Permission to Pollute:

Regulating Environmental Corporate Crime in the Alberta Tar Sands

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Abstract

This study explores how the Canadian and Alberta governments downplay environmental harm in the Alberta Tar Sands, therein justifying its ongoing expansion and defining it as unnecessary to intervene through the law. In particular, this study draws on the concepts of hegemony, social harm and deep ecology to problematize how climate change has become the governments' main environmental concern in the tar sands, despite the existence of other, equally troubling issues, and how carbon capture and storage (CCS) has become the states' main climate change strategy, despite the largely untested nature of this technique. A critical discourse analysis of two government taskforce documents concerning CCS technology revealed that neoliberal and globalization discourses were used to narrowly conceptualize environmental harm, thereby privileging Canada's trade relations and economic strength over the environment's health. Relatedly, discourses of scientism were used to conceptualize climate change as a technical problem and CCS as the "preferred" solution.

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Introduction

Alberta, once known for its vast, awe-inspiring forests, a diverse range of plant and animal life, an interconnected series of fresh waterways, and the traditional land of dozens of First Nation groups, is now home to one of the most environmentally destructive human developments in the world. This development, known as the Alberta Oils Sands or Alberta Tar Sands,[1] is the second largest oil reserve in the world (Nikiforuk 2009: 1), producing approximately one million barrels of oil per day (Marsden 2008: 122). This lucrative industrial opportunity has attracted the attention of transnational oil corporations, who have invested over $200 billion in the tar sands (Nikiforuk 2008: 2), and garnered the support of the Canadian and Alberta governments by creating thousands of jobs (Smandych & Kueneman 2010: 87) and contributing $1.7 trillion to Canada's Gross Domestic Product (Radford & Thompson 2013). These investments, coupled with the governments' support, have stimulated an exponential growth in the tar sands, which has been so rapid that oil production in the tar sands is predicted to quadruple by 2020 (Marsden 2008: 122).

While the federal and Alberta governments have actively encouraged the tar sands' expansion, many environmental organizations, First Nation groups, scientists and intergovernmental organizations, including the European Union, have expressed concern and outrage over the environmental devastation that has resulted from this expansion. These groups have condemned tar sands corporations for clear-cutting sections of the Boreal Forest (Nikiforuk 2009: 3), riddling the land with open-pit mines (Dyer, Moorhouse, Laufenberg & Powell 2008: 6), depleting local water supplies (Radford & Thompson 2013), utilizing

[1] While supporters of this development use the term "oil sands" to suggest that the extraction of oil in Alberta is easy and environmentally benign (Smandych & Kueneman 2010: 88), I use the term "tar sands" because it more adequately reflects the toxic, molasses-like substance that is being extracted (i.e. bitumen) (Marsden 2008: 30) and because I am protesting the environmentally harmful practices that are used in this development.

"dirty" technologies that emit greenhouse gases (Hatch & Price 2008: 16), relying on carcinogens and neurotoxins[2] to process bitumen into oil (Kelly et al. 2010: 16178), and leaking toxic effluence into nearby waterways (World Wildlife Fund 2010: 6). These environmentally harmful practices have poisoned the air, water and land, thereby compromising the health of the natural environment. In addition, these practices have killed an untold amount of living beings, [3] caused the extinction of entire species (Timoney & Lee 2009: 71), and increased the prevalence of rare cancers and autoimmune diseases in local residents (Kelly et al. 2010: 16178).

Despite evidence that the tar sands contribute to widespread environmental devastation, the federal and Alberta governments have not classified this devastation as a serious harm and, as such, have failed to treat the activities associated with this form of production as crimes and the corporations who cause this devastation as criminals. Instead, both levels of government have ignored this destruction by surrendering the responsibility for environmental monitoring to industry-funded agencies who are accused of obscuring the extent to which the tar sands have damaged the environment (Clarke 2008: 171). Furthermore, both levels of government have stubbornly attempted to convince everyone that tar sands activities are environmentally benign by launching a multi-million dollar green washing[4] campaign (Smandych & Kueneman 2010: 99) and by muzzling scientists who have studied the environmental impact of the tar sands (MacIntyre 2014). They have also limited efforts to protect the environment from tar sands activity by refusing to implement strong

[2] Carcinogens are substances that cause cancer, whereas neurotoxins negatively impact the nervous system (Timoney & Lee 2009: 78).
[3] This term refers to any organism (e.g. insect, animal, plant) that exists in the natural environment (Naess 1989).
[4] Green washing occurs when "the rhetoric of the environmental movement [is used] to cloak ecologically damaging activities" (Suzuki & Dressel 1999: 84-85).

environmental regulations, slashing regulatory budgets, watering down existing regulations (Hsu & Elliot 2009: 470) and lobbying against international environmental agreements, such as the Kyoto Protocol (Marsden 2008: 126).

The purpose of this thesis is to examine how the Canadian and Alberta governments have downplayed environmental harms that occur in the tar sands, therein defining it as unnecessary to intervene through law and justifying its ongoing expansion. Of particular focus is the federal and Alberta governments' decision to prioritize climate change over all other environmental harms in the tar sands and to implement *carbon capture and storage* (CCS)[5] as the main strategy[6] for mitigating climate change-related harms. This thesis asks how environmental harm has been conceptualized within this strategy, as well as whose knowledge claims dominated and whose were marginalized in this conceptualization.

