitable planet. They suggest global emissions need to be at net zero by 2050, and 45% below 2010 levels by 2030 (IPCC, 2018). This will realistically mean the phasing-out of fossil fuels. In fossil fuel dependent communities, like the ones studied in this project, this will be a potentially stressful process that will require adaptability, consensus building and worker buy-in if legitimacy is going to be maintained. There is an urgent need to understand how workers in these communities feel about the pressing issues that will define their futures and affect their communities.

As a community member in a fossil-fuel dependent area I feel it is important to note that I have experienced personal trepidation about this thesis because I realize that this research project is one of a sensitive nature. I am interviewing members of my community that I know and respect but also, at times, disagree with. This can potentially be an uncomfortable situation for both parties. I understand that I have two responsibilities: first, it is my obligation as an academic researcher to convey data in a genuine and transparent

manner and second, I must strive to interpret participants' perceptions with integrity and respect. I know that there is a significant level of trust that the oilfield workers of my study are placing in me. We have all taken risks.

Problem Statement and Research Questions

It is no secret that fossil fuels have become essential for the existence of humankind's industrial civilization (Homer-Dixon, 2010, p. 4). Highly industrialized societies are currently (almost) completely dependent on non-renewable resource extractive industries to fuel the lives of western consumer society that many Canadians have presently become accustomed to. Although we are reliant on these resources, oil extraction and transportation continue to be some of the most contentiously debated issues in Canada today (Eaton, 2017). If you watch the news or read the papers, the issue of climate change caused by humankind's profligate use of fossil fuels and its impact on the environment, is everywhere (Homer-Dixon, 2010).

According to Eaton (2017), people living and working in oil-producing communities with political ideological views on the "right" are being encouraged by oil advocacy groups to defend their industry from perceived attacks from environmentalists concerned with climate change. This epistemological "oil culture" seems to be comprised of a complex system of power relations (Hlushko, 2017) that deny any major contributions to anthropogenic climate change. The beliefs of climate-skeptics are affirmed when disseminated media messages contain information that mirrors their perception that climate change is a hoax invented by extreme environmentalists that wish to capitalize from green technology through the proliferation of propaganda. A general library search for books explaining contradictory views revealed passages similar to Bily's (2006) book – *Global Warming Opposing Viewpoints* that illustrate these types of messages:

The petition, signed by thousands of meteorologists, climatologists and atmospheric scientists, stated in part: "There is no convincing evidence that human release of

carbon dioxide, methane, or other greenhouse gases is causing or will, in the foreseeable future, cause catastrophic heating of the Earth's atmosphere and disruption of the Earth's climate." (p. 34)

Our global climate's temperature has always fluctuated back and forth and it will continue to do so, irrespective of how much or how little greenhouse gases we put into the atmosphere. . . It [climate change] has been extended and grossly exaggerated and misused by those wishing to make gain from the exploitation of ignorance on this subject. This includes governments of developed countries, the media and scientists who are willing to bend their objectivity to obtain government grants for research on this topic. (p. 60-61)

It appears that many people in Saskatchewan reject the idea of anthropogenic climate change as research by Mildenberger, Howe, Maron and Leiserowitz (2016) found that people in this province are among the least likely in Canada to think the earth is warming due to human industrial activity. Research by Eaton (2017) also found a great deal of dismissal regarding human contribution to global warming despite the facts that Saskatchewan has the highest per capita emissions in the country and that Canada is among the top ten global emitters of greenhouse gas per capita (Boothe and Boudreault, 2016). Additionally, some Saskatchewanians believe that the province will actually benefit from the impacts of climate change (Eaton, 2017). For example, Eaton's (2017) study found that some residents perceive that climate change will result in amplified rain levels in the province which ultimately affects farmers' crops positively as production will increase.

Conversely, people with political ideologies on the "left" side have demonstrated concern over climate change and thus have hostility toward companies that contribute to it (Rich, 2016). Efforts to hold fossil fuel companies accountable for their environmental impacts are swiftly emerging from some members of the public. Because research has shown that a major cause of human-related climate change is linked to energy use (Masika, 2002), an awareness of resource extractive industries' contribution to climate change has been heightened (Rich, 2016). According to Rich (2016), oil and gas industries are under intense pressure to justify their continued contribution to climate change. Moreover, she asserts that

the oil industry has been notoriously criticized for its lack of transparency regarding environmental regulations and policies and has been scrutinized for contributing to a breadth of environmental issues such as air pollution, toxic waste, leaks and spills, and many more. Stereotypes depicting workers that exhibit a “Wild West” mentality – where increased production and economic prosperity trump environmental sustainability – highlight the damaging consequences of this use-and-abuse method of resource extraction. The following passage from Homer-Dixon (2010) explains:

If you believe in what American economist and social scientist Kenneth Boulding called a “cowboy” economy, then you don’t generally care what kind of mark you leave. You take what you can and ride on. There are endless new horizons. What’s left behind is left behind. But if global warming has taught us anything, it’s that life on Earth is more complex than simply putting the pedal to the floor. It’s taught us what we have known all along but have chosen to ignore because we’re having too much fun. It’s taught us that everything has its limits and that we have reached those limits and exceeded Earth’s carrying capacity. Our footprint has become too big. (p. 172)

Contrary to popular belief, Canadians play a major role in what happens globally in terms of the environment (Dearden & Mitchell, 2012). Research has shown that an average Canadian is responsible for twenty tonnes of CO₂ emissions, four times the global average (Homer-Dixon, 2010). To illustrate Canadians contributions, Homer-Dixon (2010) writes, “we throw away forty times more carbon dioxide than we do garbage. If carbon dioxide were a smelly mass that had to be pushed around with bulldozers, we would have dealt with the problem long ago” (p. 41). Whether acknowledged or not, human-environment relationships produced alongside fossil fuel extraction are a complex and ever-changing social dynamic (Hlushko, 2017).

It is not surprising that Canadians increasingly live in a confusion of values (Homer-Dixon, 2010) as most people *are* generally aware of our societal reliance on fossil fuels (Hlushko, 2017) yet receive polarized messages from media, government, and community that inevitably influence our views. It is no secret that world demand for energy, particularly

oil and gas, continues to rise (Dearden & Mitchell, 2012) which creates a need for resource extraction workers. According to Hlushko (2017), oil extraction is more than just the apolitical act of extracting a non-renewable resource from the ground; it is a complicated network of nature, technology, culture, and power (p. 20). These factors intersect to narrate the current state of human-nature relations within extractive industries, and the social and environmental consequences of sustaining those relations (Rich, 2016). These relationships undoubtedly differ across the Canadian provinces, as well as internationally.

According to Dearden & Mitchell (2012), “the relationship among environment, resources, and society is one of the most important challenges, if not the most important challenge, facing humans on Earth” and “to ignore the relationship is to perish” (p. 1). To help fill a gap in qualitative oilfield literature, this complex human-environment relationship deserves to be researched. The following research question (1) and sub-questions questions (a, b, and c) have guided this study:

1. What are oilfield workers in the Moose Mountain area of Southeast Saskatchewan’s views toward environmental issues such as climate change, and what experiences influence their understanding?
 - a. What is the relationship between oil workers' connection to the land and their understanding of environmental issues?
 - b. What is the relationship between oil workers’ understanding of environmental issues and their views of the oil industry?
 - c. How do oilfield workers navigate any perceived conflict between the oilfield and the environment?

The objectives of this study are to explore the views of oilfield workers in the Moose Mountain area of Southeast Saskatchewan about climate change and other environmental

issues. For this research, exploring participants' views about climate change meant describing how they feel about a change of climate which is attributed directly or indirectly to human activity in addition to natural climate variability (IPCC, 2014). I describe participants' perspectives on their personal relationship to the land, their understandings of the impact of the oil industry on the environment, and their thoughts about their identity in relation to the environment. The goal is to gain a better understanding of how and why they think the way they do regarding the environment and environmental issues. This is important if one is to understand how workers in oilfield communities feel about energy issues that are critical to the inevitable transition away from, and phasing-out of fossil fuels if collective action on climate change is to be taken.

Chapter 2: Interpreting Oilfield Literature

Saskatchewan Oilfield Statistics

Canada is the fifth-largest oil-producing country in the world, and the fourth-largest crude-oil exporter (Government of Canada, 2016). Of the Canadian provinces, Saskatchewan is the second-largest producer of oil, and oil and gas is one of the leading economic industries in the province (Government of Saskatchewan, 2017). Saskatchewan is responsible for producing over one-third of Canada's primary energy (Government of Saskatchewan, no date, a) which accounts for 13% of total Canadian oil production (Government of Saskatchewan, 2017). Overall, Canadians use high levels of energy from oil and gas; these levels can be attributed to the country's immense size (potentially forcing us to travel long distances), the cold climate, an energy-intensive industrial base, relatively low energy prices, and a high standard of living (Dearden & Mitchel, 2012).

In 2015, Saskatchewan oilfield workers drilled 1,831 oil wells across the province (Government of Saskatchewan, 2017). The same year, oil and gas sectors were responsible for 15% of Saskatchewan's total gross domestic product (GDP) for a combined value of 8.3 billion dollars (Government of Saskatchewan, 2017). The Government of Saskatchewan (no date, b) claims that the oil and gas industry is the highest greenhouse gas (GHG) producing sector, emitting 34% of the province's total emissions in 2014, followed by agriculture at 22%. Saskatchewan accounts for three per cent of the country's total population yet is responsible for 10% of national GHG emissions (Government of Saskatchewan, no date, b) and is the highest per capita emitter in the country (Eaton, 2017; Boothe and Boudreault, 2016). In Canada, fossil fuels are not only the main type of energy consumed by Canadians but are also the energy source that releases the greatest amount of greenhouse gases (Dearden & Mitchell, 2012).

In 2016, the Government of Canada (2017) estimated that over 329,000 Canadians are employed in a resource-extraction industry such as oil and gas and mining, with more than 25,000 of those workers employed in Saskatchewan. Federally, resource extraction workers constitute approximately 2 per cent of the total Canadian workforce (Government of Canada, 2017). Although provincially oilfield workers only constitute approximately 4 per cent of the total labour force in Saskatchewan (Government of Saskatchewan, 2017), it is important to note that this percentage is much higher in certain oil-producing areas/communities such as that in southeast Saskatchewan. Although these percentages of total workforce labour are relatively low, they serve an important role in both Saskatchewan and Canadian economies. For example, Saskatchewan shipped approximately 486,000 barrels of oil per day in 2015, with 65% of the oil produced being transported to the United States (Government of Saskatchewan, no date, a). These statistics show that the energy extraction sector is a significant component of the Saskatchewan and Canadian economies and provide employment for many (Angel, 2014; Government of Canada, 2017).

Factors that Influence Views About Climate Change

Barr and Gilg (2007) suggest that there are many situational and psychological factors that influence one's views toward the environment. Because we do not know all the factors that influence oilfield workers' perspectives toward the environment, we should not automatically ascribe them anti-environmental attitudes. The following subsections outline some existing literature on factors that contribute to individual acceptance (or rejection) of climate change and other environmental issues. It is important to note that there are few Canada-specific studies related to my topic and thus, most of the subsequent information has been published in the United States.

Direct Experiences

According to Blake (2001), an individual's concern for the environment is context dependent; how much people care can be affected by direct experiences of environmental degradation in their community. Lorenzoni and Pidgeon (2006) agree with Eiser's (2004) argument that a lack of personally experiencing the correlation between climate change and its consequences may create a false impression that activities that contribute to dangerous environmental outcomes are in fact safe. Therefore, if oilfield workers are not personally experiencing the effects of climate change, they may not be concerned about the industry's impact on the environment.

Because research has shown that people are not likely to support initiatives addressing climate change unless they perceive it to affect them personally (Lorenzoni & Pidgeon, 2006), it seems climate change may remain a low priority for many in developed countries, Canada included, until effects of climate change start to be witnessed closer to home (Leiserowitz, 2007). Leiserowitz (2007) believes that until global warming becomes a "household word" that is commonly discussed as part of everyday discourse, it will likely remain a low priority for most. Weber (2010) believes that one needs to experience adverse consequences of climate change to make a causal connection to it. He suggests that learning from repeated personal experience involves associative and affective processes which are not only fast and automatic, but far more likely to capture a person's attention and impact his/her views. Because direct experiences of climate change consequences have stronger influence on people's behavior than indirect experiences (Kollmuss & Agyeman, 2002), it is important to document not only the ways in which oilfield workers conceptualize the changing climate and perceive the oil industry's impact on this change, but also the conditions under which their views have been influenced and formed.

Perceptions of Harm and Risk

Research has shown that people are likely to become concerned with environmental matters when these issues have threatening and harmful consequences for the aspects of their lives that they value most (Hansla, Gamble, Juliusson, and Gärling, 2008). Hansla et al. (2008) point-out that people tend to focus on information that is consistent with their value orientations and are less likely to be concerned with environmental issues such as climate change if environmental regulations threaten their wealth, power, or authority. For example, environmental problems that threaten to limit job opportunities, increase taxes, energy prices, etcetera, tend to be perceived as threats to personal freedom, individual choice, and people's employment (Hansla et al, 2008). People tend to protect what they have and love. If oilfield workers feel threatened by the possibility of losing their livelihood and the things that matter most to them, their resistance to change, and their "degree of dismissal about the existence, attribution, and impacts of climate change" (Eaton, 2017, p. 7) will likely increase. Currently, three-quarters of Canadians feel that climate change solutions will require changes in their personal lives (Weber, 2015).

Citizens' perceptions of the importance and severity of climate change does not seem to match those of most climate scientists (Weber, 2010). Weber (2010) suggests that regardless of stated levels of concern, few Americans see climate change as an immediate risk and tend to rank it as less important than other social issues like the economy and terrorism (p. 336). Research by Kahan et al. (2011) explains that, according to Cultural Cognition Theory wherein individuals are likely to form perceptions of risk that reinforce shared values with other members of their cultural group, persons who subscribe to a hierarchical, individualistic worldview can be expected to be skeptical of claims of environmental risks. They state that such people perceive that accepting claims such as climate change would mean ultimately restricting commerce and industry, which are highly

valued by Hierarchical Individualists. Moreover, it seems the discourse of climate change denial includes charges of faulty science, the belief that global warming is natural and part of normal cycles, the insistence that environmental issues are not as bad as the media portrays, and conspiracy theories that claim climate change is a hoax (Leiserowitz, 2005). Lorenzoni & Pidgeon (2006) suggest that an individual's downplaying of certain risks to her/himself can be interpreted as a manifestation of personal denial about the direct effects of climate change and, more importantly, dissociation from any personal involvement in possible solutions (p. 82).

Lack of Scientific Literacy?

Research has shown that Americans view global warming as less important than nearly all other national or environmental issues (Leiserowitz 2005). For example, in a Gallup Poll in 2000, global warming ranked 12th out of 13 environmental issues and the environment ranked 16th on Americans' list of most important problems facing the country today (Dunlap & Saad, 2001). In comparison, Research by The Environics Institute (2014) found that although most Canadians are clearly concerned about climate change and its consequences, one out of ten remain a climate skeptic. Traditionally, skeptical views of climate change have been explained using the Scientific Illiteracy theory. According to this view, skepticism about climate change can be attributed to poor public comprehension of science: members of the public do not know what scientists know, or think the way scientists think, therefore, they fail to take climate change seriously (Kahan et al., 2011). Some feel if the public simply had a better understanding of scientific facts they would align their views with the majority of the world's scientists regarding the alarming trajectory of earth's warming state (and the inevitable consequences). However, research by Kahan et al. (2011) suggests the opposite – it appears that the more scientific literacy one has, the less likely he/she is to perceive climate change as a risk. Their research asserts that although humans are

rational at an individual level, collectively, public opinions are understood to be irrational. It seems that individuals conform their personal beliefs to those that predominate their respective cultural groups in attempts to “fit in” and prevent isolating themselves as social outcasts. This phenomenon ultimately prevents those groups from converging on beliefs that make all of their members materially better off (Kahan et al., 2011). Kahan et al.’s (2012) research reveals that participants’ social values had a bigger effect on their perception of climate change risks than did differences in their degrees of scientific literacy or numeracy:

For the ordinary individual, the most consequential effect of his beliefs about climate change is likely to be on his relations with his peers. A hierarchical individualist who expresses anxiety about climate change might well be shunned by his co-workers at an oil refinery in Oklahoma City. A similar fate will probably befall the egalitarian communitarian English professor who reveals to colleagues in Boston that she thinks the scientific consensus on climate change is a hoax. At the same time, neither the beliefs an ordinary person forms about scientific evidence nor any actions he takes – as a consumer, say, or democratic voter – will by itself aggravate or mitigate the dangers of climate change. On his own, he is just not consequential enough to matter. Given how much the ordinary individual depends on peers for support – material and emotional – and how little impact his beliefs have on the physical environment, he would probably be best off if he formed risk perceptions that minimized any danger of estrangement from his community. (p. 734)

Although cultural values play an important role in one’s expression of dis/belief in climate change, research has shown that a substantial fraction of the population is seen as lacking both the basic knowledge and the psychological capacity necessary to reliably interpret scientific information (Kahan et al., 2011). The result, according to Weber and Stern (2011), is the failure of the public – or at least a large portion of it – to form parallel views of climate change risk held by more knowledgeable experts. Moreover, Eaton (2017) points out that a lack of knowledge around what climate change is and isn’t might also influence one’s views about environmental issues. Her study suggests that her participants’ low levels of climate science literacy may be related to their dismissal of climate change issues.