In order to evaluate how the federal and Alberta governments have downplayed the tar sands' role in contributing to climate change, I conduct a discourse analysis of two key documents that were instrumental in influencing the decision to implement a CCS strategy. These documents include: The ecoEnergy Carbon Capture and Storage Taskforce's report *Canada's Fossil Energy Future: The Way Forward on Carbon Capture and Storage* and the Alberta Carbon Capture and Storage Development Council's report *Accelerating CCS Implementation in Alberta*. Both of these taskforces were established by the federal and Alberta governments to determine if CCS could be implemented in Canada and, specifically,

[5] CCS is a regulatory strategy that encourages corporations to mitigate the harmful effects of carbon dioxide by installing a combination of technologies that allow them to capture carbon dioxide during the extraction and upgrading phases of bitumen, transport it via pipeline, and inject it deep underground where it is believed to be unable to contribute to climate change (Bankes, Poschwatta & Shier 2008: 587).

[6] These governments have prioritized climate change as the most important environmental problem in the tar sands and endorsed CCS as the most promising solution through the sheer amount of time and resources that they have invested in researching, developing, funding and publically promoting CCS.

the tar sands. The taskforces evaluated the legal, technological, social, economic and environmental barriers to implementing CCS and tabled recommendations to overcome them. Since their publication, these documents have been instrumental in the launch of CCS as the state's main strategy for addressing climate change in the tar sands. These documents have also been used to justify important legislative changes, such as transferring the liability associated with storing carbon dioxide underground from tar sands corporations to the Alberta government (Legislative Assembly of Alberta 2010: 13) and funding decisions, such as allocating $2 billion of taxpayers' money to encourage corporations to install CCS technologies in their facilities (Meadows & Crossman 2010: 42).

This thesis addresses a gap in the criminological literature in regards to environmental issues (Boyd, Chunn & Menzies 2002: 8). Drawing on the corporate crime and green criminology literature, I expose some of the practices that threaten our ability to protect the environment and challenge the discourses that justify and reproduce environmental harm. I also bring attention to the role that the government plays in causing environmental damage by exposing the ineffectiveness and pro-business ideology of tar sands regulation. These issues are important to explore because our species' survival and quality of life are intricately linked to the health of the natural environment (Suzuki & Dressel 1999: 38). As such, it is important to examine the role the government plays, whether through their inaction or inadequate policies, in perpetuating environmental harm so that we might hold governments accountable for what they have or should have done and, therefore, begin to better protect the environment.

The theoretical framework that guides my analysis is informed by Gramsci's notion of hegemony, the social harm approach and deep ecology. The concept of hegemony

describes the process of how the ruling class gains the "active consent" of other classes in order to reproduce the dominant social order (Pearce & Tombs 1998: 36). This notion is vital in helping me understand the process in which the federal and Alberta governments were able to define-away environmental harm as a technical problem that could be managed through CCS strategies, whilst still maintaining their legitimacy as a democratic ruler. The social harm literature problematizes the criminal justice system's monopoly over the concept of harm (Pemberton 2007: 33) and seeks to expand this concept by exploring the structural features of society that produce harm, including the dominant discourses that prioritize certain harms (e.g. crimes of violence) over others (e.g. environmental destruction) (Hillyard & Tombs 2004: 18). The social harm literature takes the concept of harm beyond the criminal realm, which is important given that most of the environmental degradation in the tar sands results from what is deemed in official terms to be "legal" corporate practices.

I also draw from deep ecology, which problematizes the dominant depiction of the relationship between humans and the environment (McLaughlin 1993: 8) as well as the role it has in negatively influencing how humans interact with the environment and other living beings (Devall 1988: 192). Deep ecology presents an alternative concept of the human-environment relationship by defining harm according to the needs of all living beings (Devall & Sessions 1985: 43). This theory decentres assumptions that environmental harm must be conceptualized in terms of what is harmful to humans, which enabled me to explore how the tar sands is harmful to the natural environment and non-human beings. Overall, this theoretical framework creates a broad concept of harm from which I analyze the definition of environmental harm that underlies the governments' CCS strategy.

As we shall see in the chapters that follow, I argue that the two taskforces are informed by discourses of neoliberalism, globalization and scientism. The first two discourses prioritized the strength of Canada and Alberta's economy over the health of the environment, thereby enabling the taskforces to narrowly conceptualize environmental harm in the tar sands and explain-away environmental destruction as an unfortunate, but necessary side effect of economic growth. The scientism discourse helped emphasize that climate change was a technical problem that could be easily mitigated by CCS technologies. As such, it enabled the taskforces to conclude that the tar sands could continue to expand because CCS would effectively minimize the environmental harm associated with climate change. In the process, alternative models of responding to the tar sands production, such as more stringent regulations or ramping down production were largely dismissed as unnecessarily radical and/or ineffective.

The remainder of the thesis is divided into five chapters. Chapter 1 explores how climate change became the federal and Alberta governments' main environmental concern in regards to the tar sands and how CCS became their main strategy for addressing climate change. This chapter also details the empirical data, research questions and methodology that form the basis of my analysis. Chapter 2 situates my project in the criminological literature, particularly within the corporate crime and green criminology literatures, while Chapter 3 builds on this work to develop my theoretical framework. Chapter 4 details my analysis of the two taskforce documents and discusses how these discourses intersect and/or conflict. Finally, Chapter 5 details alternative discourses of environmental harm in the tar sands, explores this harm from an alternative worldview and makes recommendations for the future.