Furthermore, Lorenzoni and Pidgeon (2006) found a significant degree of mistrust of scientists, governments, and businesses when it comes to communicating environmental issues to the public. According to Tsfatı (2003), very little attention has been devoted to the *consequences* of the public mistrusting the media's messages. He defines "media skepticism" as "a subjective feeling of alienation and mistrust toward the mainstream news media" (p. 67). According to Tsfatı (2003), when audiences trust the media, they tend to accept the climate of opinion presented by the media. However, when audiences are skeptical toward the media, they tend to reject media presentations of the societal opinion climate (p. 66). Moreover, he claims that the higher one's level of skepticism, the lower the agreement with which she/he will believe the media's presentation of public opinion. Additionally, Tsfatı (2003) iterates that although the media may not be very influential in telling us *what to think*, it *does* have the ability to influence our perceptions regarding *what others think*. This is an important insight because, as mentioned previously in the Perceptions of Harm and Risk section, perspectives of public opinion can be persuasive factors toward a collective, cultural mentality.

Lorenzoni and Pidgeon (2006) suggest that if people reject and/or are skeptic of the information they receive via the media regarding environmental matters, individuals are less likely to accept issues such as climate change. In fact, research has shown that displaying behaviours of mistrust in the media can actually be liberating (Tsfatı, 2003) as the ability to resist mainstream media was interpreted as a sense of empowerment. Reflecting on this notion, I recollected statements I have heard in everyday conversations that reinforce this concept such as: "you can't believe everything you hear on the news!" or, "take that with a grain-of-salt" and, "they haven't got me fooled!", etcetera. It seems there is something personally satisfying about being skeptical about almost everything one sees and hears on the news lately, regardless of the source. However, Tsfatı (2003) reminds us that mistrustful

audiences are not totally immune to, but only less susceptible to, media influences on the perceived climate of opinion.

Additionally, research has shown that individuals' interpretations of events tend to fall in line with or reinforce their existing views (Lorenzoni & Pidgeon, 2006). It appears that an individual's knowledge about the causes of climate change may increase or decrease her/his perceptions of risk (O'Connor, Bord, and Fisher, 1999) if her/his views are coherent with values characteristic of groups with which they identify (Kahan et al., 2012). Generally, individuals in the United States are found to have limited understanding of the human contributions to climate change (Lorenzoni & Pidgeon, 2006).

Political Ideology and Worldview

Another factor that affects one's views toward climate change is political ideologies. In 1997, conservatives in the United States began to critique the evidence for global warming and partake in vigorous campaigns against climate science (Dunlap & McCright, 2008). Despite the growing consensus over climate change in the scientific community, conservative leaders continued to challenge the scientific consensus by highlighting the views of a few skeptical scientists (Dunlap & McCright, 2008), and labelling climate change and regulation of energy production to be a "left-wing anticapitalist conspiracy" (Antonio and Brulle, 2011, p. 198). Throughout the 1990's, the fossil fuel industry, represented by lobby groups such as the Global Climate Coalition, spearheaded a public relations effort to cast doubt on the science and reality of anthropogenic climate change (Leiserowitz, 2005, p.1435; see Gelbspan, 1997; Leggett 2001). It seems this effort was successful: research by Brechin (2003) found that only 11% of American participants in his study indicated that the burning of fossil fuels was the main anthropogenic contribution to global warming.

A survey conducted by Davidson and Hann (2012) on attitudes toward climate change in Alberta revealed that political ideology is the strongest predictor of belief in human-induced climate change and the severity of its impacts. Political party affiliation has been shown to have a strong correlation to belief (or disbelief) in the existence and threat of climate change (Weber, 2010). Moreover, Weber (2010) suggests that an individual's political beliefs tend to influence his/her values and can contribute to the forming of allegiances that affect how he/she processes and reacts to information. If an oilfield worker aligns his/her ideals with a chosen political party, his/her views toward climate change will likely reflect the core values of the political group.

Dunlap and McCright (2008) suggest that the acceptance of global warming is higher among Democrats. Opposing parties may have significantly different values and beliefs about social and political issues and about the necessity of governmental intervention when it comes to climate change (Weber 2010). Eaton (2017) suggests that the oil and gas producing regions of Saskatchewan have produced some of the strongest election results for the right-wing Saskatchewan Party. It appears most Saskatchewan oilfield workers would support conservative ideologies which may impact their views on the severity and impact of climate change and global warming. Currently in Saskatchewan, there appears to be tension between resource-extracting communities and the goals of the Liberal government, which is perceived to have an eastern agenda that is hostile to the interests of the west (Eaton, 2017).

An individual's worldview can shape and guide the detection and interpretation of climate events. For example, Weber (2010) suggests that people's fundamental values and worldviews influence which phenomena and risks they attend to, and which they ignore or deny. He claims that people's perceptions about the existence of climate change are socially constructed and may be influenced by cultural and psychological factors regardless of scientific consensus. For example, Eaton (2017) found that some participants in her study

believe that Saskatchewan could potentially benefit from the impacts of climate change. This idea could be socially reinforced and influence others, causing more people to embrace or welcome the effects of climate change. She found that some of her participants feel Saskatchewan has received more rain because of climate change, which, to them, is positive. She also ponders the effect of the ways in which climate change is taught as part of the curriculum in rural areas in the province. Furthermore, she suggests that adults' socially constructed views of climate change undoubtedly shape the environment in which younger generations are socialized.

Socially Constructed Gender Roles in the Oilfield

Gender has also been shown to be a salient factor in peoples' views about environmental issues. Interestingly, studies have shown that although Canadian men are significantly more likely than Canadian women to cite scientific evidence as reason to believe in climate change (Lachapelle, Borick, & Rabe, 2012), women are traditionally more concerned about the environment (Blake, 2001). Thus, in a profession that is predominantly male, as is the case of Canadian oilfield workers (Government of Canada, 2017), it is easy to see how stereotypes can arise. Filteau (2014) describes how North American society has socially constructed an expectation of masculinity for rural oilfield men. He asserts that masculinity does not determine the attitudes, beliefs, values and behaviors of workers; but it does provide a set of rules that shape the way men can perform legitimate 'manly' behaviours. He also reminds us that oilfield work is stereotypically men's work.

Oilfield men's behaviours and views are shaped by societal expectations of their gender and career choice. Angel (2014) explains that an exterior persona of masculinity is typically associated and expected with resource-extraction workers. She asserts that "frontier masculinity" is traditionally characterized by "physical and mental toughness, rugged individualism, competition, emotional self-reliance, and unsafe work practices that save time

and maximize profit” (p. 3) – qualities that are often viewed in opposition to environmental protection. Oilfield work is often referred to as “dirty work” which, according to Hughes (1958, 1962), is a term the public uses to label any occupation that is physically, socially, and morally disgusting or degrading (Filteau, 2015, p. 1154). Oilfield workers are often subjected to a stigma that disqualifies them from social acceptance (Filteau, 2015) which ultimately degrades their sense of self (Filteau, 2015). Ashforth and Kreiner (1999) convey the idea of Moral Taint which occurs when an occupation is generally regarded as somewhat sinful or of dubious virtue (p. 415). Moreover, research has shown that if a specific group within the workforce is perceived in a certain way by the public, they may tend to act according to this stereotype (Angel, 2014).

According to Filteau (2015) many oilfield workers desire a shift in perception regarding the ways others view them. Describing personal narratives of oilfield workers will help explicate their perspectives toward the environment. As one oilfield geologist interviewed in Leonard’s (2012, para 10) study suggested, “Wouldn’t you rather have someone who gives a shit about the environment working for an oil company than someone who didn’t?”

Angel (2014) stresses the importance of understanding oilfield workers’ perceptions of their physical and mental wellness while actively working in the field. This study seeks to better understand workers’ perceptions of the environment and environmental issues, based on their work experiences. The following Research Methodology section will outline this process.

Chapter 3: Research Methodology

This research project utilized a qualitative methodology – inspired by Grounded Theory principles – to explore and describe oilfield workers’ views toward current environmental issues. The exploratory nature of interviews is an important strength of my study that has allowed for a new “grounded” analysis regarding the relationship between oilfield workers and environmental issues to arise. (Bickman & Rog, 2009). Bickman and Rog (2009) suggest that grounded theory enables the researcher to understand the meaning of phenomena and the perspectives that inform the views of those being studied. Because grounded theory is descriptive in nature, I was able to interpret how oilfield workers’ understandings are shaped by their unique circumstances and views (Bickman & Rog, 2009).

This interpretivist position allowed me to attempt to discover *how* and *why* (Raddon, n.d.) oilfield workers in the Moose Mountain area think the way they do toward environmental matters. This study is underpinned by a subjectivist ontology that strives to articulate what constitutes oilfield workers’ sense of reality and the ways in which they construct knowledge (Raddon, n.d.). This Grounded Theory method consists of systematic, yet flexible guidelines for collecting and analyzing qualitative data, and has been applied to inductively develop a novel analysis (Charmaz, 2014) for the current oilfield-related gap in knowledge.

According to Kumar (2005), a qualitative study should be utilized if one wants to observe variation in a phenomenon, situation, problem, or issue (p. 12). This is an appropriate methodology for my study because I explored and described variation in oilfield workers’ views toward environmental issues. According to Suter (2012), to understand a complex phenomenon, one must consider the multiple “realities” experienced by the participants themselves. Qualitative approaches adhere to social constructivism which “honours the understanding of a whole phenomenon via the perspective of those who actually live it and

make sense of it” (Suter, 2012, p.344). My study has enabled oilfield workers to explain their views of the environment based on their experiences. I am not attempting to assess their perspectives as truth or falsity or assign moral judgement, but rather I attempted to understand their reality and the influences that shape their views (Bickman & Rog, 2009).

Because Grounded Theory is an exploratory method, I was able to develop a novel analysis from the emerging patterns in data (Grounded Theory Online, n.d.). My research also advocates for the need to engage in conversation with oilfield workers about climate issues in order to foster understanding and collaboration. I used line-by-line coding of the interview transcripts to ensure academic rigor, which allowed me to become intimate with the data. Moreover, I utilized an abbreviated version of grounded theory in which only one interview was conducted per participant, and thus was dependent on the original data for emerging patterns (Willig, 2013). I continued interviewing participants until evidence of theoretical saturation became present in that no new categories emerged from the data (Willig, 2013). The analysis outlined in the following chapters is therefore “grounded” in the data I was able to collect and provides a framework (Willig, 2013) with which to understand oilfield workers’ views about climate issues.

Research Method and Data Collection – Interviews

Interviews are one of the most common methods used for qualitative research. By conducting 15 in-depth, open-ended and semi-structured interviews, I was able to receive information and ultimately uncover meaning by using descriptive and exploratory methods (Suter, 2012). Providing open-ended interview questions allowed oilfield workers to describe their views of environmental issues in an exploratory and descriptive manner. Conducting these interviews allowed me to be flexible and better understand oilfield social processes (Raddon, n.d.) as I was able to focus on interpreting and understanding their socially-constructed realities (Suter, 2012).

Analysis of Interviews

According to Charmaz (2014), the Grounded Theory process is an inductive approach which involves iterative strategies of going back and forth between data and analysis. I used line-by-line coding to compare responses between and across the interviews which kept me interacting and intimate with my data throughout the coding process. Suter (2012) suggests that qualitative data collection and analysis should occur together in order to make sense of the data as it comes in. He states that interpretation of data is a process of organization, reduction, consolidation, comparison, and reconfiguration (p. 360). Because the process of constant comparison plays a central role in Grounded Theory, I was able to recognize emerging themes between respondents' answers, and the resulting relationships between them became more focused (Suter, 2012). From the descriptive interviews, I was able to gain perspective on oilfield workers' views and the factors that influence these perceptions. Following Charmaz's (2014) recommendation, I used Grounded Theory methods to shape and reshape my data collection which ultimately helped to refine the data and increase my knowledge of oilfield workers' constructed realities.

Using an inductive approach allowed me to identify and ascribe 65 codes by analyzing and describing participant responses to the set questions I asked them. I then manually counted how many times a theme was directly or indirectly referenced in the transcript and kept a spreadsheet of the total occurrences. This permitted me to discover which categories were most commonly referenced and prominent. The prominent categories were labeled as high-importance for emerging themes from participant responses. Ultimately, similar categories were combined to form major themes which make up the essence of this paper in the subsequent chapters.

Participant Criteria

Although each one of the fifteen individuals I interviewed is unique regarding personality, perspective, position, and years of experience, the uniform criteria that every participant adhered to for this study is:

1. He/she is an oilfield worker within the rural area(s) surrounding Kenosee Lake in the Moose Mountain Provincial Park area (100km radius from Kenosee Lake).
2. She/he is 18 years of age or older.
3. He/she is involved in some form of the extraction, distribution, and/or maintenance aspect of oil production in some manner (no administration/secretarial workers, medics, caterers, etcetera) for the sake of more purposely targeted participants – “oilfield workers”.
4. She/he is legally employed and able to work for a Canadian oilfield company.
5. He/she voluntarily consented to participating in my study.

Note: Please see “Participant Backgrounds” on page 39 for more descriptive details regarding participant demographics, experience, job titles, age, etcetera.

Limitations and Benefits

Limitations for the qualitative interviews is they were time consuming, and the data analysis was challenging and complex (Raddon, n.d.). Mertler (2016) reminded me that because interviews have to be completed face-to-face, additional time and personal expense was required on my part. Mertler (2016) highlights another important limitation – even though the oilfield workers may believe (or tell me) they are being accurate and honest, they may in fact not be. He asserts that socially constructed reality theories claim that there is no “reality” to peoples’ beliefs; they may change depending on whomever one is conversing and interacting with. Mertler (2016) indicates that sometimes respondents will answer with a socially-accepted response – what they think I want to hear, especially if they are being asked

questions of a sensitive nature. Therefore, there is a chance that some might either tell me what they think *I* want to hear (because I am an environmentalist, they might want to (somewhat) align their views with their perceived notions of what they feel I would like to hear about a certain topic), or they might feel the need to defend their sense of industry pride by answering within the realm of oilfield stigmas and stereotypes. In order to promote genuine responses, I tried to provide a safe and nonjudgmental interview-environment by encouraging participants to answer as honestly as possible.

A benefit of administering semi-structured interviews was it allowed me to “customize” the questions to meet the needs and goals of my study (Mertler, 2016). The open-ended questions beginning with “how” and “what” are best geared for the exploration and discovery of complex processes (Suter, 2012) and thus allowed me to describe oilfield workers’ perceptions of a controversial and, at times, uncomfortable topic. The interviews followed an inductive approach which in turn allowed the data to speak for themselves when the emergence of conceptual categories and descriptive themes arose (Suter, 2012).

Additionally, asking participants the question, “is there anything I didn’t ask you about this topic that you feel is important?” gave permission to the respondents to add other categories that may not have otherwise arose. This led to a greater variety of responses and resultant categories that ultimately enriched the data from which theory was grounded. Moreover, administering interviews allowed me to further develop a relationship with each participant which proved to foster a safe and trusting conversational space.

Reliability and Validity

Willig (2013, p. 72) asserts that “we cannot ask questions without making assumptions.” Thus I feel it is important to acknowledge that I had my own biases and assumptions regarding oilfield workers’ views about, and impact on, the environment prior to

embarking on this research. I attempted to reduce my bias by being open-minded and self-reflective after each interview and doing everything in my control not to be judgmental toward participants and their responses. I rigorously strived to collect “rich” data (Bickman & Rog, 2009) that was meaningful, accurate, and transparent by encouraging participants to describe their perspectives in more detail and/or probe them to go deeper with their responses. I did not ask leading questions which allowed participants to reveal their honest opinions about each question. Because this was a qualitative study, respondents described their realities based on their own epistemological stance which is a form of validity in itself – as long as participants described their own truths as honestly and genuinely as they understand them.

Although my thesis will be publicly accessible in that others may analyze my paper for cross-case comparisons to other similar contexts (Suter, 2012) or reuse my interview/survey questions for future studies, my research will not be transferable as the results are not meant to be representative. This research is an outcome of a snapshot in time resulting from the perspectives of 15 oilfield workers in the Moose Mountains. I do not assert that the views of the respondents would necessarily be similar to other oil workers in differing areas of Southeast Saskatchewan or to workers from other extractive industries. However, I can draw conclusions based on the results of this data and apply it to a broader context of preexisting environmental data/conversations.