Chapter 1: Methods and Sources

This chapter examines how climate change became the federal and Alberta governments' main environmental concern in relation to the tar sands, despite the existence of other, equally pressing environmental issues. It also examines how CCS became the main strategy for addressing climate change, despite the largely untested nature of this technique. The purpose of this chapter is to provide context for my analysis by situating the governments' decisions within the scope of knowledge claims surrounding environmental harm in the tar sands and to justify my empirical data, research questions and methodology. This chapter begins with a brief description of the regulations that govern tar sands activities and the environmental harms that occur in this development. This is followed by an explanation of how climate change became an international issue and how Canada reacted to this, including how CCS became a globally accepted option for addressing climate change and Canada's primary climate change strategy for the tar sands. I then justify my empirical data by demonstrating how the two taskforce documents played a significant role in the federal and Alberta governments' adoption of CCS before outlining my research questions and methods.

Addressing Environmental Harm

This section details the environmental regulations the can be used to govern tar sands activity. The *Constitution Act of 1982,* which outlines the division of powers for each level of government, divides the responsibility for addressing environmental destruction in Canada among federal, provincial, and municipal governments (Bendickson 2009: 30). Accordingly, the federal government has the "legislative authority" to address any environmental issue related to interprovincial and international relations, trade, taxes and the criminal law

(Bendickson 2009: 32-3). The federal government has three laws, *Canadian Environmental Assessment Act,* the *Canadian Environmental Protection Act 1999*, and the *Fisheries Act*, which form the foundation of their environmental regulations (Bendickson 2009: 33-6).[7] These laws give the federal government the power to regulate corporate activities, such as evaluating development proposals, approving and/or denying new projects based on their potential impact on the environment, setting limits on the quantity of pollutants that can be emitted into the air and/or water, and holding corporations responsible (primarily via fines) for any environmental harm that they have caused (Bendickson 2009: 33-6). These environmental policies are enforced by Environment Canada and the Department of Fisheries and Oceans (Bendickson 2009: 8).

The provincial governments have the legislative authority to address any environmental matter related to civil and property rights, as well as to the development of their natural resources and energy facilities (Bendickson 2009: 39). This allows provincial governments to set limits on the emission and/or disposal of chemicals, dictate the most up-to-date technologies and processes corporations must follow to mitigate environmental pollution and determine the repercussions for not adhering to these regulations. Provincial regulations that govern tar sands activities are enforced by several provincial organizations, such as the Energy Resource Conservation Board and the Environment and Sustainable Resource Development (Radford & Thompson 2013).[8]

The legislative authorities of municipal governments are determined by their provincial government (Bendickson 2009: 39). These authorities may allow municipal

[7] These are the main federal environmental acts, but are not the only way that the federal government can address environmental destruction.

[8] The Alberta government recently passed Bill 2 (Responsible Energy Development Act 2012) to dissolve the power of current regulators in the tar sands in order to replace them with the Alberta Energy Regulator (Government of Alberta 2012, Nov. 22). Gailus (2012: 40-1) contends that this is part of a larger attempt to "streamline" regulations in the tar sands to make it easier for oil corporations to extract bitumen.

governments to address environmental issues related to garbage disposal, zoning issues or park maintenance. In addition to assigning the legislative authorities for each level of government, the *Constitution* protects First Nation treaty rights, which include the right to live off the land, hunt, trap and fish (Bendickson 2009: 43). Because these rights are protected, each level of government is mandated to consider the impact that their decisions, policies and laws could have for First Nation groups.

While each level of government has the authority to monitor the environmental impact of any human development project under their jurisdiction, there are also several private organizations, such as the Wood Buffalo Environmental Association, Cumulative Environmental Management Association and Regional Aquatics Monitoring Program, who monitor environmental conditions in the tar sands. Members of these organizations include oil corporations, First Nation groups and local citizens. The Wood Buffalo Environmental Association is responsible for monitoring the "environmental integrity" of the Wood Buffalo district where the majority of the tar sands exist (Marsden 2008: 163-4). The Cumulative Environmental Management Association is responsible for monitoring the "cumulative" environmental effect of tar sands activities throughout Alberta (Marsden 2008: 164). The Regional Aquatics Monitoring Program is specifically responsible for monitoring the quality and quantity of waterways in Alberta (Bowie 2004).

Although the Canadian and Alberta governments boast that the tar sands have the strictest environmental regulations in the world (MacIntyre 2014), several environmental organizations, First Nations groups, and academics have accused these governments of failing to use existing regulations to mitigate the environmental impact of the tar sands (Marsden 2008: 164). For instance, Hatch and Price (2008: 21) note that the federal government has only used the CEAA to evaluate five project proposals for the tar sands; all

of which were approved. What is more, the majority of the remaining project proposals were approved by the Alberta government behind closed doors rather than through public hearings where citizens could voice their concerns over the proposed projects (Bowie 2004).

Timoney and Lee (2009: 65) argue that the fact the federal and Alberta governments continue to approve tar sands projects is problematic because they have never conducted a "comprehensive, peer-reviewed [assessment] of [the] cumulative impact of tar sands development." To make matters worse, both governments have unofficially imposed a "moratorium on serious environmental regulation" (Marsden 2008: 72), which means that existing regulatory groups, such as the Department of Fisheries and Oceans, are not holding oil corporations responsible for polluting the environment (Timoney & Lee 2009: 65) and that new regulations that could effectively mitigate environmental destruction in the tar sands are not being implemented.

This lack of regulatory action is exacerbated by these governments surrendering their responsibilities for monitoring the impact of the tar sands to organizations, such as the Regional Aquatic Monitoring Program, which are funded by the tar sands industry (Radford & Thompson 2013). These groups are in a position of conflict because they are tasked with evaluating the environmental impact of the tar sands but are, at the same time, profiting from these environmentally harmful activities (Marsden 2008: 163-4). As such, these groups have an interest in obscuring the damage caused by the tar sands and have consistently published reports indicating that there has been no significant environmental damage associated with the tar sands (Nikiforuk 2008: 171). This has prompted critics to question their research methods (Nikiforuk 2008: 76) and has contributed to several people withdrawing their membership from these groups (Clarke 2008: 72).

The federal and Alberta governments have also blatantly ignored their mandated responsibility to prioritize First Nation treaty rights. For instance, they ignored the protests of forty-four First Nation groups who joined together to argue that the expansion of the tar sands was a violation of their treaty rights and who demanded that the governments stop the approval of new projects until stronger environmental regulations are implemented (Droitsch & Simieritsch 2010: 2). With both governments approving new projects, ignoring the concerns of the public and scientific proof of environmental harm, neglecting to evaluate the cumulative impact of these projects, refusing to hold corporations accountable for their destructive actions and allowing industry-run organizations to monitor the impact of their own activities, they have facilitated the destruction of Alberta's environment. In the next section I outline some of the tar sands' environmentally destructive practices.

Environmental Harm in the Tar Sands

This section reviews some of the environment harms that occur in the tar sands, the groups who problematize these harms and the Canadian and Alberta governments' reaction to these issues. It is important to understand that the tar sands are a massive project. In terms of its size, it could easily fit the entire country of England (Nikiforuk 2009: 3). The majority of this development is situated in the Boreal Forest, under which Alberta's bitumen supply exists (Nikiforuk 2009: 3).[9] This forest is a very important ecosystem for the world because it is a giant carbon sink, which means that the trees and peat in the forest absorb carbon dioxide, a greenhouse gas related to climate change, from the atmosphere (Suzuki & Dressel 1999: 56).[10] This forest also filters water from nearby waterways and provides shelter and

[9] Intensive oil extraction depleted Alberta's conventional oil supplies by the 1970s so oil corporations now extract Alberta's bitumen and process it into synthetic oil (Meadows & Crossman 2010: 423).
[10] The Boreal Forest stores approximately 186 billion tons of carbon dioxide (Nikiforuk 2009: 30).

food for thousands of plant and animal species (Clarke 2008: 174). Despite its importance, the Alberta government has leased 60% of this forest to oil corporations (Nikiforuk 2009: 3). These corporations clear-cut entire sections of this forest to access the bitumen underneath this land and to make room for bitumen-processing facilities. This has resulted in the loss of 36% of the coniferous and 35% of the deciduous trees in this area (Timoney & Lee 2009: 71). MacDonald (2009: 153) asserts that deforestation is dangerous because it destroys trees and peat that store carbon dioxide, thereby releasing this gas back into the atmosphere where it contributes to climate change. The destruction of this forest also compromises the quality of nearby bodies of water and fragments the habitat of thousands of species (Clarke 2008: 174). The deforestation of the Boreal Forest is especially damaging given that it took 3,000 years to grow the peat and trees that make up the foundation of this ecosystem (Marsden 2008: 111).

After clear-cutting sections of the forest, tar sands corporations extract bitumen. The extraction of bitumen is much more complicated and environmentally harmful than that of conventional oil (Clarke 2008: 15). [11] There are two techniques for extracting bitumen: *open-pit mining* and *in situ mining*. Open-pit mining involves utilizing "three-storey high, four-hundred-ton caterpillar trucks" (Nikiforuk 2008: 13) to dig giant holes in the land, remove valuable topsoil and drain nearby wetlands (Clarke 2008: 22). To extract just one barrel of bitumen, oil corporations must dig up four tons of earth (Dyer et al. 2008: 6), which adds up to approximately 450 tons of earth per production day (Bowie 2004).

Despite the destruction that has been inflicted on the landscape, the federal and Alberta governments allow these activities to continue on the basis that oil corporations are required to have a restoration plan for returning the land to its original condition (Marsden

[11] This is not to say that the extraction of conventional oil is environmentally friendly.

2008: 168). [12] However, as Hatch and Price (2008: 9) point out, no tar sands corporation has ever developed an "environmentally viable plan". This is because any real attempt to restore the land would cost billions of dollars, which would null and void all revenue that corporations make from the tar sands (Nikiforuk 2009: 32).

Since oil corporations have depleted bitumen supplies that are relatively close to the surface of the earth the prevalence of open-pit mining has given way to a second, arguably more destructive, technique of extraction: in situ mining. This technique is used when bitumen is too deep underground to access via open-pits. This process uses a combination of wells, pumps and steam to melt bitumen so that it can be drawn to the surface of the earth (Nikiforuk 2008: 14). Nikiforuk (2008: 69) claims that this process increases the temperature of the ground water surrounding the bitumen which, in turn releases toxic poisons such as arsenic, copper, lead, and mercury into the atmosphere. This process requires a substantial amount of natural gas and water. To extract just one barrel of bitumen oil corporations use half a barrel of natural gas (Marsden 2008: 121), which is considerable in that the tar sands produce one million barrels of oil a day (Marsden 2008: 122). This significantly exacerbates climate change not only because natural gas produces carbon dioxide, but also because oil corporations have to clear-cut more of the Boreal Forest to build steam plants, thereby releasing the carbon dioxide it was storing (Nikiforuk 2009: 31).