Because I have lived in Moose Mountain Provincial Park almost my entire life, I have inevitably developed personal relationships with many oilfield workers in the area. To avoid any ethical misconduct (Hamilton & Corbett-Whittier, 2013) issues, it is important for me to be transparent and note that I was acquainted with 11 out of the 15 participants on a personal level prior to interviewing them. In fact, one participant is a family member. I am keenly aware that my personal associations might have affected the ways in which some oilfield

workers responded to my questions. I feel this is both a strength and a weakness of my study. On the one hand, I believe having personal affiliations positively affected my study because participants felt safe and comfortable around me, simply from knowing about me as a community member. I am hopeful that they felt encouraged to share their perspectives freely based on knowing my personality and reputation. Conversely, having personal connections to participants may have had a negative effect on my research if participants spoke out of fear or concern that I might judge their responses and thus, may have caused them to respond in such a way that is not true to their real opinions. For example, knowing I'm an environmentalist might have caused some workers to answer in a way that appeases me and/or aligns with what they believe is my perspective on the topic in order to maintain a positive social relationship.

I utilized a snowball sampling technique wherein participants recommended a fellow industry worker that might be willing to engage in an interview with me. It was interesting how participants felt the need to connect me with another worker they felt was of solid moral standing: "*he's a good guy you should talk to him.*" If I asked about an additional, specific person that I knew also worked within his/her affiliated company, a few responded with a retort similar to, "ah he doesn't know anything you don't want to talk to him." I interpreted these types of responses as participants desiring to put me in touch with someone that they felt is intelligent and/or cares about environmental issues. I am pondering whether this is because they feel strongly about environmental issues (in a concerned not controversial manner) and want me to converse with someone having the same values to "help" my study, or because they did not want me to talk to somebody that they perceive is going to make the industry look bad. I got the sense that some feared their colleagues might portray ignorance which might, in their view, reinforce current stereotypes and stigmas of oilfield workers.

Regardless, I appreciated the thoughtfulness of participants' recommendations for additional interviewees.

According to Suter (2012), many researchers argue that the most important criterion for judging a qualitative study is its credibility. Therefore, it is important to note that I strived to ensure the data quality, its analysis, and the resulting conclusions (Suter, 2012) are sound, thorough and legitimate.

Ethical Considerations

First and foremost, I achieved individual participant consent by having respondents fill out a consent form. I also collected e-mail addresses from each participant and sent a copy of the interview transcript upon its completion so that respondents could have a copy for her/his records. Moreover, I clearly and concisely explained my research purpose and objectives and informed each volunteer that he/she has the right to refuse and/or withdraw from my study at any time (Hamilton & Corbett-Whittier, 2013) prior to the submission of my thesis for formal examination.

I understand that participants were apprehensive to disclose personal views in fear of back-lash from their employers. However, I consider this factor to-fall under the *Minimal Risk* category as defined by the Royal Roads University's Research Ethics Policy (2011) where "the research in which the probability and magnitude of possible harms implied by participation in the research is no greater than those encountered by participants in those aspects of their everyday life that relate to the research" (p. 3). I am confident that I did everything in my power to alleviate this stressor for participants and protect their identity and ensure confidentiality: I informed participants prior to interviewing them about the ethical guidelines I would be adhering to. In turn, every participant was comfortable allowing me to express his/her position within the industry as long as his/her company name remained

protected. Therefore, specific job titles are frequently mentioned throughout the analysis section of this thesis, but company/employer names have been removed as per participants' requests.

Participant Backgrounds

The genders of the fifteen individuals I interviewed are 13 men and 2 women. One participant identified as being Metis with an Indigenous background. The age range of participants spanned from 25 years to 67 years – the average age is 42, with a median age of 44.

The number of years' experience working in the oilfield ranges from 8 months to 40 years. The average level of experience is 17 years. The varying positions within the oilfield that the participants occupy (in alphabetical order) are: battery operator, construction, drilling rig, geologist, hydrovac truck operator, maintenance crew, petroleum engineer, production, roughneck, service rig, and truck driver/rig mover. Educational background ranges from high school diplomas, to 3 bachelor's degrees.

Six participants currently reside within Moose Mountain Provincial Park – ranging from nine to 35 years permanently living in the park. The remaining nine respondents live in 6 respective communities or farms within 50 kilometers of the park. All participants consider themselves to be “locals” with unique attachment and investment to the area regarding family lineage, sense of place, and/or identity discussed further in the following chapter.

Chapter 4: The Power of Place: Identity, Investment, and the Golden Rule as Locals

Sense of Place – Defined

Hess, Malilay, and Parkinson (2008) define place as “nested collections of human experience, locations with which people and communities have particular affective relationships” (pg. 468). They suggest that people’s affective ties to a place are deep and important for overall wellbeing. Also, they argue that humans exhibit strong place attachment and identity that increases with length of residency. Moreover, Stedman (2003) asserts that the *physical* environment is equally as important as the affective connection to the construction of one’s sense of place as it gives form to meanings based on one’s experiences. He suggests that sense of a place is not solely constructed via affective experiences but is largely influenced by the physical setting itself. He believes that the natural environment underpins symbolic meanings on which place attachment is based. Sense of place notions are a common theme that emerged from every respondent in my study regardless of the occupation they held within the industry. Participants in this study frequently spoke about their affective relationships with community members and other “locals”, and with the physical landscape in the Moose Mountain area.

Sense of place is an important factor for consideration in this study for two reasons. First, there is a large gap in the sense of place literature (see Stedman, 2003; Kudryavtsev, Stedman, and Krasny, 2012) regarding the correlation and/or influence of one’s sense of place and her/his environmental views, identity, and attachment (Hess et al. 2008). Second, according to Thomashow (2002), place-based orientation is the foundation from which to explore global environmental issues. He argues that having a strong sense of place can convey feelings of rootedness and a stability in a world of dynamic environmental change. He asserts that “achieving a sense of place allows you to identify with the place where you live, to take responsibility for its quality of life, and to become familiar and intimate with

your local surroundings” (pg. 77). Therefore, sense of place is an important factor that has undoubtedly affected these local workers’ environmental insights. Kudryavtsev et al. (2012) suggest that sense of place is a combination of two main concepts: place attachment and place meaning (see Farnum, Hall, and Kruger 2005; Semken 2005; Semken and Brandt 2010; Semken and Butler Freeman 2007; Smaldone, Harris, and Sanyal 2005, 2008; Stedman 2000, 2002; Stokowski 2002; Trentelman 2009; Van Patten and Williams 2008).

Place Attachment

Kyle, Graefe, Manning, and Bacon (2003) believe that place attachment is the extent to which an individual values or identifies with a particular environmental setting. Place attachment often implies a positive bond between people and certain places (Vanclay, 2008). Shumaker and Taylor (1983) believe that we are attached to places because of outstanding physical features. Additionally, research suggests that stronger place attachments tend to develop with attractive landscapes (Kaltenborn, 1998). It seems there is no shortage of attractive physical aspects in the Moose Mountains. In the case of the Southeast Saskatchewan oilfield workers in my study, respondents were quick to identify the physical aspects of the Moose Mountain area they valued most such as its beauty, peacefulness, outdoor recreational opportunities, fresh air, noiselessness, ability to see the stars at night, and more. A directional driller iterates his appreciation for the physicality of this place: “I enjoy being around the different scenery – the pastures, the valleys, the Moose Mountains, during the different seasons throughout the twenty-four hours in a shift.” Workers were also eager to share the recreational activities they enjoyed partaking in such as hiking, biking, ATV use, snowmobiling, snowshoeing, running, hunting, fishing and more. Participants considered themselves lucky to live where they do because of the rich attractiveness of the Moose Mountain area, and all it has to offer recreationally.

The majority of oilfield workers I interviewed were born and raised in the Moose Mountain area and are a testament to Hess et al.'s belief that sense of place grows stronger the longer one lives in an area. One participant explains, "I've lived in this area pretty much my whole life and I've always been concerned about the environment especially in our area . . . we live in a provincial park which is just beautiful, and I think it's important that we look after it for future generations." Participants were eager to share with me the aspects of the Moose Mountain area that they were grateful for such as the scenery, beauty, recreational opportunities, and the fact that it's "home." One participant, not originally from the Moose Mountain area, that now considers himself a "local" after being here for 25 years, explains the place-based activities he enjoys and how quickly his place attachment formed:

In the wintertime we play hockey, Ski-doo, ski, hunt; in the summertime we go boating, fishing, biking . . . I moved out here and I loved the small town. And I could never live in the big city again in my life. And the people are awesome, it doesn't matter if you're old or young, you can get along with everybody here. Well, as you know. I hang out with your dad and he's old.

My interviews indicated a strong bond between people and place (Kudryavtsev et al., 2012) in the Moose Mountain area.

Kudryavtsev et al. (2012) suggest that place attachment can be developed not only through direct experiences with places, but through frequent and positive experiences. All of the participants in my study spoke of their experiences living and working in the Moose Mountain area with fondness and appreciation. Research has also shown that interactions and relationships with other people also influence place attachment (Kudryavtsev et al., 2012; Stedman, 2003). Moreover, research by Larson et al. (2013) suggests that although connections with place are initially inclined to be associated with environmental wellbeing and the physical landscape of a place, over time these connections give way to strong social connections. Almost every respondent spoke highly of the characters and quality of workers and community members in the southeast. A worker with 40 years of experience explains,

“You know, the oil industry – people work hard. People respect, I think the oil industry people respect a lot of things. They are a great big family.”

Place Meaning

Kurdyavtsev et al. define place meaning as the “symbolic meanings that people ascribe to settings” (p. 232). These authors use place meaning to uncover answers to fundamental philosophical questions such as, “what does this place mean to you?” Place meanings are social constructs comprised of human intentions and experiences (Relph, 2007) that reflect an individual’s environment, social interactions, culture, politics, economics, and esthetic perspectives (Ardoin, 2006). Additionally, Hlushko (2017) asserts that the people-place connection can be hard to define because explanations of meaning are deeply personal.

According to Larson, De Freitas, and Hicks (2013), there are seven variables that help develop the meanings associated with sense of place. They are: *length of time a person stays in a place; location of residence; where they were born; community involvement; membership of associations; whether they feel respected; and whether they are considered a local* (p. 227). Additionally, according to Gustafson (2001), place meanings can be categorized into three major themes: *environment, others, and self*. The following paragraphs of this sub-category will highlight relationships between Moose Mountain oilfield workers’ place meanings as identified by Larson et al. and Gustafson, and their environmental views.

Respondents of my study eagerly shared sentimental aspects of the land they hold dear to them. The following passage from one particular battery operator speaks to Lars et al.’s “*where they were born*” category, additionally falling under Gustafson’s “*environment*” theme for place meaning:

For me it goes back to how I grew up. We lived off the land so you had to respect it, right? When I grew up we ate wild meat and fish, we literally lived off the land. Our wood, we cut wood, our lumber, for everything that you take from it [the environment] you have to respect it, you know?

This quotation combines the operator's memories about growing up in a particular area and his appreciation for the natural environment. Clearly, his place meaning is derived from positive environmental memories in a place. In Larson et al.'s 2013 study on sense of place, seventy seven percent of respondents selected aspects from the natural environment as being of high importance to their overall wellbeing. The majority of the respondents of my study, like those of Larson et al.'s research, iterated that physical aspects of the natural environment are important to them. The same operator conveyed his belief that the provincial park of Moose Mountain should be preserved and treated with respect, "Well it's just the scenery, you know, kinda seems like it [the park] should be a little more protected here." Clearly his place meaning is rooted in the natural environment.

Another operator reveals aspects of his place meaning that might fall under Gustafson's "*others*" theme when he expressed concern over the loss of historical sites around the province:

...we just have to make sure that we are not losing land. That we are not losing things that are important in our country. Like say, heritage sites. Heritage farm things because there's a lot of cut-backs on heritage farms right now. So, not just oil, but construction in general, are we losing our history? Things that should be important and are important in this countryside.

This participant's trepidation over the potential loss of heritage farms shows that within his place meaning he values traditional, cultural aspects of his community. This ties into Larson et al.'s "*community involvement*" variable in which this particular participant feels obligated to be an advocate for, in his opinion, important historical landmarks within his municipality. His place meaning houses a responsibility to ensure significant historic sites do not fall by the wayside.

An oilfield truck driver (who is also currently a farmer) expresses his version of Larson et al.'s "*length of time a person stays in a place*" and "*location of residence*" categories as well as Gustafson's "*self*" place meaning theme, through family history and

lineage: “My great grandfather settled down just a few miles from my farm in the late 1800’s. He was some of the first settlers out here.” This particular respondent was proud to share the length of time that his family had occupied a specific space in the Moose Mountain area. His place meaning is derived from generational inhabiting of land and working on that land both as an oilfield worker and as a farmer.

As the above quotations demonstrate, place meaning plays an important role in the lives of the oilfield workers I interviewed. In summary, place attachment reflects *how* strongly people are attracted to a certain place, while place meaning describes the reasons *why* they exhibit this attraction (Kudryavtsev et al. 2012).

Investment and Responsibility as Locals

Larson et al. (2013) suggest that community involvement, membership of associations, and whether one is considered a “local” are pertinent factors to an individual’s sense of place. Typically, being a “local” means being an inhabitant of a particular area. But for the oil workers of the Moose Mountains, the title of “local” encompasses much more than simply belonging to a physical space – it seems to include perceived, earned values such as environmental responsibility, accountability, and a standard of moral character.

Participants of my study stressed the correlation between making a livelihood and living in a particular area, and their care-and-concern for the environment that results from being an active member of the community. Most attributed their professed high level of concern about the physical environment to self-appointed accountability to care for the natural landscape because they are “locals;” and they believe it is their responsibility to do so. A battery operator echoes this notion of accountability: “if you grew up here and you live here, and this is where you’re raising your kids, you’re probably more susceptible to keep it a safer, cleaner, better place to live.” This participant implies that invested locals have a

responsibility to ensure the sustainability of the area for future generations of families that inhabit the Moose Mountains. A driller speaks to this belief:

Participant: I would say the local people show more [environmental] respect than the people here just getting a paycheck. The local people show more respect than the out-of-area people.

Shelby: Why do you think that is?

Participant: Because they are only here to take the money and leave. Whereas we live here, and we support it. We go swimming in the lakes, we go fishing in the lakes, we are hunting in the trees, we are doing all that stuff.

Attaining a “local” status seems to be very important to the participants of my study and seems to imply that one is of sound moral and environmental character. This parallels Larson’s et al.’s (2013) study in which the respondents’ feelings of being a respected local were deemed important for their environmental wellbeing.

It seems that achieving the title of “local,” from years lived in the area and/or substantial community contributions or involvement, carries a respectable connotation symbolic to a proverbial “badge of honour” which implies self-imposed environmental responsibility. A battery operator demonstrated his perceived environmental responsibility by sharing a story about saving a turtle that was attempting to cross the road on his way to work one day: “you probably won’t find someone that probably cares more about the environment than I do . . . I have gotten pissed-on for rescuing and relocating a turtle!” The operator laughed as he showed me photographs on his Iphone of the small turtle that urinated on his hand while moving it from the middle of the road to the grass in the adjacent road ditch. It seems he felt a sense of obligatory duty to ensure the safety of the turtle and showcased this act as an example of his environmental responsibility.

Larson et al. (2013) suggest that it is important for people to recognize that they are a part of the ecosystem in which they live – and vice versa. One Indigenous participant

explains that, “us guys [locals] are here for life” and acknowledges the resultant responsibility that arises from being a permanent resident benefitting from the resource-rich area. He explains, “I protect it [the environment] . . . because I’m living here. But I’d be the same anywhere because we only have one land and if you contaminate it and wreck it. And I think maybe that comes from being local.” This participant conveyed feelings of Indigenous responsibility when he shared stories about conversing with elders on a nearby reserve because he felt personally obligated to rationalize the oil activity taking place within the reservation to members of that band. He viewed this collaboration as a responsibility to protect and educate the local indigenous people about the resource extraction (and its consequences) taking place on their land.

Respondents seemed to be keenly aware of their reliance on the resources of the Moose Mountains for both sustenance and recreation. They demonstrated genuine concern for the environment. A battery operator explains:

I mean I’m an outdoors guy. I hunt in the areas that I work in. You know, I snowmobile in them, I quad in them, I drive in them every day . . . a lot of it is pasture land and a lot of wildlife so you do get more of a respect for it, for sure. I always have . . . but again, I’m an outdoors guy; I was kind of raised that way. Like we spent a lot of time outside and in the bush hunting and fishing and you pack-it-in you pack-it-out kind of thing.

Many participants seemed to believe in a reciprocal relationship with the environment in the Moose Mountains area – a type of “utilize it but look after it” mantra. A former oilfield-business owner states: “Because you have to [look after the environment]. You still use it, still live in the same area, so it doesn’t matter. Nothing changes for me. I truly believe in protecting the environment.” Overall, the oil workers of my study seemed genuinely concerned about sustaining the ecosystems that comprise the Moose Mountains.