In terms of water, the tar sands development relies on the Athabasca River , which is one of the largest undammed rivers in North America (Clarke 2008: 162).[13] Clarke (2008: 163) insists that this river is important because it filters into the Peace-Athabasca Delta,

[12] This does not just apply to open-pit mining. This restoration plan must account for any alterations to the land, water or air that corporations make (Grant, Dyer & Woynillowicz 2009: 22).
[13] The Athabasca River refers to the series of interconnected lakes, ponds, wetlands and groundwater that flow from the Athabasca River, through the tar sands development and into the Peace-Athabasca Delta.

which is one of the largest freshwater deltas in the world. Three major tar sands operations, Syncrude, Shell and Suncor (Marsden 2008: 122), collectively remove approximately 604 million cubic meters of water from the Athabasca River on a yearly basis in order to extract bitumen (Droitsch & Simieritsch 2010: 4). This has significantly depleted the Athabasca's water levels, which Marsden (2008: 122, 175) takes issue with given that neither the Canadian nor the Alberta government have ever studied how the Athabasca's *reduced flow* has affected aquatic life even though they are mandated to do so.

Once bitumen is extracted the oil must be separated from the rest of the contaminants and then upgraded to synthetic oil. Unlike conventional oil, bitumen is a "molasses"-like matter that contains oil (Marsden 2008: 30), dirt, and several contaminants, such as heavy metals, sulfur and nitrogen (Nikiforuk 2009: 7). The conversion process is complex. It takes two to five barrels of water and several toxic chemicals, including carcinogens and neurotoxins, to process bitumen into one barrel of synthetic oil (Clarke 2008: 161). This process leaves behind a thick, toxic effluence that is dumped into tailings lakes (World Wildlife Fund 2010: 2). [14] These lakes include naphthenic acids, benzene, metals, salts, polycyclic aromatic hydrocarbons, and cyanide, some of which are banned or regulated by the *Canadian Environmental Protection Act* (World Wildlife Fund 2010: 6). In the summer months these lakes warm up and release these chemicals in a gas form into the atmosphere (Hatch & Price 2008: 10).

Members of the World Wildlife Fund (2010: 7) problematize the fact that these tailings do not freeze during the winter since they are constantly being pumped with warm effluence. Since these tailing lakes are open year round, birds and other animals often

[14] I refer to these bodies of chemicals as "tailings lakes" because they are approximately 30km^2, which is more equivalent to the size of a lake than a pond (World Wildlife Fund 2010: 2).

mistake these tailings lakes for freshwater lakes. When animals enter these tailings lakes they become trapped in the thick substance and often die as a result of drowning, exposure to the elements, or ingesting toxic effluence (World Wildlife Fund 2010: 7). The media and public became aware of this in April 2008 when a Syncrude whistleblower reported to Greenpeace that several hundred ducks had landed on Syncrude tailings lakes and died (Nikiforuk 2008: 77). This created a media storm that prompted the government to investigate. Originally Syncrude totalled the number of dead ducks at 500, but during the investigation it was discovered that the number was closer to 1,600 (Carota 2009). The company agreed to pay a $3 million fine, which is the largest environmental fine in Alberta's history, after the prosecutor threatened to apply a fine of $800,000 per bird that had perished in the tailing lakes (Wingrove 2010, Oct. 22).[15] Wingrove (2010, Oct. 22) maintains that for a corporation whose net worth is over a billion dollars, this fine is fairly insignificant. What is more, this fine proved to be a one-time event as several days after Syncrude agreed to pay this fine 550 more ducks died on Syncrude's and Suncor's tailings lakes, but no charges were laid ("Ducks killed in Alberta oilsands" 2012, Apr. 10).

Hatch and Price (2008: 7) find the existence of these tailing lakes particularly troubling because they continue to expand without government intervention and are now so large that they can be seen from space. These lakes hold four decades worth of toxic effluence and are situated on either side of the Athabasca River (Nikiforuk 2008: 78). Because they are constructed of sand they often leak (World Wildlife Fund 2010: 6) anywhere from 11 million (Price 2008: 2) to 36 million litres of toxic chemicals per day into the Athabasca River (Timoney & Lee 2009: 73). Despite this, Rob Renner, the Minister of

[15] $80 000 is the maximum fine available to federal and provincial regulatory agencies. By applying this fine to each deceased bird, Syncrude would have had to pay $481 million had they not made a private deal with the prosecutor (Wingrove 2010, Oct. 22).

Environment Alberta, maintains that they have found nothing to indicate that the tar sands have negatively impacted the quality of water (Carota 2009).

The Athabasca Chipewyan, a First Nations group who lives downstream from the tar sands, disagrees with this view. This group has spent the last three decades trying to get the Canadian and Alberta governments to address their concerns regarding the quality of the Athabasca River. As early as 1982, members of Fort Chipewyan noticed that the fish in the river tasted like oil, but the government ignored their concerns (Marsden 2008: 184). In 2003, Dr. John O'Connor, a general practitioner in Fort Chipewyan, joined this fight when he noticed that an unusual number of the Athabasca Chipewyan were suffering from rare cancers and autoimmune diseases (Carota 2009). He reported his findings to several regulatory agencies, such as the Energy and Utilities Board of Alberta and Health Canada, requesting that a study be conducted on the effect that the tar sands was having on the health of the Fort Chipewyan community. His requests were ignored until he took the issue to the media (Marsden 2008: 185). This prompted Health Canada to investigate the quality of water in the Athabasca River wherein they reported that there was nothing wrong with the water (Marsden 2008: 188). Not only did they dismiss the concerns of the Fort Chipewyan community and Dr. O'Connor, but they along with Environment Canada, requested that the College of Physicians and Surgeons of Alberta investigate Dr. O'Connor for causing "undue alarm" and "community mistrust" of the government (Carota 2009). This investigation resulted in Dr. O'Connor relocating to another province.[16]

Years later, the Athabasca Chipewyan were joined by several First Nations groups who expressed their concerns over increased cancer rates and water quality to the Federal

[16] This is particularly upsetting since Dr. John O'Connor had worked there long enough to gain a rapport with the Athabasca Chipewyan. This rapport was rare given the constant overturn of practitioners in this community (Radford & Thompson 2013).

Standing Committee on Environment and Sustainable Development. In response to these concerns, the Alberta Cancer Board conducted a study and found that cancer rates in Fort Chipewyan had increased by 30% (Droitsch & Simieritsch 2010: 2). The Alberta Cancer Board specifically found that leukemia (blood cancer) rates were three times higher and cholangiocarcinoma (bile duct cancer) were seven times higher in this area (Radford & Thompson 2013). Immediately after this report was published, the Alberta Health Services downplayed the seriousness of these findings (Droitsch & Simieritsch 2010: 2) and the tar sands industry defended their practices by attributing the increased cancer rates to the natural erosion of bitumen formations (Radford & Thompson 2013).

David Schindler, the "world's most heralded aquatic ecologist", set out to disprove that these cancer rates were the result of "natural" causes by conducting the first independent study of the tar sands' impact on the Athabasca River (Gailus 2012: 26). [17] By testing several layers of snow within a 50 km range of the tar sands industry, he found that the tar sands released 13 heavy metals, including lead, mercury, and arsenic downstream in Fort Chipewyan (Radford & Thompson 2013). [18] These findings were confirmed by Environment Canada, but the Alberta government still insisted that it was a result of natural processes (Radford & Thompson 2013). Timoney and Lee (2009: 67) conducted a follow up study on the Athabasca River's water quality and discovered that there were high levels of polycyclic aromatic hydrocarbons[19] in aquatic species.

[17] See Kelly et al. (2010) for the full results of Schindler's study.
[18] He tested the snow so that his findings would only reflect the particulates emitted by refineries and smokestacks in the tar sands. This allowed him to disprove the oil industry's argument that the presence of heavy metals in the area were caused by natural bitumen formations (Radford & Thompson 2013).
[19] This can cause reproduction and growth disruptions as well as liver disease (Timoney & Lee 2009: 65).

Climate Change

This section details how climate change[20] became an internationally recognized issue and how the Canadian and Alberta governments have responded to pressures to decrease their greenhouse gas emissions, particularly in the tar sands. The purpose of this section is to demonstrate how both governments have undermined any real attempt to address climate change while, at the same time, appearing as though they are dedicated to the reduction of greenhouse gas emissions. This will provide context for my discussion of CCS as the governments' "solution" to climate change in the next section.

Climate change refers to alterations in the "envelope of gases" that compose earth's atmosphere (Suzuki & Dressel 1999: 59). These gases regulate everything in the environment, from the quality of air and water, to weather patterns, to sea levels to the growth of plant life (Brisman & South 2013: 1). These gases also regulate the temperature of the planet by controlling how much of the sun's energy enters into and is emitted from the earth's atmosphere (MacDonald 2009: 153). In order for life to be sustained on this planet, the concentration of gases must remain relatively stable. A slight increase in this concentration can result in a larger quantity of solar energy being trapped in the earth's atmosphere, thereby increasing the earth's temperature (Suzuki & Dressel 1999: 59). This is related to a host of repercussions, such as polar ice caps melting, sea levels rising, the extinction of species, fresh water shortages, fluctuations in the growth period of plant life (MacDonald 2009: 153) and human health effects associated with UV-B radiation (Boyd 2003: 69). Climate change threatens the health and survival of all living beings and the natural environment and has therefore risen to the top of the global agenda despite decades of resistance by corporations and some (mostly Western) states.

[20] Alternatively called "global warming".

Climate change gradually became classified as a "serious" issue in the late 1980s when scientists and the public became increasingly concerned with the global occurrence of extreme weather and temperature changes (Boyd 2003: 84). On December 6th, 1988, after decades of mounting scientific evidence demonstrating that these changes were related to high levels of greenhouse gas emissions, such as carbon dioxide, methane and nitrogen, [21] the United Nations (UN) officially accepted the position that climate change needed to be addressed (General Assembly of UN 1988). The UN set the climate change mandate into action by endorsing the development of the Intergovernmental Panel on Climate Change (IPCC) (General Assembly of UN 1988). This panel was tasked with reviewing the scientific and socioeconomic data on climate change to establish what the problem was, how it came about, what the potential consequences of climate change were and how governments could address the problem (General Assembly of UN 1988). In particular, this panel was established to put an end to the debate on whether climate change occurred naturally or was caused by humans (Suzuki & Dressel 1999: 57).