Industry and Identity

The participants of my study seemed to acknowledge not only their physical place in the Moose Mountain area, but their affective and subjective place in the communities surrounding the park. Through their expressions of environmental and economic responsibilities as oilfield workers, they described the industry as a key component of their place attachment. Respondents were proud that oil activity in the area provides and allows for so much of what they love about their communities. Elements of pride and in-group camaraderie inevitably develop from hard-work and the oil industry lifestyle (Houser, 2010). According to Rich (2016), workers build narratives from existing discourses to create a coherent set of beliefs about the self. She also asserts that identity requires active participation on the part of workers as they negotiate multiple identities. Participants often made connections between their respective jobs, their bountiful wage, and their company's contributions to community activities to highlight benefits of oil extraction in the Moose Mountains.

Sense of community and being invested as a contributing member of rural towns in the Southeast area is a prominent theme that emerged from every participant. A maintenance worker iterates, "Because if you've lived here all your life then it's home. And so, you *do* have a vested interest." Research by Eaton and Enoch (2018) parallels my findings that the oil industry in Saskatchewan engages in many acts of corporate social responsibility via donations, community events, emergency services, and general community and recreational infrastructure. It seems rural towns are inevitably dependent on the oil economy for a breadth of necessary services that keep these communities operational. Many of the respondents mirrored a perspective from Eaton and Enoch's (2018) study wherein some community members link the very survival of their communities to the existence of the oil industry. They write:

Interviewees were keenly aware of how much they rely on the oil industry, to the point that some respondents could not imagine their communities being able to exist without it. Oil industry charity quite literally allows people access to health, education, recreation, and other services that they might not otherwise have. Here, the economic identity of the community . . . is synonymous with the oil industry. (p. 64)

Many workers highlighted that oilfield businesses are interconnected with many aspects of the community through employing other local people, monetary donations, community functions, and sports teams. An oilfield construction worker and business owner explains:

Well it's the people. The people, the farmers, the people that live in the towns. It's everything. You're involved with everybody that's around here. And that's in sports or whatever you do. Your kids play against each other. You coach, you play with each other, you know, all that stuff.

You do it [give donations] to show that you're supporting the community and for me, going back to the (company name) drilling days, look how much I donated around the area. There was probably nobody that donated more and I donated to all over because I drew from all over. So that's why I donated to the Estevan Bruins [hockey team]. I draw from all different communities for my workers so on that Estevan Bruins hockey team I'd have one of my workers – maybe that was their son or maybe that was an uncle that worked for me. So, it was giving back . . . I wanted people to know I'm part of this community.

A sense of accountability and responsibility surfaced from the workers as they shared their stories about being invested in the community and contributing to their hometowns. Participants proudly spoke about their multi-faceted roles within the community from being coaches, sponsors, and volunteers that make their communities thrive. Research by Eaton and Enoch (2018) supports the above points when they suggest that oil industry philanthropy is vital to the recreational life of rural, oil-producing communities because much of the infrastructure that allows recreation and leisure opportunities is made possible by the oil industry.

Conversely, not everyone believes that donations from local oil companies are innocently contributed with genuine intentions for bettering the community. Some feel that contributions and community-engagement efforts from oilfield companies are merely

“designed to cultivate trust and align the values and interests of the community with that of the industry” (Eaton & Enoch, 2018, p. 64). Eaton and Enoch (2018) suggest that oilfield companies are concerned with maintaining their “social licence”, meaning the industry needs to have ongoing approval and acceptance of the community in order to successfully continue its operations. Eaton and Enoch (2018) reiterate that there has been little organized opposition to oil extraction in Saskatchewan because companies have built-up their social licence by diminishing the negative externalities of corporate operations, while encouraging the positive through corporate social responsibility (CSR) actions such as building health clinics, schools, providing educational materials and training, and/or contributing to other needed infrastructure within the communities where it operates. They summarize Thomson and Boutilier’s (2011) notion of “psychological identification” – wherein the oil industry achieves a uniquely robust level of social licence in Saskatchewan communities – when they write:

In these findings, a high level of social licence manifests itself as an intense identification with industry, to the extent that the community perceives its interests as mutually aligned and will actively defend industry from criticism through the adoption of key industry discourses on a host of energy-related issues. (p. 54)

It seems that some may turn a blind-eye to the negative aspects of the oil industry as there is currently no viable alternative economy, and nearly everyone in rural Saskatchewan is tied to the industry in some way (Eaton, 2017, p. 15). Eaton (2017) believes that because very few institutions in rural communities are untouched by oil interests, a “culture of silence” exists that prevents people from voicing their grievances about the impacts of the oil industry. She suggests that people may be fearful of speaking-out against oil operations not only because they acknowledge and accept their dependence on fossil fuels, but because they fear the economic repercussions and/or community backlash that will inevitably occur for going-against the community’s (supposed) main lifeline. Hlushko (2017) parallels Eaton’s claim:

With economic goals at the forefront, neoliberal economic visions dictate the role of the industry on its endless search for capital accumulation, the rolling back of the traditional government regulation to rely on market indications, and the role of the community as watchdogs to keep the industry in line with their values. (p. 70)

Hlushko believes that oil companies focus on creating an atmosphere where capitalism thrives by promoting engagement efforts that blur both physical and epistemological boundaries between industry and community through a neoliberal economic lens. Moreover, she asserts that the oil industry utilizes neoliberal techniques in order to reinforce the notion that oil extraction is beneficial for communities and safe for the environment. Hlushko believes that oil capitalism develops as the lived experience of oil becomes normalized in the community (p 109). She writes:

In order to keep a positive image, many oil companies go above and beyond the health, safety, and environmental standards required by the Petroleum Branch and are aiming to project the image of the good corporate neighbor in the community. Companies are doing this by putting resources into education and welfare in the community, a social vacuum (perhaps abetted by neoliberal deregulation of many social services) being filled by corporate social capital and philanthropic investments/endeavours . . . The ostensibly altruistic intention of these donations becomes more opaque when oil companies sponsor programs in which they have a vested interest. (p. 78-79)

She believes that because the public plays such an important role in governing oil companies (because company reputation is important for running a successful operation), community relations are vital to the industry's survival in rural areas. Moreover, she asserts that there is a potential for a conflict of interest as the presence of the industry in various community institutions helps to normalize oil activity in the community and justify the role of the industry in society (p. 80). She suggests that oil's corporate social responsibility programs send messages that they care about communities and are willing to go above and beyond their legal responsibilities to be good neighbours. It seems oil's sphere-of-influence may be much more powerful than one might initially speculate.

Whether acts of corporate social responsibility from oil companies in the Southeast are perceived to be offered with honourable intentions from a community-minded or locally

invested-type frame, or conversely, through a conflict of interest and/or business-oriented lens of getting the company name in the public eye to legitimize oil operations in the community, it is a fact that the industry provides many living in rural areas access to leisure opportunities and essential health services and institutions. Eaton and Enoch (2018) believe that the perceived economic dependence on the oil industry, coupled with impactful corporate social responsibility initiatives and community engagement efforts, have allowed the oil industry to obtain a robust social licence to continue operating in Saskatchewan.

The Golden Rule

Another prominent concept that arose from the interviews in regard to environmental perceptions is the “Golden Rule.” Generally, the Golden Rule means “do unto others as you would have others do unto you” or, more simply, “treat others as you would be treated” (Burton & Goldsby, 2005, p. 371). Burton and Goldsby (2005) summarize that the rule can be used as a guide to treat others with respect – respect to be defined according to one’s rational reflection using her/his own values and moral principles as a guide. Moreover, they suggest that the rule allows for varying treatment if different moral principles arrive at different views of the morality of a particular action and, it should be noted, it is not the basis for a single normative ethical system (p. 375). Therefore, it is important to acknowledge that many of the ‘Golden Rule-oriented’ environmental perceptions that the respondents spoke of stem from their individual experiences, personal moral standards and their constructed understandings of the human-environment relationship. Workers frequently made comments related to a perceived exchange of reciprocity and respecting others’ land while working on it the same way they would want their land treated if others were working there. A production worker – who also farms – explains:

I kind of believe in that whole treat other people the way you want to be treated. I wouldn’t want an oil company coming in and leaving garbage all littered across my yard or out in the trees where I’m hunting. I’d be right pissed-off. So, I treat those

sites out there the same as if it was, you know, my own land because I do have my own land. That's the way I would want it left . . . I have to be very aware that when I go out I have to treat their sites the exact same way that I would want my land treated. And it helps too if, when I meet with them, they know that I farm. Because they are like, "well you know what it's like," to a point.

Accompanying the Golden Rule, trust and reputation appear to be highly valued as social contracts that measure a fellow worker's integrity, character, and moral ethic when working on another's land. Burton and Goldsby (2005) support this finding when they suggest that the rule is a moral principle that guides individuals' actions based on his/her prediction regarding the effects that his/her actions might have on the lives of others. Moreover, it requires the ability to imagine oneself in the receiving end of such actions and an assessment of whether one would be pleased or displeased with the same treatment. A battery operator and service rig area manager iterates:

Around here it's pretty unique where the oilfield is where we all live. If you think about Alberta – people might grow up in Alberta their whole lives and never see a pumpjack. And it's one of the biggest oil fields in Canada, right? So you're more out in the bush kind-of away from civilization. Whereas here, you're literally in some guy's backyard, you know? So I think that helps a lot for Saskatchewan [respecting other's land]. And also, like 80% of the people that work here are famers and people that grew up here, so a guy just knows that is some guy's land . . . you're drilling in your backyard, so people tend to take more care and caution around locations, you know?

Shelby – Do you feel differently about the environment or nature when you're at work vs. when you're at home doing recreational stuff?

Service rig area manager – No I don't think so. Work and home you have to have certain values in your life. I think I take those values no matter what I do.

Shelby – Can you explain those values a little bit?

Service rig area manager – I guess like caring, right? You care for our fellow companions, you care for your guys at work, you care for your family at home, you're careful at what you do, and you're always trying to teach and trying to learn. So you're constantly being a role model and constantly looking-up to someone else at the same time. I think the values of just being human more or less.

Many respondents seem to utilize the Golden Rule as a guideline to treat others with consistency and respect (Burton & Goldsby, 2005). Participants explained that it is simply

common courtesy to leave another's land in favourable condition and to neglect to do so would be to risk one's reputation as a decent person. In rural communities where many know who one works for, who one's family is (and the role they play within the community), and a general sense of who one is as a person – reputation is of highly valued importance for maintaining a solid moral standing. My findings echo a study by Larson et al. (2013) about sense of place as a determinant of people's attitudes towards the environment. They found that individuals assign the greatest overall importance to social values of their respective communities. The participants in Larson et al.'s study also largely valued social and economic values and were primarily farmers. This is an interesting comparison to my study because almost fifty percent of my respondents are presently or were farmers at one point; and every participant highly values social relationships as well. Interestingly, research by Drenthen (2009) suggests that individuals with greater social and economic values have been related to exploitative relationships with the natural environment. This correlates to my findings because almost all the oilfield workers in my study regard social values with high importance and are obviously connected to exploitive relationships with the natural environment through oil extraction activity.

According to Burton and Goldsby's (2005) reiteration of Gensler (1996) and Wattles' (1996) discussions, the Golden Rule is not a formal, universal ethic nor is it without criticisms. They believe the assumption that humans have basic commonalities with similar desires is simplistic and self-centered. Moreover, they reiterate that although the rule allows us to put ourselves in another's place, it does so using our own desires and standards of right and wrong which in turn neglects others' worldviews and wishes. Ultimately, they suggest that the rule is more complex than it appears, and that the complexities are multiplied when those affected by a decision are included. Therefore, although the oil workers of my study spoke empathetically about the importance of demonstrating great care for the environment

while working on others' land, their opinions are based on personal standards of environmental protection and may not reflect the standards of those affected by the oil activity.

Larson et al. (2013) suggest that sense of place concepts present opportunities to incorporate social-ecological values into environmental decision making. They believe that individuals' place meanings and identities are derived from the natural environment but are more often made up of a combination of natural and social factors. They suggest that sense of place is ultimately about the meanings and connections individuals develop that include the social relationships and interactions people experience in a place. The Moose Mountain oilfield workers of my study encompass a strong sense of place both in a physical sense from aspects of the natural environment they appreciate as well as highly valued social relationships with other workers and community members. Respondents perceive their company's donations to local events and facilities as obligatory contributions for being invested members of the communities in which they reside. Workers feel it is their responsibility as locals to ensure the continued survival of their communities both operationally and environmentally. Moreover, participants regard reputation, integrity and the Golden Rule as important values that act as social contracts that guide behaviour. These values are personal standards that facilitate conduct when dealing with both environmental matters as well as maintaining respectable relationships with land owners.

Chapter 5: Moose Mountain Oilfield Workers' Perceptions of Climate Issues

Natural systems change. They have always changed and will always change (Dearden & Mitchell, 2012). However, Dearden and Mitchell (2012) assert that human activities have become a main driving force behind accelerated global climate change. Moreover, they suggest that changes not only occur as a result of human activity, but also from shifts in values, expectations, perceptions, and attitudes, which affect human behaviour and ultimately influences interactions between societies and natural systems (p. 3). It is well known that the topic of climate change – *a change of climate which is attributed directly or indirectly to human activity and which is in addition to natural climate variability* (IPCC, 2014), is not a new issue in Canadian discourse. For years, many Canadians have been discussing, debating, and expressing their perceptions of the main causes of global climate change and its resulting consequences. Although energy conservation and energy efficiency can be controversial discussion topics for opposing groups in Canada, research has shown that they are key to economic and environmental sustainability because, according to Homer-Dixon (2010), the oil and climate challenges are both rooted in our current energy system (p. 57).

There are many factors that influence one's belief in, and epistemological stance toward, anthropogenic climate change. Research has shown significant differences in levels of belief on the existence of climate change across the Canadian provinces and territories (Lachapelle et al., 2012). Lachapelle et al. (2012) asserts that public views on the existence of climate change vary widely in Canada, depending on the geographic location of respondents. Moreover, they suggest that these differences in opinion correlate with the carbon-intensity of each province – belief in climate change in Saskatchewan is significantly lower than the national average of 80 per cent. Research by Mildenerger et al. (2016) found that people in South-eastern Saskatchewan are among the least likely in Canada to think that the earth is warming due to increased human activity. Eaton (2017) found that reasons for this

anthropogenic climate change skepticism might include: participants' doubt of scientific information, their belief that Saskatchewanians' contributions are too small to matter and the perception that Saskatchewan might benefit from the impacts of climate change (p. 6-8).

Political messages from the current Saskatchewan Party government facilitate neoliberal ideologies that influence the people of Saskatchewan. Neoliberalism – *a coherent set of practices, policies, and ideas including free-market ideology, deregulation, and the cutback of social services* (Huber, 2012, p. 299) – is having an influence on Saskatchewan residents. Neoliberal ideologies, headed by government and industry agendas, can proliferate strong convictions against energy policies that other provinces are currently implementing in order to lower GHG emissions in Canada. For example, in 2002 Canada withdrew from the Kyoto protocol partly due to political deadlock between the federal and provincial governments regarding what to do about climate change emissions (Lachapelle et al. 2012). Recently, not only has Saskatchewan opted-out of the federal government's proposed carbon tax but Premier Scott Moe has declared that the province will go to court over the imposed tax because "a carbon tax just simply does not work" (CBC News, 2018). Moreover, brochures delivered this summer from the Saskatchewan Party Caucus (2018) did not mix-messages about how Saskatchewan residents should feel toward current energy issues the province is facing. Some of the passages read:

The NDP may want to wave the white flag but your Saskatchewan Party government will continue to stand up for Saskatchewan families and fight the Trudeau carbon tax.

We will continue to stand with the people and the industries that drive growth and support our families . . . Oil patch production has increased and potash mines are more active, reflecting higher resource prices . . . Landlocking our products won't save the environment – it only ships money to oil producers in the Middle East, Russia and Venezuela that could be used to invest in services and growth here at home. (p. 1-4)

Clearly, Saskatchewan residents have a plethora of influences to navigate the conflicting messages from resource-extraction industries, the politics surrounding energy

transportation and consumption, and the national sustainability goals. It is not easy to orient oneself amidst the confusion and complexity of personal, community, provincial, and national levels of needs and wants – especially as a worker in the oil industry. These multifaceted social, political, and ecological dynamics are what make the following Moose Mountain oilfield workers’ perceptions about climate change and industry impacts on the environment so interesting and important.

Oil Workers’ Views on Climate Change

Fourteen of the 15 oilfield workers that I interviewed believe climate change has, or is currently, occurring to *some* degree. One participant did not believe in any form of climate change. Levels of concern and speculation varied greatly between participants regarding a) exactly how much *humans* are contributing to climate change and/or are the main causes and b) how much Saskatchewanians and Canadians are contributing to global climate change. Although my study was not generalizable, participants’ views were in line with research from The Environics Institute and the David Suzuki Foundation (2014) which found that one in 10 Canadians is a climate skeptic, and that one-third of Canadians are not convinced of human-induced climate change and remain divided on how best to deal with the uncertainty surrounding the issue. Additionally, they assert that not only do opinions about the reality of climate change vary across the country, but acceptance of the science and main causes of climate change is least common in Saskatchewan and Manitoba (47%). The following quotations from five different workers depict varied opinions representing the spectrum of beliefs in anthropogenic climate change that I found in my research. Those who were skeptical reported that:

That’s tough when you’re talking to a guy in Saskatchewan and it’s minus 45 out. I think that, truly, it’s worth studying, and I don’t discredit it, but . . . I have a hard time thinking that we are – the oil and gas industry – is having a huge effect on climate change here in Saskatchewan.