In their first report, the IPCC determined that climate change is caused by human activities that emit greenhouse gases (General Assembly of UN 1988). The IPCC predicted that carbon dioxide levels would double by 2050 if humans did not limit or stop activities that produced these gases. This was based on their discovery that these emissions accumulate over time and can continue causing climate-related changes for thousands of years after these gases have been emitted (Hartzell-Nichols 2012: 98). They also found that gases accumulate on a global level traversing the provincial, national and continental jurisdictions in which they are emitted. The findings of this report created widespread panic and made every human

[21] These gases are referred to as "greenhouse gases" for their ability to trap the sun's energy in the atmosphere, thereby increasing the temperature of the planet, much like a greenhouse would (Boyd 2003: 80).

action, business practice and environmental policy subject to criticism for its role in exacerbating climate change. Because of this, the UN and governments across the world decided to develop laws and policies to minimize the impact of climate change by decreasing greenhouse gas emissions (Goetz, Decastro, Taylor & Haugen-Kozyra 2009: 390). [22]

The Canadian government responded to this pressure by announcing its *Green Plan* in which it promised to "stabilize" its greenhouse gas emissions by the year 2000 (Boyd 2003: 86). This goal, although admirable, was undermined by two decisions that then Prime Minister Brian Mulroney made a year earlier. The first was to make widespread cuts to environmental regulations in the oil and gas industry. This decision was influenced, in part, by intense lobbying by the Alberta government and the energy industry who feared that the *Green Plan* would increase production costs by forcing energy corporations to make huge reductions in their emissions (MacDonald 2009: 159). These cuts allowed corporations in the tar sands to continue their carbon dioxide-emitting practices by reducing the amount of rules, the power of the regulatory agencies who govern the industry, and the severity of the penalties in place to ensure that oil corporations were cognizant of and held responsible for their environmentally harmful practices (Paehlke 2009: 8).

The second decision that undermined Canada's goal of stabilizing its greenhouse gas emissions was to sign the *Free Trade Agreement* with the United States of America (US). This agreement contained a "proportionality sharing clause"[23] that required Canada to consistently export a certain percentage of its goods, such as oil, [24] to the US (Marsden 2008: 74). MacDonald (2009: 153) contends that this decision compromised Canada's ability to

[22] The UN was concerned with the social and economic ramifications of climate change rather than with the negative impact it could have on the environment and living beings (General Assembly of UN 1988).
[23] This clause was also included in the *North American Free Trade Agreement*, which is the current trade agreement between the US, Canada and Mexico (Marsden 2008: 73).
[24] Canada is currently required to export 60% of its oil and gas to the US (Marsden 2008: 73).

decrease its greenhouse gas emissions by legally binding Canada to produce oil (which emits a large portion of Canada's greenhouse gases) regardless of the environmental impact.

Despite these decisions, Canada was committed (at least theoretically) to the reduction of greenhouse gases. In 1992, after four years of research, the UN drafted the United Nations Framework Convention on Climate Change (UNFCCC), of which Canada was the first to ratify (MacDonald 2009: 154) out of 192 countries (Goetz et al. 2009: 383). This convention encouraged signatory countries to work together to decrease their impact on climate change by developing their own policies and laws and by researching and developing new technologies to combat climate change (Boyd 2003: 85). Unfortunately, the UNFCCC had no specific goals regarding how or by what year the ratifying countries should reduce their greenhouse gas emissions and these countries were not legally bound to meet their reduction goals (Boyd 2003: 85). As such, there were no ramifications for when a country did not meet its goal.

In response to the UNFCCC, Jean Chretien's Liberal government implemented *Canada's National Action Program on Climate Change*, Canada's first ever national program to reduce greenhouse gas emissions (MacDonald 2009: 154). Although all of the provinces agreed to this program, the Progressive Conservative premier of Alberta, Ralph Klein, and the oil industry lobbied the federal government not to enforce this program and not to sign the Kyoto Protocol, which would make the UNFCCC targets legally binding (MacDonald 2009: 159).

The Kyoto Protocol, developed two years later (Paehlke 2009: 7), sought to reduce the world's greenhouse gas emissions by 5% below 1990 levels by 2012 (Clarke 2008: 60). In order to reach this goal, each country was given its own reduction targets based on their current greenhouse gas emission levels and a timeline for reaching this target. Accordingly,

Canada was supposed to reduce their emissions by 6% by 2012 (Goetz et al. 2009: 387). Canada did not ratify the protocol immediately because of the ongoing pressure from several provinces and industries who opposed its ratification (Meadows & Crossman 2010: 432). Instead, the federal government and Progressive Conservative government in Alberta responded by providing "heavy incentives" for corporations to start-up new extraction facilities in the tar sands (Paehlke 2009: 7). [25] These governments essentially undermined the potential success of Canada's first national climate change program and their ability to achieve their Kyoto goals by actively supporting the expansion of the tar sands and, therefore, an increase in Canada's greenhouse gas emissions.

After unabated international pressure, Canada ratified the protocol in 2002 (Paehlke 2009: 9). This delayed ratification compromised Canada's ability to reach its Kyoto goal since it gave Canada five less years to reduce its greenhouse gas levels. To make matters worse, the Alberta government broke away from the national climate change strategy to implement its own climate change policy that did not adhere to Canada's Kyoto goal (Bankes & Lucas 2004: 360).

The Alberta government decided to release their very first climate change policy a month before Canada ratified the protocol. Entitled *Albertans and Climate Change: A Strategy for Managing Environmental and Economic Risks* (Alberta Environment 2002: 8), the report condemned the Kyoto Protocol and warned that "ratifying Kyoto without a full understanding of the implications, and without a full understanding and commitment from Canadian business, governments and individuals will be nothing short of disastrous for our national, provincial and territorial economies." Alberta's goal, according to this document,

[25] Tar sands corporations currently receive $1.4 billion in federal subsidies per year (MacDonald 2009: 160) and have been given permission by the Alberta government to only pay part of their mandated 25% royalty to provincial government (Marsden 2008: 156).

was to reduce "carbon intensity" to 50% below 1990 levels by 2020 (Hsu & Elliot 2009: 470).[26] At first glance this appears impressive compared to the Kyoto goal of only a 6% Canada-wide reduction. However, Alberta's climate change policy gave the province eight extra years to reduce its greenhouse gas emissions and it relied on intensity-based, rather than aggregate-based levels for evaluating these reductions (Bankes & Lucas 2004: 360).[27] Alberta's resistance threatened Canada's ability to reach its Kyoto goal since Alberta accounted for one third of Canada's overall greenhouse gas emissions (Bankes & Lucas 2004: 360).