I'm not going to say it's *not* happening, but you know you watch the news and the weather channel and they always say the record high was +45 back in 1921. So there was less carbon emissions back then than there are now, so what's the difference?

And others who fully embraced the anthropogenic causes of climate change suggested that:

I think I have the normal view [on climate change]: humans are burning fossil fuels and that is what is heating up the climate.

All the scientists in every country are saying, "hey boys we're fucking up here." I say, you gotta listen to the experts... all the scientists in the world are saying [climate change is] happening and look at the difference in storms. The hurricanes how they've changed and how powerful they are. Snowstorms on the east coast there. I mean, fuck they are getting blasted like they've never seen!

It is changing. Our environment is changing. Our weather patterns here aren't the same as they used to be.

As the above statements demonstrate, the participants of my study varied greatly in their perceptions of climate change. Research by The Environics Institute with the David Suzuki Foundation (2014) have found that 63% of Canadians believe the scientific evidence that climate change is primarily caused by human activity. Interestingly, the initial responses I got from most participants when I asked about their views on climate change centered on the perceived natural earth cycles as the main causal factor relating to current climate change issues. However, later in the interviews when I asked respondents to share what they perceived as the *main contributor* of climate change, I was surprised that only 2 participants explained earth's natural cycles in more detail. The remaining 13 workers instead acknowledged a variety of human-induced issues as the greatest culprit contributing to climate change and/or impacting the environment. This contradiction between participants initial responses on questions related to climate change and their subsequent responses about their perceptions about the main contributor of this issue demonstrates conflicting beliefs between skepticism about anthropogenic climate change and the acceptance of climate science. It is evident that workers have adopted multiple narratives as they hold some aspects

of multiple types of belief systems in concert. The following factors were identified by participants as being the *main* causal/contributing influence on climate change.

“We Might Have to Start Killing People”: Overpopulation and Overconsumption

Six participants perceived overpopulation and/or excessive consumption as the main challenge to climate change. A drilling-rig worker joked about the problem and the solution by employing a hyperbole: “yeah I guess you could say the world is getting overpopulated, we might have to start killing people.” Although this man was joking, most of these respondents felt seriously that humans are exceeding vulnerable thresholds of the planet’s capacity to support and sustain life on earth. These are valid concerns as environmentalists have long been worried about exceeding earth’s ecological boundaries due to both rapidly growing human populations (Hoevel, 2008) and the tendency of people in developed countries to engage in mass consumption (Szasz, 2016). Although population – sheer human numbers – is a significant driver of environmental impact (Szasz, 2016), it is important to note that globally, the top 1 percent of the world’s population controls 48 percent of all the wealth (Oxfam, 2015) while three billion people live on \$2.50 a day or less (Shah, 2013). Therefore, it is arguable that the sheer rising number of people on earth contribute less to climate change than does mass consumption. Szasz (2016) explains:

Consumption is no longer just the satisfaction of basic needs; consumption is driven by powerful societal/cultural motives. Not many persons are so deeply committed to the environment that they are willing to forgo all that and voluntarily choose less attractive green alternatives. (p. 46)

It is intriguing that although many of these participants expressed disappointment in overconsumption in western societies – a consequence likely due to Canada’s capitalistic economic system that encourages ever-expanding growth (Carroll, Forthcoming) – only one of these six workers made a correlation to the oil industry’s contribution to these issues. This may be a defense-mechanism as workers in the oil industry must negotiate identities

associated with the stigmatized nature of their resource-extraction jobs (Rich, 2016).

Participants would undoubtedly feel discomfort and perhaps guilt about their role in the oil industry if they were to identify the industry as a major contributor to climate change. No one wants to feel that their actions are enabling climate change and thus may find ways to protect themselves by creating narratives that align with their worldview (Grigg, 2017). After all, what is in fact objectively true about one's actions is not as important as how she/he comes to see these actions, and how she/he chooses to measure and value them (Manson, 2016). A service-rig area manager explains:

I figure humans are a cancer to the planet . . . Fossil fuels have definitely allowed us to grow to where we are . . . Some experts say we'll cap-out at 20 billion, is all the earth can physically handle. Whether or not that's true I don't know. But, no definitely man does bear an impact on earth I mean with deforestation and the oceans and the plastics and that sort of thing, there's no denying that . . . It's humans. We are the cancer on the earth.

Similarly, a battery operator believes that:

I think probably the population obviously would be a big thing – everybody seems to think that they need more. Like always bigger, faster, better, more. I mean I'm guilty of it too . . . everyone thinks they need more. Before anything can be renewed, people just use so much of it and it gets to the point where it's like holy smokes!

As demonstrated above, participants are aware of human impacts on earth's non-renewable resources. Additionally, some respondents did a fair job including themselves regarding perceptions of a demanding society in relation to their personal consumption and ecological footprints. However, although they seem concerned with current sustainability issues, I found that their concern was often projected outwards from themselves and the oil industry in order to separate themselves from acts of environmental degradation to cast blame on "others." Although participants demonstrated an awareness of mass-consumerism tendencies, they did not make the connection to the ways in which the hegemonic culture and economic systems within Canada facilitate and encourage these types behaviours (Carroll, Forthcoming). Carroll (Forthcoming) asserts that large industrial corporations, acting in their best interest, exert their power to dominate other social fields. He asserts that this notion

poses the greatest obstacle to addressing current ecological and economic issues facing humanity today. Because of these notions, he infers that people should not necessarily feel individually responsible for consumerism because a broader system is keeping us from addressing climate change in a sustainable manner.

According to Manson (2016), not only do values underlie everything we are and do, but they determine the nature of what we choose to view as challenges and problems. He claims that everything we think and feel about a situation ultimately comes back to how valuable we perceive it to be. Therefore, if a worker values not being seen as someone that contributes to climate change via their role within the oil industry, he/she will create a narrative that casts environmental issues as problems “over there”, i.e.: somewhere else caused by other – likely overpopulated – countries. An appropriate example of this projection is explained in the following paragraph that highlights the second most popular perceived contributor to climate change.

David vs. Goliath: Saskatchewan Contributions to Climate Change vs. “Big Industry”

Three participants perceived emissions from “big industry” cities – such as China – as the main challenge to climate change. Many interviewees acknowledged the oil industry’s environmental impact in some manner, however, they were quick to assert that the impacts in Saskatchewan and Canada are relatively low and harmless when compared to larger nations. A battery operator questions Saskatchewan’s contribution to climate change: “So what are those foreign countries doing? What are they putting out? We have to be pretty menial compared to that. So, are we even a drop in the bucket compared to what’s going on around the world?” My findings parallel Eaton’s (2017) research that shows some Saskatchewanians believe that Saskatchewan and Canada’s contributions to climate change are so insignificant that the province need not adopt emission-reducing climate policies. A battery operator states:

I don't think we are, we are like, what, 1% of, not even 1% of the world's problem? And we are actually doing things here like carbon capture to actually try and make a change anyway and that's like world-leading stuff . . . we're not the problem. It's these nations, huge trade nations that are the big offenders that they should actually look at.

Research by the Government of Canada (no date) has found that in 2013, China *is* the world's largest emitter of greenhouse gases at 25.9% of total global emissions. In comparison, Canada was ranked number 8 – tied with Indonesia – for highest greenhouse gas-emitting regions in the world at 1.6% of global emissions (Government of Canada, no date). Although Canada produces significantly fewer emissions than China (24.3%), Canada's contributions to climate change should not be understated. Canada's input should not be neglected because research has shown that Canada is ranked third in the world for per-capita emissions (Boothe and Boudreault, 2016). Moreover, Saskatchewan is a major contributor to Canada's emissions as it has the highest per capita emissions of all the provinces in the country (Boothe and Boudreault, 2016) and almost one-third (32%) of these emissions were produced by the oil and gas industry in 2015 (Government of Saskatchewan, no date, b).

Participants felt strongly that Saskatchewan's contributions to climate change are minimal primarily due to the perceived healthy state of the environment. In comparison to places like China, that were often referenced as being filled with smog and pollution, my participants pointed to the clean air and water in Saskatchewan. A maintenance worker explains:

I mean, I've been to China and you can taste the air. And you *can* taste the air. And the people in China that we talked to say that we are the luckiest people in the world because they view that we are healthy and they are not. I mean they walk around the streets with masks on all day long. They know.

Participants considered themselves lucky to live in such a beautiful, resource-rich and abundant country. They also attributed the sound state of the environment in Saskatchewan to having some of the strictest, tightest environmental regulations in the country (and in the

world). Workers were proud that, because they perceived the environmental regulations that govern their actions as being progressive, the condition of the ecosystems in which they work are healthy. These notions parallel findings from Eaton (2017) wherein her participants also believed the environmental regulations of the oil and gas industry in southeast Saskatchewan are adequate. A service rig area manager that worked overseas in the middle-east explains the superiority of Canadian oil and gas regulations:

I will say that from a Canadian perspective I think we do probably the best job in the world. I've seen the overseas quality of workmanship and environmental impact over there. I've seen flowlines leaking over there in the desert in the middle east and I'll say that the Canadian oil and gas industry definitely has a leg-up on the rest of the world as far as cleanliness, organization, safety, and our quality of workers too seems to be better. The world wants Canadian workers in all their overseas projects.

Respondents proudly discussed some of the projects that are currently taking place in the area such as carbon-capture and oil wells powered by solar panels to provide examples of the types of progressive changes that are having a positive impact on the environment. They reiterated that oil practices are much safer for the environment now than they have been in the past. Some felt that the oil industry has “really changed” for the better and were excited to share stories of the direction their companies were heading. For example, one oilfield worker (that chose not to be formally interviewed) was eager to show me on his computer a public document that outlines the philosophy of the company he works for. The following passages are taken from the website:

Crescent Point is committed to conducting our business in a manner that minimizes the impact on the air, land and water surrounding our operations . . . We support climate change policies and governments as they study solutions that make sense locally. We will continue working toward pragmatic emissions reduction frameworks that focus on innovation and investment in technology. (Crescent Point, n.d.)

It is evident that some oilfield workers are incorporating aspects of their respective company's environmental vision into their personal value systems. I argue that workers are adopting components of their company's philosophy to facilitate the articulation of their own

perspectives. It is unclear how much of their professed beliefs toward climate change are influenced by sources outside their work, and how much is regurgitation of company policy. Oil workers' attitudes toward climate change are likely an amalgamation of personal values, company values, social media information, ideologies from their political party preference, and more. Company policies toward environmental practices must have some level of influence on workers' beliefs as field workers are on the "front-lines" actively carrying-out the missions and requirements of their jobs within the industry on a daily basis. Thus, some are literally expected to practice what the company preaches, environmentally speaking. This may not happen all the time if workers do not comply or if policies are vague and leave open a range of operational options. If workers do not adhere to company mandates, according to a drilling rig manager, there is going to be a serious problem. He asserts: "If there's any [environmental] neglect, you won't work for me very long."

Almost every participant was not only adamant that the environmental regulations that govern their actions are strict, but that penalties are often enforced when a company is audited and found not being accountable to the required environmental standards. A directional driller explains, "I don't see a correlation between leaving an environmental mess and saving money." Multiple respondents explained that it is much easier, wiser and cheaper to simply follow environmental regulations in the first place than it is to risk fines, loss of licenses, and /or company integrity over acts of environmental dishonesty. For some participants, losing integrity and damaging one's reputation is the most severe consequence of them all:

Basically your reputation [as a worker in the oil industry is very important] – you're born and raised here and you do have a reputation and word gets around really fast in the oil patch if you're a person that cuts corners, and that will haunt you forever.

Conversely, researchers have argued that audits and fines are not occurring nearly as often as they should as the Saskatchewan government is the sole regulator of the oil and gas

sector in the province (McSheffrey, De Souza, Cribb, Sonntag, & Elliott, 2017). McSheffrey et al. (2017) claim that the revenue the oil industry's is able to generate in Saskatchewan – approximately \$6.9 billion dollars in 2016 – causes the government to proverbially turn a blind eye regarding both the vagueness of implementation, and the compliance of environmental regulations as more than half a billion dollars in provincial tax revenue was gained for the province that year. According to Eaton (2017), oil companies lack transparency and create a culture of silence that aims to suppress any complaint about the oilfield so that the industry can continue operating unhindered. Because companies are primarily responsible to self-declare their emissions outputs, environmental mishaps, incident reports, etcetera, they tend to push regulatory limits as they are not often checked (Carter & Eaton, 2016). According to Carter and Eaton (2016), the Ministry of Environment takes a clear secondary role to the Ministry of Economy when it comes to regulation of oil and gas in the province. One worker explains this process:

A lot of people just played the odds game, unless there's a big complaint. Nobody is probably going to do a lot of audits. Basically, that's self-declaration, that's where they are going with a lot of stuff. The onus is on the company, they tell you what's required and if you don't follow it, now we make the penalties harsh. They aren't going to give you a warning because we can't monitor everybody, so we are telling you what you need to do. If you can't follow it because people weren't, you know, abiding by the rules, we are going to make the penalty hard.

It is evident that there is a large disconnect between workers' perceptions of the environmental regulations that govern their industry – strict and enforced – and outside researchers' assessments that these regulations do very little for environmental protection and that companies are rarely held accountable. This gap demonstrates the importance of conversing with oil workers to better understand their views and understand their belief systems about what constitutes environmental sustainability and the ways in which they frame climate change.

Natural Earth Events

Many interviewees suggested that earth's natural cycles and/or events are currently playing a role in current climate issues. However, two participants perceived "earth's natural cycles" as the *main* challenge presently contributing to climate change. A drilling rig worker explains his perception of the consequences of a natural event – volcano eruptions:

I don't think cutting back [on emissions] is going to change it. We have too many natural events that go on that we have no control of . . . And when everybody says as far as the carbon thing that we are wrecking the environment, I'm not disagreeing but to say that humans are totaling it off when we have volcanoes on the planet that are putting emissions into the air that is tenfold what the world [humans] are putting into the air, we are never going to overcome it. And especially for us in Canada.

In the above statement, the participant uses two contradicting frames to express his views. Like other participants, he does recognize that humans may be contributing to climate change issues, but he believes natural events are the main culprit. He has adopted beliefs from both anthropogenic climate change skepticism/denial lenses as well as embraced some scientific evidence that suggests humans *are* contributors to climate change. Both are intertwined to form his current perception.

According to the United Kingdom's Committee on Climate Change (n.d.), there *have* been natural cycles in the Earth's climate over the last 800,000 years. The committee explains that there have been ice ages, warmer interglacial periods and, after the last ice age 20,000 years ago, average global temperature has risen by about 3°C to 8°C, over a period of about 10,000 years. However, although records stretching back millions of years indicate variations in Earth's climate are caused by multiple natural factors including changes in the sun, volcanoes, Earth's orbit, and CO₂ levels, research by the Intergovernmental Panel on Climate Change (IPCC) shows that it is 90% likely that human activity has caused more recent global warming (Committee on Climate Change, n.d.). There is a scientific consensus: human industrial activity is the dominant factor in the present state of the warming planet.

Participants demonstrated skepticism in anthropogenic climate change by pointing to weather events that fit their narrative of what climate change should be. For example, a drilling rig worker explains that it was too cold here in Saskatchewan this past winter for climate change to be occurring: “when it’s -45 I really don’t think there’s any climate change.” Some respondents questioned the validity and reliability of climate scientists’ warnings about climate change when record high and low temperatures occurred in earlier decades. A few participants seemed to confuse the definitions of climate and weather; they highlighted particular extreme weather events instead of discussing climate patterns. Moreover, although most workers believed in climate change, they were skeptical of humans’ contributions being of greater impact than nature’s:

I don’t know I mean obviously the climate is changing. But I don’t really think we are in control of it as much as we think we are. Or to blame as much as we think we are. Like I mean, obviously there will be effects from what we do, but there’s effects from what anything does. This isn’t the first time the world’s gone through an extreme climate change. But this is the first time we are being blamed for it. You know, like, there’s species that have been wiped off the earth before. So, what did they do wrong, you know?

The topic of *blame* for climate change seemed to be a hot-button topic for most participants. I interpreted participants blaming climate change issues on natural earth events (despite scientists’ warnings regarding the consequences of elevated levels of greenhouse gases) as a way to deflect accountability and environmental responsibility, and project it onto a silent scapegoat – nature. It is ironic that although many workers cast blame on various industrialized, human activities for many of earth’s ills – pollution, “big industry”, deforestation, etcetera – only one made a direct connection to the oil industry’s role in enabling and catalyzing these events. A directional driller makes an important connection:

I think I have the normal view, that humans are burning fossil fuels and that is what is heating up the climate . . . what I can see is that things are warming much faster than anyone predicted and it’s likely already too late.

Generally, workers suggested earth's natural events as a main reason for current climate change issues, with several human industrialized activities as perceived secondary causes for environmental concerns. The following human-induced factors were suggested by 4 different participants resulting in the least common perceived causes of anthropogenic climate change of the 15 participants.

Human Activities to Blame: Cows, Transportation, Technology, and Burning Fossil Fuels

One participant perceived an unsustainable number of cattle operations producing excess amounts of methane gas as the main challenge to climate change. He expressed that the meat industry not only requires a lot of non-renewable resources to operate, but that cows produce large amounts of greenhouse gases.

According to Lean (2006), the world's 1.5 billion cattle are responsible for producing 18% of global greenhouse gases, more emissions than cars, planes, and all other forms of transport put together. Moreover, he iterates that a United Nations report has identified the world's rapidly growing herds of cattle as the greatest threat to the climate, the forests, and wildlife species. My participant alluded to mass farming operations as contributing to excessive gas emissions that are causing multiple environmental challenges. He inferred that if the meat industry was more sustainable, society would not be experiencing some of the environmental issues that are currently unfolding.

Another participant perceived unsustainable transportation methods as the main challenge to climate change. A drilling rig worker explains, "Like in every city, every person has at least one vehicle and nobody goes to the same job, they don't carpool . . . everyone drives themselves everywhere." He described how people are so busy that they take their own vehicles instead of taking the time to arrange a carpool and, thus, vehicular emissions are

greater than in the past. Other participants made similar comments regarding how busy 'Canadian' lives have become, and the resultant energy and resources necessary to sustain these types of 'hustle-and-bustle' lifestyles. A battery operator explains:

It's a collective problem. For me, I grew up in a family, we didn't make a lot of money, we didn't even have a vehicle, you know? Literally my parents didn't have a vehicle my whole childhood... But now it's gotten to the point where a family of four – you pretty much can't live without two vehicles . . . if people would just learn to help each other more.

Participants reminisced about life back in the "good old days" including the smaller impact humans exerted on earth's resources when life was simpler. One participant believes this overconsumption is due to a "kinda shame thing or a pride thing." Meaning, people are too proud to ask for a carpool, collaborate, share, etcetera and feel the need to purchase more material goods and possessions to achieve greater social status. He believes the solution to this problem is for individuals to make appropriate lifestyle changes, such as limiting consumption and slowing down the pace of everyday life, in order to combat current climate change trends:

Definitely less consumption. Just kinda going back to, going back to our roots basically, you know? Like living off the land more and not needing to be in 20 different places in one day because I gotta get this done and that done.

Directly correlated to the above notions, one participant perceived human technology and developments to be the main challenge to climate change. She alluded that humans have not been successful at predicting consequences of their new technologies and are playing proverbial "catch-up" with creations that are supposed to make our lives easier. She questions the risk of such inventions:

Our technology is getting advanced and we are trying new things that we haven't dealt with before and we don't know how they are going to [interact] with the environment . . . Like the plastic that we make to better improve our lives . . . we are prolonging everything with the technology that we are advancing . . . Is this *really* making my life better?

Her concerns are connected to ideas expressed by Grigg (2017) that reiterates former philosopher and intellectual Marshall McLuhan's notions from his "Laws of Media" book (1988) that states each human invention obsolesces an old technology by replacing it with a new one. Also, he asserts that, when pushed to the limit, each new invention reverses the effect for which it was intended. For example, Grigg (2017) suggests that "the car, which was supposed to eliminate the tonnes of daily horse manure that fouled 19th century cities, has now rendered some cities nearly uninhabitable from air pollution" (p. 135). Ultimately, some of these technological developments – instead of contributing to our lives in a helpful and constructive manner – actually detract from it and can be harmful to our physical and/or emotional selves, and also to society as a whole. Grigg (2017) writes: "The bulldozers, excavators, chainsaws and factories that were supposed to make our human lives so much easier, are now causing the environmental degradation that might make our lives – and the lives of many other creatures – extremely difficult" (p. 135). Although our industrialized inventions were created with good intentions for bettering our lives, their unforeseen consequences have resulted in society struggling to adapt to the environment's boundaries and ecological thresholds.

Finally, one directional driller perceived that the main challenge to climate change is burning fossil fuels. His solastalgia – existential distress caused by environmental change (Wikipedia, 2018) – surprised me; he conveyed his existential uncertainty through comments of distress over environmental degradation: "it's likely already too late; [there's a] bleak future." This worker contemplated the oil industry's role in contributing to climate change, and his livelihood. He describes this moral dilemma:

Most [oilfield workers] that I know have realistic attitudes. I work around the rigs and on them and rarely see anyone doing anything blatantly bad for the [environment] long term. We all make money in the oil industry and have to try and balance that with the impact on our environment and surroundings. Everyone I know that works in the industry generally has a grasp on the balance and a respect to do

things with consideration. I think the stereotypical roughneck that would dump their used-oil in the river are a lot rarer than in the past.

He did not elaborate further regarding the main cause of climate change being the burning of fossil fuels. He did express, however, that he was only involved in a small portion of oil extraction, but questioned the environmental impact of other areas of the oil industry: “I’d be interested to hear from anyone on the production side of things if their jobs are getting more environmentally aware – they run flares all the time at pumpjacks and batteries and those give out constant air pollution.” His perception is that his role within the industry is less harmful than others. He conveyed that the environmental impact of the operations he is a part of consists of “obvious disturbance of the ground and minor soil contamination, but it is dealt with well by environmentalists” that come out during the well’s procedures. Although he spoke of the environmentalist on-site, he likely meant an environmental consultant – a company professional that actively works on-site and is responsible for monitoring oil operations and ensuring provincial regulations are abided by.

There is a paradox at play. First, whether acknowledged by the participants of my study or not, the oil industry has undoubtedly played a part in industrialized technological developments that contributes to anthropogenic climate change. It is ironic that only one participant directly made this connection in the above perceived main causes of climate change. Second, the oil industry is fulfilling a critical role by literally fueling the lives of billions of people. Homer-Dixon (2010) reminds us of this notion using the example of food production:

The first thing to keep in mind is that fossil fuels are feeding us. We all know that coal and oil drive the tractors, trains, trucks, ships and freezers that grow, store and move food from farm to city, nation to nation (forward, viii).

Whether one fully supports the oil industry or perhaps actively protests against it, there is no denying that we all utilize products and services made possible by oil every day. Turner (2017) reminds us that currently, virtually everyone relies on fossil fuels and that

Canadians are dependent on some aspect of the oil industry when he writes that “The Patch is us” (p. 310), meaning that, we are all connected to oil either directly or indirectly through the systematic industrialized institutions we are a part of. Many participants were irritated at the hypocrisy of “anti-oil” protestors for this very reason and provided many examples that justified their perception of the extraction and transportation of oil. A battery operator exclaims:

I think it is important for people to realize that the oil industry isn't evil. It's not this plague that's trying to destroy the fucking earth, like, it isn't that. It's a group of people that – there's a need, there's a necessity. Not even a need, there's a necessity for it, and it has to happen so someone has to do it. And that's what it is. Like it's not, because you work in the oilfield you don't give a shit about the environment. That's definitely not how it is at all.

In summary, the oilfield workers of my study seem conflicted between climate skepticism and acceptance of anthropogenic climate change issues as they suggest a variety of primary causes of climate change. It is evident that they have adopted aspects of multiple worldviews and are trying to navigate a plethora of influences such as culture, politics, science, and intuition. Their belief systems are complex and dynamic. Moreover, they perceive the oil regulations that govern their operations as strict and that they ensure environmental accountability, contrary to recent academic research on the topic. There is a distinct discrepancy between the oil industry's environmental policies and some environmentalists' views of sustainability. This disconnect requires further research and communication.

The above subcategories outlined the main causes that Moose Mountain oilfield workers perceive to be influencing climate change and other environmental issues. The following paragraphs outline their perceived *solutions*.

Solutions to Climate Change

Of all fifteen participants, one explicitly stated that there is nothing we can do to help with the issue of climate change because we cannot control earth's natural events. Most participants had a mixture of suggestions ranging from individual actions to collective, societal transformations. Please note, although one participant believes wind farms are the solution to climate change (which will be discussed in this section), respondents' views on shifting to renewable energy sources will be predominately discussed in Chapter 6.

At the individual level, one participant believes that if everyone altered their lifestyle to become more sustainable by doing "little things" within their control to help with environmental sustainability, these acts would add-up and help alleviate stress on earth's systems. She provided examples such as recycling, utilizing reusable grocery bags, picking up litter, etcetera. She did not have faith in government-imposed solutions, rather, she placed her trust in the collective action of individual citizens.

Another participant suggested that the solution to climate change lies in the current transportation system. He explained that if public transit was more common and accessible, people would utilize this service more often and thus, reduce emissions. He believes that carpooling would reduce the number of vehicles on the highways which would lessen humans' contributions to climate change.

A battery operator explained that he perceives the main solution to climate change as being the development of technology and the expansion of pipelines. It is important to note that many participants spoke of improved technology in the oil patch at *some* point in their interview. This particular worker spoke about implementing carbon-capture initiatives to reduce carbon emissions. Moreover, he also believes that the continued advancement of oilfield research and technology will improve fossil fuel extraction efficiency and

sustainability. This participant perceived pipelines as an effective way to move oil because, as he explained, the technology that helps companies monitor them have improved immensely. He believes that pipelines are the safest and most effective way to transport oil across the country. A maintenance worker parallels his belief:

I understand that they want to protect the environment and I'm all in favour of that kind of thing. But we need oil right now. We need it. It's not going to change overnight. So let's transport it the safest way. And in my estimation, it's pipeline.

Most participants agreed that, despite the occasional oil spill, pipelines are the most effective way to transport oil. Overall, they agree that the risks and potential consequences of oil spills outweigh the risks of transporting oil other ways such as trucking or using trains. They asserted that truck crashes and train derailments would occur much more frequently than the occurrences of pipeline leaks and spills and thus, cause more environmental harm.

Most participants resented those that protest pipelines because they feel pipelines are the safest way to transport a needed product to people around the world. Some workers felt that they are providing a great service to people requiring oil to sustain their current lifestyle. A drilling rig worker explains, "The world is growing. It's not anybody's fault and you have to keep supplying a product to the people – that's how we survive." He was adamant that technology "keeps us above the standards" both environmentally and economically. I was surprised when he placed his faith in me, or somebody like me, to find better solutions to extracting and transporting oil: "But in 5 years' time, somebody like you who's doing a thesis or a masters is gonna figure out how to get that oil out of the ground."

Additionally, a couple participants explained that pipelines would not only be a novel idea for transporting oil, but could also be used for transporting water in times of water-shortages for people in need: "Like if we ran out of water, how would we survive here? We could use it to ship water across the country. That's what I see it for anyway." Participants

considered multi-purpose uses for pipelines but seemed unsure of the realistic feasibility of their thoughts.

A petroleum engineer believes that the solution to climate change is investing in wind farms. He explained that even though the demand for oil is going up, “eventually we might have to start weaning ourselves off of oil, or at least plateauing.” He figures because “there’s wind here every day,” Saskatchewanians should be capitalizing on this renewable resource and utilizing it as a main power source. He suggested that the open prairie landscape would be ideal for implementing large wind turbines.

A maintenance worker strongly believed that if the government was to offer incentives for industries and then ultimately the public to act more environmentally sustainable, people would be more apt to comply with environmental initiatives, which would ultimately reduce emissions and combat climate change. He felt that dominant industries such as car companies, banks, etcetera, should be mandated by the government to alter their products and services that help the “average-Joe” person instead of hurting him/her. He explains:

Participant: Don’t tax people, go after the industry to get them to change how they do it.

Adams: What do you mean?

Participant: Instead of taxing *me*, by having my, for example, my price of gas go through the roof or the price of licensing your vehicle go through the roof, those kinds of things. Instead of charging *me* for that, go after the companies and say you need to come up with better technology in your automobiles to eliminate carbon. You can’t fix things through taxation it doesn’t fucking work . . . Big companies, you know, the carbon capture, they can do it, but it’s cost-prohibitive. And if the government doesn’t step-in and help them, or give them incentives to do it, they might do it but then it’s passed on to you through your natural gas bill or your power bill or whatever.

He was adamant that cities with ‘big industries’ are the ones that should bear-the-brunt of mandated government restrictions, not the general public.

Finally, one participant believes that reducing consumption is the solution to climate change. This notion was echoed by other participants as well. He believes that if people were more conscious of their footprint by minimizing the accumulation of material goods as well as their waste, the earth's systems would be able to be more resilient and stable. He suggested that a cultural transformation where pride and social status did not rule-supreme would be ideal to help suppress society's current mass consumption tendencies. He desires a shift in consciousness from selfishness to collaboration. He chuckled when explaining his belief to me as if he thought I was surprised to hear this opinion from an oilfield worker. He laughed, "yeah I might be a different breed of oilfield too though."

The above paragraphs demonstrate various solutions some oilfield workers perceive to be the answer to climate change. Although most claimed they did not know the solution, I observed that the few that did share their perceptions seemed liberated to be able to have this type of discussion without judgement. I have the assumption that they do not have these types of conversations often at work out of fear of ridicule, and I was happy to see some participants relax and be able to express themselves in a way that they might not normally get the opportunity to. I am pleased that I was able to foster this type of safe environment to delve into some meaningful discussions that might not have normally surfaced.

An interesting finding of my study is that although many participants alluded to causal factors of climate change *outside* the realm of human control (earth's natural cycles, the idea that mass consumption is simply part of human nature), almost all participants came up with perceived solutions – material actions and behaviours – that humans could work toward and participate in, that would help combat current climate change trends. I believe that the multitude of responses, and contradiction of these suggestions, further demonstrates the need to converse with oilfield workers to better understand their range of worldviews;

these are all important pieces of a complex puzzle that need to be observed if we wish to create a pluralistic narrative toward mitigating climate change.

Chapter 6: On Environmentalists and the Future of Oil in Saskatchewan

Fossil fuel extraction workers and environmentalists are not typically assumed to maintain harmonious relationships. Their ideological stances often differ on controversial issues surrounding an array of energy ‘best practices’ and environmental sustainability. Polarizing beliefs from opposing views can create clashes between two groups when their interests and values do not align. For some members of the public, apprehension of oil operations continues to rise as public commons like air, water, soil and community spaces are increasingly perceived to be at risk and devalued as social and economic commodities (Hlushko, 2017). Conversely, others in southeast Saskatchewan feel that environmentalists are “out of touch” (Eaton, 2017, p. 11) with the reality of oil operations in the province. Additionally, research has shown that environmentalists can be perceived as ignorant by oil workers because workers believe that any environmental harm caused by oil operations will ultimately be rectified by a combination of regulation and reclamation (Hluskko, 2017).

The following subchapters describe the views of fifteen oilfield workers in the Moose Mountain area on environmentalists and the future of oil in Saskatchewan. Like other topics in this paper, their views varied from perceptions that environmentalists are greatly needed and appreciated, to embraced only if they do not impede productivity. Interestingly, their responses were often conditional based on their interpretation and context of the word “environmentalist.” If they perceived it to mean environmental *activist*, opinions were usually more cynical as their interpretation is that these people are ignorant outsiders that can threaten the goals of the industry. If workers perceived environmentalist to mean *environmental consultant*, they were more accepting because they viewed this individual as part of the same team as them.

Regarding the future of oil in Saskatchewan, again, participants were split between notions of having great abundance of oil reserves, to the immediate need to wean-off oil and

pursue more sustainable options. Most participants believe in what they call a realistic balance between fossil fuels and renewable energy. Homer-Dixon (2010) reminds us that there are no risk-free energy solutions and thus, curbing the reliance on fossil fuels and striving for more renewable energy sources is a complex task that requires understanding of multiple perspectives in order to successfully execute a shift. Moreover, Rich (2016) reminds us that positioning environmentalists and extractive-industry workers against one another is not only problematic, but dangerous to the wellbeing of the ecological communities within which we all live and work. Therefore, it is important to understand the perceptions of industry workers to facilitate a pluralistic narrative of energy in Saskatchewan.

Environmentalists: Friend or Foe?

About half of the participants of my study asserted that they were fully supportive of environmentalists. It is important to reiterate that most workers perceive *environmentalist* to be *environmental consultants* employed by the industry. In the following chapters, I write “environmentalist” because this is the word choice of my participants, but I believe participants are actually describing their perceptions of environmental consultant roles. Regardless, I was surprised that most workers regarded environmentalists (environmental consultants) as an integral and needed part of the industry that allows it to function effectively. They stated that environmentalists are an important part of any oilfield operation because they ensure the operations are environmentally accountable and are more informed about environmental regulations and procedures than the common worker. Two battery operators explain their significance:

[Environmentalists] are needed, absolutely needed. Because without them pointing out our shortfalls, most of us would just say, “oh well we did it last time this way, well do it next time the same way.” Why change if someone doesn’t point-out where you’ve come up short or where you could improve?

As far as environmentalists, I dunno I think they are good for the oil patch. It’s that simple. It’s like having someone there like, some guy might not think something is a

big deal but the environmentalist will be like, yeah here's why it is. And that can change that guy's opinion on it because he just, it's kind of like lack of knowledge.

Interestingly, a few participants also made a connection that environmentalists are often stereotyped like oil workers are – but in a very different way. They stated that just as oil workers can be stereotyped for not caring about the environment, environmentalists can be stigmatized as being close-minded, “crazy activists” that cause havoc for the organizations they deem environmentally degrading. A truck driver conveyed his empathy for environmentalists when he stated: “I think environmentalists hold the same stereotype that a rig pig holds... [but] it's a reverse stereotype.” He articulated that he felt bad for environmentalists as they are often only trying to do their jobs. A hydrovac truck-operator explained that she has no problem with environmentalists enforcing policies and acting on what they feel is “for the best” when it comes to the environment even if it means halting production. She explains:

I just go about my day. You know what? If you want to stop work because there's a frog in a puddle of water and we can't do anything until that frog is gone, by all means save the frog. I'm OK with it.

A few participants considered themselves environmentalists. A directional driller asserted that he has “a lot of similar views” to environmentalists such as the desire to protect and conserve ecosystems. Additionally, a drilling rig worker told me stories about a former job he held where he used to check mud for land-spreading operations. He laughed when he said, “So I guess I was an environmentalist at one time.” Although his notion of environmentalism is primarily based on his perceptions of environmental reclamation work, it was interesting that he understood himself as “like an environmentalist.” Although participants were likely attempting to compare their behaviours to the ‘environmental consultants’ they experience at work, I am surprised by some participants’ desires to perceive themselves as an ‘environmentalist’ as most of the academic literature I have read suggests

strong polarization between the identities and culture of oil workers' and environmentalists (see Eaton, 2017; Hlushko, 2017; Rich, 2016).

By attempting to align their positions with environmentalists, some oilfield workers may be asserting a compatibility between oilfield work and sustainability. Axiomatic stigmas narrate a story that oilfield workers, the antagonists or villains, are “bad” for the planet as they work for an industry that stereotypically destroys it, whereas environmentalists, the protagonists or heroes, are “good” for the planet because they try to save it. For example, an article published by Maclean's entitled “*Working for the 'enemy'*” (Dehaas, 2012), explains ways in which environmentalists can work in the oil industry without having to “sell your soul” (para. 11). This type of language illustrates how some cast the oil industry as “the enemy” to the planet, but environmentalists working for the industry can still be considered decent people even when they aren't “chained to old growth trees or marching against proposed oil and gas pipelines” (para. 4). Thus, one should be careful which side he/she identifies with. Workers may be trying to make connections between their behaviours and the actions of environmentalists as a defense mechanism so that they may take comfort in perceiving themselves as being part of the solution, not part of the problem when it comes to climate change and other environmental issues.

It seems that some workers are accepting that environmental sustainability has become a key concern for most business and industry initiatives. Many participants discussed ways that they feel the oil patch has improved, both in terms of its practices and how its workers conceptualize the environment. A battery operator explains this transformation:

I think [the oilfield] is changing because it's getting younger, and younger people are coming up and the ones that are older in the oilfield that did things [unsustainably] . . . they're just kind of getting phased-out because *this* is how it's done now. This is how you have to learn. You have to change or else . . . you can't do things certain ways anymore . . . I bet if you go talk to certain people about this topic they are going to think environmentalists are the dumbest people ever and that

they should not be doing it. But give your head a shake! You gotta learn things too. If you're being too one-sided like that . . . there *is* another side to the coin, you know?

This worker also insinuated that my interview experience would likely have been completely different had I interviewed his father instead. He conveyed feelings of frustration when he assured me that his father, also an oilfield worker, would have been ignorant about topics like environmentalism and renewable energy. Although he chuckled at his father's stubbornness, he used it to illustrate the difference between the oil patch "back in the day" and the oil patch today. He believes there is more awareness of environmental protection than there used to be.

The other half of participants were conditionally supportive of environmentalists – they perceived them as "good" only if they do not impede extraction efforts in ways they feel are unreasonable. A construction worker explains: "Ah there's good ones and bad ones. There's guys that go overboard . . . some guys just nit-pick at stuff . . . [they] power-trip a lot." A drilling rig worker explained that for the most part, the environmentalists he has experienced are 80% good and 20% bad. He based his opinion of environmentalists on the extent to which they allowed or disallowed certain amounts of environmental impact and consequences from oil-operations. For example, he explained that one environmentalist he worked with was disliked because he became irate about some tree branches that got broken during the moving of a rig down a narrow road. He implied that environmentalists should concern themselves only with large-scale environmental impacts and not worry themselves with menial occurrences that he believes "could happen to anybody." A service rig worker echoes his fellow worker's opinion when he explained that environmentalists – although he likely means environmental consultants – should not meddle in aspects of the industry that they are inexperienced or ignorant about:

So environmentalists, yes, I do believe there is a place for them if the intentions are to do good. But if it's to stop something that they don't understand what the realization of it is, then it's just fluff to me.

Another common theme from participants is that some environmentalists are uneducated and make assumptions about the nature of oilfield work. A few participants explained that they can't fault environmentalists for being ignorant because they don't actually know what goes on in the field as they have never experienced it for themselves. Multiple participants hypothetically extended an invitation for pessimistic environmentalists to physically come-out to their work-sites and experience the daily operations so that they could see how sound their practices are. Moreover, workers were adamant that the impacts of oil operations in Southeast Saskatchewan are minimal when compared to larger operations in other provinces and countries; *these* are the operations environmentalists should concern themselves with. A battery operator and petroleum engineer explain:

I think [environmentalists] need to be fully educated on everything before they actually make a good solid judgement . . . Come on out and see what we are doing. We are putting less carbon into the air, taking better care of the land than anybody has in the last, I dunno, 30, 40, 50 year. So that doesn't back-up what the environmentalists are saying.

[Environmentalists] can't hate the entire oil industry. You can hate the open-pit mining where there's just bulldozers going back and forth and doing that. But if you come out there and actually see [our operations], this isn't that bad for the environment.

As the above quotations demonstrate, workers believe that not only are environmental regulations in Saskatchewan adequate, but anyone that insistently questions the regulations and practices of the industry are wrong. By insisting that those who question the legitimacy of the industry's environmental regulations and enforcement are ignorant, the industry is able to manifest a sense of victimization that positions it in need of protection from outside threats such as environmentalists and climate change activists (Eaton, 2017).

Many respondents attributed both environmentalists' and the public's lack of understanding and their abundance of ignorance to the media. They perceive the media as

being responsible for creating an antagonistic narrative of the oilfield that causes people to proliferate assumptions of extreme environmental degradation. Tsfat (2003) suggests that people demonstrating media skepticism tend to believe that mainstream news outlets often sacrifice accuracy and precision for personal and/or commercial gains and thus, create mistrust among their viewers. My participants perceived that media platforms on *both* sides – environmental and industrial – typically skew their stories to suit their respective institutional goals. A battery operator questions the legitimacy of disseminated media information: “Who has the real data? You can kind of spin the numbers to make it look however you want.” Moreover, respondents were upset that media platforms shine a proverbial spotlight on any environmental mishap that occurs (and magnify it), yet rarely report on positive aspects of the oilfield. A battery operator explains his frustration:

I blame the media. Where do you find in the media where they report that the oilfield is doing *this* for an area, or making *these* [positive] changes, or these good things are happening. They don't! . . . That doesn't make the news. That doesn't sell.

Interestingly, a couple participants cast the media as being unjust for environmentalists as well. They explained that the media paints environmentalists as outrageous, progress-stopping people that hate oil and anyone that works in the industry. They blamed the media for trenching a divide between oilfield workers and environmentalists because they “never take that wedge out.” They feel that the media strives to keep the two groups polarized in their beliefs and actions as tension-related stories are popular for various news platforms. A battery operator conveys sympathy for environmentalists: “Do [environmentalists] want to totally get rid of oil? No they don't. There's [other] solutions. They are solution-making people. Study and solution-making people.” One can infer based on these statements that some workers hold the belief that environmentalists opposed to oil operations are not respected and/or taken seriously whereas environmentalists that are in-favour and/or tolerant of oil operations are appreciated.

Directly correlated to concerns over negative media-exposure, some participants were worried about *my* intentions describing and reporting their opinions on climate issues. Participants seemed to trust the purpose of my project yet were apprehensive that other academics might take my findings and “spin” and “twist” them into arguments that support their cause. Moreover, interestingly, when I called one of my friends, a farmer, to ask if he could recommend any oil workers that might consent to participate in my study, I was surprised when the first question he asked was, “are you looking for good or for bad?” I was taken back by his comment that I interpreted to mean – was I looking to report on negative aspects of oil (in an attacking or threatening manner) by conversing with those that disapprove of current, supposed lenient environmental regulations or was I looking to defend the industry by talking to workers that have strictly positive environmental acclamations to report? I answered, “neither” and he agreed to provide me the name of a few contacts. One can infer based on this interaction that maintaining a positive image of the industry (and avoiding any conversation that might illustrate the contrary) was important to this particular farmer.

A battery operator describes reasons oil workers might be hesitant to engage with “outsiders”:

You might come in the doors as this friendly person that just wants this, you know, a different view of the oilfield. But there’s probably been so many before just like you that has said the same thing and then they just turn it around. . . [oil workers] don’t want negative media. But that’s 95% of the time that’s what oil companies get, or oil businesses. So as soon as someone walks in the door and says, “hey I wana ask you some questions I’m doing research on the oilfield,” instantly they think you’re just trying to dig in to what we are doing, you know? Because the oilfield gets nothing but negative media, it’s that simple. You don’t ever turn on the news and hear, “oh here’s an oil company that hasn’t had a spill in 10 years; they’re doing so awesome, all their locations are clean.” You don’t hear that; you just never do.

It is curious to me how fixated some participants were on the intentions of others. I have found that workers do not want to be vulnerable and accidentally help a side that they

perceive might betray them or their industry by using their words against them. Through these types of comments, a sense of fear due to accidental disloyalty is conveyed. These notions are supported by Eaton (2017) as she found that some of her participants were reluctant to “rock the boat” by having frank discussions around negative aspects of oil operations because they too are directly or indirectly dependent on this industry (p. 15).

Overall, respondents believe environmentalists (likely environmental consultants) have a valid place in the industry, and in society. Most participants are supportive of environmentalists if they do not excessively try to hinder oil operations by exerting their authority and enforcing regulations that seem unnecessarily strict to the common worker. Moreover, some workers feel that environmentalists are stereotyped as oil workers are and blame the media for its role in proliferating negative images of the two groups’ identities. Participants are generally loyal to their jobs and avoid speaking in ways they perceive might incriminate the industry. Participants did not allude to environmentalists’ ‘big picture’ goals of mitigating climate change and striving for global sustainability for the greater good of the planet – their views are mostly constructed and framed around the ways in which environmentalism impacts the oil industry in Saskatchewan. They did not connect the goals of environmentalism to combating major climate issues. Although workers understood that oil companies *are* making efforts to tighten-up their operations environmentally and that they are doing a better job now than decades earlier, they did not demonstrate an awareness of the desires of some environmentalists that believe (because of climate change) oil must be phased-out completely. Participants did not correlate their perspectives to the views of some environmentalists that believe there is no way for oil production regulations to improve enough to be consistent with critical environmental protection and conservation. This notion demonstrates yet another disconnect between oil workers and environmentalists regarding desirable levels of oil production and sustainability.

Oil Workers on Renewable Energy: Pros and Cons

A popular quotation by Stephen R. Covey (n.d) explains that while we are free to choose our actions, we are not free to choose the consequences of these actions. Choosing the best form of energy production and transportation is no exception. Homer-Dixon (2010, p. 46) reminds us that “all energy technologies carry environmental risks and their implementation will have profound and far-reaching consequences for human societies.” Bearing this in mind, participants described their perceptions of both favourable and unfavourable aspects of renewable energy based on their current knowledge of technology, environmental practices, and feasibility. One interesting finding is that many workers hold conflicting beliefs about renewable energy. Although workers were quick to point-out negative aspects of renewable energy including cost, perceived environmental impact, and other reasons they felt it would not be realistic in the southeast area, multiple participants claimed that they would quickly convert their personal consumption to renewable energy *if* they could afford it. Some participants feel that solutions to climate and energy issues must include a balance between renewable and non-renewable energy technologies.

Participants in my study generally saw renewable energy as positive but impractical. They discussed positive and negative aspects of implementing renewables in their own homes but did not generally reflect on the possibility of powering provincial electric grids with renewables. A common concern is renewable energy technologies are currently too expensive to implement and maintain and thus unrealistic for the “average Joe” to utilize in her/his home. A maintenance worker comments:

I would convert my house over to solar energy tomorrow if I could afford it . . . I’ve toyed with the idea of switching my house over to solar electricity but right now the cost of the solar panels is cost-prohibitive. It’s cheaper for me to pay my power bill every month than it is to invest [in solar].

Interestingly, one worker explained that his wage from his oilfield job is the only reason he *was* able to make his home more sustainable. He explains:

Here's the ironic thing, if it wasn't for the oil industry and a better wage, and a better secure job, I wouldn't have been able to actually make my home like 3-times as efficient as what it was. So having that job actually allowed me to put in triple pane windows, insulate my house, wrap-it, high-efficient furnace, all these things . . . Well now I don't have to burn as much gas. So if we allowed everybody to have their houses more efficient, how much less energy would we need to burn? All of a sudden everybody is a little more sustainable.

Cost is a prominent factor in multiple participants' willingness to entertain the idea (or not) of switching to renewable energy sources. However, one participant with 40 years of experience agreed that although converting would be expensive, he figures it is worth it as people often purchase expensive, non-essential material items:

Actually I talked to a young guy the other day who put solar panels on his house six years ago and at that time he said it was \$18,000, so \$18,000 [but] he hasn't had a power bill since. And his [justification] was – so you go out and spend \$8,000 on a brand-new Ski-doo? This guy was 34 years old. I really, just listening to him I was really impressed. Got me thinking, maybe we should be doing that – putting solar panels up, right?

Another negative aspect of renewable energy suggested was the environmental impact of creating and implementing these types of infrastructure. Participants questioned not only the environmental impact of producing windmills and solar panels and transporting them to their destination, but also the health consequences for the animals and people that live nearby after installation. A maintenance worker describes his concern: “You want to talk about pumpjacks cluttering up the land, let's take a look at those [wind turbines]. There's all kinds of studies out there about health problems with people who live around those wind turbines.” He stated that he has heard that the noise created by wind turbines creates health issues for people and cattle living near them. Additionally, an Indigenous worker conveyed his frustration with wind turbines killing bald eagles:

Go to Rugby, North Dakota and look at the 300-wind turbines that are there. Well that's the path that the bald eagles fly. You go to jail if you shoot a bald eagle, but

there was 644 bald eagles killed in the wind turbines – that was OK? You kill one with a tanker truck and you’re going to jail. But it’s OK for the wind turbines to knock them out of the sky?

This worker feels strongly that there is a level of hypocrisy regarding one energy method’s environmental impact as being perceived by many as less – than the oil industry’s impact – though he feels it is greater – and thus he projects criticism onto wind turbines. According to a study published in the *Wildlife Society Bulletin* (2013), wind turbines kill 573,000 birds annually in the United States per year (Smallwood, 2013). The American Eagle Foundation (n.d.) suggests that wind turbines present an ever-present danger to not only eagles and other birds of prey, but also to any migratory bird that passes through areas where wind turbine farms have been constructed (para. 1). They write:

“Alternative energy is not ‘green’ if it is killing hundreds or thousands or millions of birds annually,” said Dr. Hutchins. Our wildlife should not be collateral damage in our effort to combat climate change, nor does it have to be. Improved regulation and science leading to proper siting, effective mitigation, and compensation would go a long way to address this conflict. (para 14)

The Indigenous worker returned multiple times to the negative impacts of wind turbines and would not entertain the positive aspects of this form of renewable energy. He perceived oil operations to be much more environmentally friendly than wind turbines. Additionally, one worker pointed-out the fact that wind turbines have some oil-dependent components as they require oil to lubricate moving parts within the turbine. Many workers were quick to point-out the negative aspects of other forms of energy yet steered-clear of highlighting the negative impacts of oil operations. Clearly, when it comes to energy, opinions regarding the most practical and sustainable methods are a complex system charged with emotions and invested interests.

Conversations surrounding the positive aspects of renewable energy included the opportunity to become less-reliant on fossil fuels. Multiple participants feel that an eventual “weaning-off” process from oil and gas is inevitable and that a balance between both

renewable and non-renewable energy sources is the solution to current energy and climate issues. Participants varied in their perceptions of how much longer oil will be a prominent industry in the province; this is discussed further in the following sub-chapter. For reasons mentioned above, some respondents feel that an immediate transition to renewable energy is not feasible at this time and therefore suggest a gradual introduction of renewable energy technology to balance fossil fuel reduction. A worker explains:

You're going to have to find a balance between a renewable source and a non-renewable source. We are going to have to find a balance between coal, oil, gas, solar, wind – you can't just have one and that's it. It doesn't work that way. We are gonna have to find a way to amalgamate all of them . . . to where you actually have something sustainable. Hydro would be in there too I guess.

Multiple workers acknowledged renewable energy as a sustainable option for future energy production and pondered the most efficient renewable energy methods for the Moose Mountain area. A petroleum engineer suggested that investing in wind farms for the southeast area would be effective because of the vast plains and abundance of wind. Other suggestions for effective non-renewable energy options included solar and hydro. Other participants were unsure of a specific solution but felt that an inevitable change in some form of renewable energy technology is imminent. A drilling rig manger explains:

I don't know [the best renewable solution]! If I knew what it was gonna be I'd be all over it. Somebody's gotta invent something to make the world change. Like, you can't just live off oil and gas forever. Something's gonna have to change. It's coming. It's coming.

Generally, the participants of this study expressed appreciation for renewable energy sources yet question the functionality and practicality – due to cost – of implementing these methods at this time. Respondents acknowledged the inevitable shift away from fossil fuel extraction toward renewable energy sources and generally believe this will be the future of energy production in Saskatchewan and Canada. Most workers did not explicitly speak to whether this will be a forced or embraced transition (or a combination of both).

Overall, participants believe that the current solution to energy and climate issues is to maintain a balance between non-renewable and renewable energy sources. This belief was maintained even though many workers were adamant that the environmental impacts of renewable energy are harsher than those of oil. Paradoxically they believe that the solution to climate change and the future of energy production is to eventually wean-off of oil and have a surplus of renewable energy technology. Surprisingly, job security – discussed more in the following sub-chapter – was not generally a concern regarding the transition to renewable energy sources.

Where Do We Go from Here? Predicted Future of the Oil Industry in Saskatchewan

Although an absolute shortage of fossil fuel energy in Canada is still a long way off, research suggests that the amount that can be easily, cheaply, and safely exploited is indeed running low (Homer-Dixon, 2010). Homer-Dixon (2010) asserts that not only will it take every energy source Canadians can tap to sustain the current rate of extraction and consumption through the next quarter century, but some \$2.4 trillion worth of infrastructure will have to be built within the next decade to meet demand and avoid crisis. Additionally, he asserts that continuing to extract fossil fuels is dangerous for the environment and current global warming trends: “there’s enough carbon energy beneath our feet to produce climate change that would make the planet uninhabitable” (p. 22). However, he claims that national economic goals and energy consumption will pose a greater immediate challenge to Canadians than the threat of climate change:

Climate change is a serious issue that must be addressed, but the limitations in our ability to grow energy supplies to meet growing demand, given the correlation between energy consumption and economic growth, will have a far more severe impact on our lives than climate change in the near future. (p. 58)

The oilfield workers in/around Moose Mountain Provincial Park have mixed opinions regarding the future of drilling and oil production in Saskatchewan. Of the

participants that responded to a question about how long they felt the industry could maintain current rates of production in the province, perspectives ranged from 15 to 150 years.

Interestingly, most workers that responded suggested that there is less than 75 years' worth of potential oil extraction operations remaining in the province. Participants predicting that no new wells will be drilled after 30 years (or less) believe that unless technology develops to be able to extract resources even deeper than the Bakken zone, oil companies in the province will face many challenges. These challenges include finding new areas to drill for oil. A drilling rig manager explains:

I'd say maybe 15-20 years until something's gonna stop. I don't know where they are going to keep drilling. Like they've gotta be running out of spots to drill unless they find another zone then they can go back in and start drilling and go deeper . . . it's gonna be more costly, for sure. Because you're going deeper and everything's gonna cost more to do that. That's why I think in 20 years something's gotta happen. Something's gonna have to change.

Although estimations of oil extraction and production were perceived as relatively short by most participants, concern for job security was not commonly shared by most workers. A geologist explained that she didn't think shifting to renewable energy was a cause for concern for new workers:

If things shift over then there's going to be jobs in [renewable energy trades] and then people will start going to school for *that*. Like oil was popular when I went to school so I took it. But if things shifted, then people would learn that [new industry].

Only one participant – a petroleum engineer – expressed blatant apprehension about losing his position if the transition to renewables was to occur within the span of his working life. He explains:

Participant: Well I'm a little worried about my position [as] a petroleum engineer in 40 years. I'm not sure if they'll need as many petroleum engineers because I think the way society is going it's going to shift towards renewable energy sources.

Adams: And how do you feel about that?

Participant: Um, a little fishy about it to be honest. I'm nervous – will I have a job in 30 years or will I be retired or . . . older guys will have a job until they retire, I might not.

He went on to describe the dilemma he and some of his classmates faced after completing high school trying to decide which form of engineering to take to take – petroleum or something different – due to the concern of limited availability of positions resulting from the predicted shift to renewable energy: “Me and my buddies went back and forth like, should we do petroleum or should we not? You know they say only about 40 more years so, I dunno.” Interestingly, this worker, fearful for his job, was also the participant that suggested that the solution to climate change is to invest in wind farms. From his statements one can infer that he holds conflicting feelings regarding his desire to continue making his livelihood from the oil industry (ensuring he has a job for the foreseeable future) and his acknowledgment of the inevitable transition to more sustainable renewable energy sources.

Although job security was not a major concern for most participants, many oil businesses in the Southeast area are already feeling the squeeze from company layoffs. For example, the Calgary-based company Crescent Point – one of the area’s biggest oilfield-employing companies – has recently cut 17% of its workforce (The Canadian Press, 2018). Craig Bryksa, the new president and chief executive of the company, addresses the layoffs: “This restructuring is difficult, however we need to adjust the organization to match our current business needs . . . we are all focused on executing our transition plan” (The Canadian Press, 2018, para 5). It is noteworthy that the article did not specify what form the transition plan would take.

Because the future of oil and gas is perceived as uncertain, some participants – although seemingly unconcerned about *their* job security – expressed fear for the future of the industry when they described their hope that their children do not enter the industry after completing high school to make their livelihoods. A production worker explained that he would tell his son to “go more into the environmental side [of the oil industry]; stuff around

reclamation” because “at some point, there’s an end.” Moreover, a drilling rig worker told me that he has already told both of his children not to enter the industry:

Participant: Hopefully [the transition] is sooner because something’s gonna have to happen. I mean, the industry’s been awesome to me, I can’t complain. I started at the bottom and worked my way up to the top. I’ve gone through the good times and the bad times and all that, but it’s given me a good living, my family a good living.

Adams: So if your kids said to you [that they desire to work in the oil industry]

Participant: No. I’ve already told them both [no]. Like nope, you’re going to university, college, whatever. I don’t want you anywhere near the oil . . . I’d rather have him be an electrician or a plumber or go be a vet, whatever.

He continued to explain that his career has been hard on his family and he hopes he is not “going to be doing this in another 40 years.”

A geologist described her desire to work for an environmental company instead of an oil company. She explained the reasons for her preference: “I work in the oilfield, but I feel very strongly toward environmental practices . . . I’m not opposed to shifting. I’d prefer an environmental job as opposed to an oil job . . . I just think it would be a better fit for me.”

Generally, participants are confident that they will have work for the remainder of *their* careers in the oilfield but are uncertain and apprehensive about the future of oil operations in Saskatchewan for subsequent generations. Although most respondents acknowledge the inevitable shift away from fossil fuels toward more sustainable, renewable energy sources, they did not convey an understanding of the environmental necessity and urgency of the transition. For some, acceptance of renewable energy was due to a looming forced change, a sort of “if you can’t beat ‘em join ‘em” mentality, rather than embracing the transition as part of a plan to mitigate current climate change-issues trends for the collective good of the planet. Regardless of the inherent causes and resultant opinions of shifting to renewable energy sources, some participants are excited about the shift. One worker with 25 years of experience is looking forward to the day renewable energy becomes the mainstream method of producing and distributing energy:

I'd rather see [the shift] happen. Hopefully I'm going to be done in a little while but I wana see it happen. I'm not worried about oil for the rest of *my* life, but I'd rather see something good happen. Something cool. I wana see it though. I wana be alive for it lets put it that way.

Chapter 7: Conclusion

It is evident that the 15 oilfield workers in/around Moose Mountain Provincial Park have an array of perspectives and opinions about climate change and environmental issues. They differ on their perceptions regarding the most practical and sustainable methods for energy production and distribution, and the role and future of oil in Saskatchewan and Canada. Their respective belief-systems regarding climate change and sustainability are undoubtedly complex as they are influenced by personal values, media, the ideologies of their preferred political party, their company's environmental philosophy, and more. Although workers' answers to specific climate change-oriented questions varied greatly, common themes were identified between and across responses. The following paragraphs outline these commonalities and attempt to interpret their significance.

One finding of this study is that every participant, regardless of gender, age, experience, and/or role within the industry, conveyed robust "sense of place" notions comprised of both place attachment and place meaning components. Workers feel strongly about the Moose Mountain area and value it for many reasons including recreational opportunity, resource sustenance (i.e.: hunting and fishing), and family ties/lineage. Moreover, workers with the highest number of years' actively working and living in/near the park expressed the greatest sense of place meaning and attachment.

Participants feel a sense of obligation as "locals" to ensure the continued survival of the communities in which they work and play. Participants expressed a vested interest in being active and responsible community members, especially via their work practices. They feel accountable as invested community members to contribute, via company donations and their time, to causes and community initiatives they deem important. Workers expressed that practicing environmental stewardship was necessary to maintaining an upstanding reputation as a contributing community member. Moreover, many respondents described their

behaviours as being in accordance with “The Golden Rule” where they treat work-sites in the same way(s) they would want their own land respected. Workers were adamant that they adhere to government regulations and expressed confidence in the rigour of the standards that govern their jobs.

Although 14 out of 15 participants believe climate change *is* occurring to some degree, participants varied greatly regarding perceived causes and main contributors. An interesting finding that echoes Leiserowitz’s (2005) notion that many believe climate change is a part of earth’s natural cycles – multiple participants in my study ascribed current climate change issues to natural factors *outside* of human control. Additionally, some respondents suggested that it is the “human nature” of our culture that drives current consumption habits. This finding is correlated to Carroll’s (Forthcoming) idea that our industrialized systems currently discourage Canadians from choosing more sustainable options when it comes to energy.

Although many workers attributed climate change to natural causes, almost every worker provided suggestions of actions individuals and societies could take to mitigate further warming. These solutions include renewable energy, individual lifestyle choices (i.e.: limiting consumption and waste), technological advancements, and more. Participant’s faith in technology parallels Eaton’s (2017) findings that some Saskatchewanians believe that increases in technology will alleviate any environmental challenges. Even though participant’s described ways in which Canadians could help mitigate climate change, most did not convey a sense of urgency with their recommendations. Participants’ diverse range of suggestions are relatable to both Weber’s (2010) claim that many members of the public currently do not perceive climate change to be a severe issue in Canada and, conversely, The Environics Institute’s (2014) summary that Canadians are increasingly coming to accept the reality of climate change and are beginning to take the issue seriously.

Interestingly, workers mobilized elements of conflicting worldviews within the space of single interviews drawing simultaneously on aspects of scepticism and acceptance of scientific evidence of anthropogenic climate change. One worker illustrates this notion: “I don’t believe that humans are causing [climate change]. Well maybe a little bit.” Workers’ adoption of various climate change narratives reveals that they are conflicted about the validity and legitimacy of scientific consensus. This finding is supported by Barr and Gilg’s (2007) belief that there are many factors contributing to one’s perception of the causes and severity of climate change.

Respondents of this study tended to question the motive behind information disseminated by government, media, and environmental groups. Some participants were sceptical of the intentions of various organizations because they felt information was skewed to benefit their respective agendas. This finding parallels Tsfaty’s (2003) claims that if members of the public feel a media platform is sacrificing accuracy to achieve personal gains, the result will be a great deal of mistrust toward that organization. A drilling rig worker comments: “Who knows . . . maybe the conspiracy theories are right and the oil companies *are* running everything and are dictating everything. Who knows?” His question demonstrates the conflicted-nature of many oil workers’ understandings of the industry’s influence on policies that govern climate initiatives and/or energy issues. Conversely, many oilfield workers questioned the intentions of environmental groups and characterized anti-oil activists as hypocritical, similar to participants in Eaton and Enoch’s 2018 study.

Regarding the future of oil operations in Saskatchewan, again, workers are conflicted. Their perceptions of how long accessible oil reserves can be extracted in the province ranged from 15 to 150 years. Some workers felt satisfied that they would have work for the rest of *their* careers, but they expressed a desire for their children to receive training in a different field. Participants acknowledged the ways in which energy industries are changing and

heading toward more sustainable renewable sources. This finding contradicts research by Eaton (2017) whose Saskatchewanian participants believed that a “transition away from oil would be taking society backward in terms of social development” and that transitioning to renewable energy would only be feasible if it was undertaken by the oil industry itself (p. 10). The majority of workers believe a balance between fossil fuels and renewable energy is the current solution to both potential oil shortages and environmental issues. They expressed that this balance would utilize both renewable and non-renewable sources equally until society could “safely” function without heavily relying on oil. Once this occurred (which was not specifically discussed), renewable energy sources would replace oil and gas as the primary sources of energy.

Although I got the impression that most workers desire to be progressive and environmentally sustainable by embracing a transition to renewable energy, they feel an inherent need to convey loyalty to the industry where they make their livelihoods as though not to betray it. Thus, workers tended to apprehensively justify reasons why completely transitioning away from fossil fuels would not be an effective short-term plan for Saskatchewan and Canada. Most participants conveyed a fierce sense of loyalty to the industry and avoided disclosing any information they believed might incriminate it. This finding supports Kahan et al.’s (2011) belief that individuals tend to align their values with other members belonging to the same group and/or identity. Workers echoed the Saskatchewan government and the industry leaders’ claims that current environmental regulations are safe and beneficial to oil operations.

Another important finding of this study is that there is a large disconnect between oil industry workers’ belief that environmental regulations are adequate, rigorous and ensure environmental sustainability, and some environmental organizations/academics’ claims that not only do these regulations do very little for environmental protection, but that oil

operations need to be phased-out completely (see Eaton, 2017; Hlushko, 2017; & Rich, 2016). Moreover, participants felt that company operations are not only adequately regulated but are also transparent, accessible and accountable. Conversely, multiple researchers suggest there are large transparency gaps between industry operations and public awareness (McSheffrey et al, 2017).

In summary, participants identify strongly with the Moose Mountain area and feel responsible to ensure it continues to thrive both environmentally and economically. Although they described their sense of place through appreciation and gratitude, they did not connect the ways in which the oil industry can contribute to environmental degradation from oil operations. Participants expressed feelings of environmental stewardship yet were conflicted on the ways in which the industry contributes to anthropogenic climate change. Workers believe that the environmental regulations that govern their operations are sound, transparent and adhered-to – contrary to some environmentalists and academic researchers' views that claim the opposite.

Moreover, regardless of political orientation, job held within the industry, age, gender, or experience level, all participants conveyed a sense of appreciation for being able to express their perspectives and be understood in a non-threatening manner. A battery operator thanked me in the following way:

It's neat, it's cool. It's awesome to see, you know, a side where you're literally getting opinions. Like anything you've asked me tonight – you're not digging to find environmental impact on everything, you know? You just want the opinion of someone that works in the oilfield.

Workers were grateful to be able to tell their story and share their opinions in a safe environment. Because most feel that they are often stigmatized by some members of the public, they genuinely appreciated being able to proverbially let-their-guard-down and express themselves in an honest and open manner. Participants trusted me with their beliefs and allowed themselves to be vulnerable. I believe that creating a mutually respectful space

wherein participants could share their opinions allowed me to generate an abundance of meaningful data that I likely would not have been able to collect had I been an “outsider” to this community. This supports Angel’s (2014) findings that workers *are* affected by the stigmas they are subjected to and desire a shift in the way others perceive and interact with them as oil workers.

The richness of experiences and views that were shared with me further demonstrates the need to view oilfield workers as individuals with meaningful perspectives to share rather than perpetuating stereotypes of them as conforming to uniform ideals (Angel, 2014). The results of this study begin to fill the gap in knowledge about energy workers’ complex understandings of climate change and the future of energy in Saskatchewan. Oilfield workers’ narratives must be a part of the proverbial round-table discussion of environmental issues and energy solutions in order to find common ground and help mitigate current climate change issues. If they are not included in important climate/environmental conversations, I argue that resistance to transitioning away from oil will ensue as workers may feel excluded from meaningful discussions surrounding the future of energy in Saskatchewan and ultimately feel the need to act according to stereotypical oilfield-worker identities (Angel, 2014; Kahan et al., 2011). These identities stereotypically oppose green initiatives and transition-efforts and tend to act in ways that protect the interests of corporate oil regimes (Eaton, 2017; Carroll, Forthcoming). Typically opposing sides have a lot to gain from working together. As one worker stated – “my children are going to be on the same planet as the tree-hugging hippy environmentalist’s children are going to be on.” We are all in this together.

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