The federal Conservative government finally admitted in their 2008 climate change policy, *Turning the Corner: Taking Action against Climate Change,* that it would be challenging for Canada to meet its Kyoto Protocol goal because Canada's greenhouse gas emission levels had actually risen by 25% since 1990 (Government of Canada 2008b: 2). This acknowledgement foreshadowed the government's withdrawal from the Kyoto Protocol in 2011, one year before the ratifying countries were supposed to reach their reduction goals (Kennedy 2011, Dec. 12). Prime Minister Stephen Harper's Conservative government withdrew, stating that the Liberal government committed to an unrealistic goal and that the current government did not want to pay the consequences for this decision (Kennedy 2011, Dec. 12).[28] In the 2008 climate change policy, the federal government said that they would compensate for these growing greenhouse gas levels by reducing their emissions by 60-70% by 2050 (Government of Canada 2008b: 7).

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[26] This made Alberta the first province in Canada to develop a climate change strategy (Meadows & Crossman 2010: 433).

[27] "Intensity-based measures" tie greenhouse gas emission levels to oil production in the tar sands. If oil production increases then the aggregate amount of greenhouse gas emissions can increase as long as the proportion of emissions to oil production stays the same (Bankes & Lucas 2004: 360).

[28] If they had not withdrawn from the Kyoto Protocol, the Canadian government would have been fined $14 billion for failing to meet their 2012 reduction goal (Kennedy 2011, Dec. 12).

Since ratifying the Kyoto Protocol the federal government has spent $6 billion addressing the issue of climate change (Nikiforuk 2009: 3) and there has been a flurry of new climate change-related policies, regulations and goals introduced by federal, provincial and municipal governments in Canada. Despite all of this, critics charge that the government has not taken any concrete steps towards decreasing Canada's greenhouse gas emissions (Boyd 2003: 87). Furthermore, pulling out of Kyoto has left Canada open to scrutiny for its role in exacerbating climate change. This is particularly true for the tar sands given that it is "Canada's fastest growing source of new greenhouse gas emissions" (Hatch & Price 2008: 16). The tar sands have exacerbated climate change by using bitumen to make oil, which produces three times more carbon dioxide than conventional oil (Paehlke 2009: 7), by causing widespread deforestation, by destroying carbon sinks that prevent carbon dioxide from being released in the atmosphere, by relying on in-situ mining, and by storing excess toxic chemicals in tailing ponds (all of which emit greenhouse gases).

As such, the tar sands have gained international notoriety for its growing emission levels. For instance, the European Union (EU) has begun to boycott oil from the tar sands, classifying it as "dirty oil". The EU's *Clean Fuel Policies* aims to reduce the "greenhouse gas intensity" of fuels by classifying fuels according to how much carbon dioxide they emit (Carrington 2013, Nov. 19). They have proposed that fuel from the tar sands be classified as 25% dirtier than conventional oil (Carrington 2013, Nov. 19). If this happens, it may reduce the corporate interest in extracting bitumen and the willingness of countries to import the oil which may, in turn, decrease the profitability of the tar sands. This realization spurred the Canadian and Alberta governments to lobby against the EU's fuel policy arguing that it unfairly discriminates against their product (McDiarmid 2014, Feb. 25).

The stigma attached to the tar sands' oil has also influenced the US President Barak Obama's hesitancy in approving the Keystone XL, which is a major pipeline that would pump oil from the tar sands to the US. Critics charge that this pipeline would make the US dependent on "dirty oil", which could prompt international criticism of the US' climate change policies (Panetta 2014, Mar. 4). The Canadian government's attempt to lobby the US to accept this pipeline has not been successful thus far (Panetta 2014, Mar. 4). This stigma has also created tension between Alberta and other provinces, such as Ontario, Quebec and British Columbia, since each province has blocked the expansion of tar sands development in their provinces by refusing to approve pipeline and processing facilities ("B.C. officially opposes Enbridge" 2013, May 31). [29]

As a result of all of this negative attention, climate change presents a threat to the legitimacy of the tar sands and, as such, the federal and provincial governments have proposed a solution that is expected to drastically reduce greenhouse gas emissions in the tar sands.

Carbon Capture and Storage

In addition to documenting the development of CCS strategies, this section situates the following two CCS taskforce documents, *Canada's Fossil Energy Future: The Way Forward on Carbon Capture and Storage* and *Accelerating CCS Implementation in Alberta*, which compose the empirical data for this study, in the series of events that contributed to the governments' implementation of its CCS strategy.

CCS is essentially a series of technologies that are supposed to mitigate the harmful effects of carbon dioxide (Bankes et al. 2008: 587). These technologies, which can be integrated in new factories or retrofitted to old factories, allow corporations to capture carbon

[29] Some of these provinces already process and refine Alberta's bitumen (Hatch & Price 2008: 2).

dioxide that are emitted from their facilities, transport it via pipeline and inject it deep underground where it is believed to not contribute to climate change (Bankes et al. 2008: 587).

CCS has its roots in the International Energy Agency's (IEA) Greenhouse Gas Research and Development Programme (GGRDP). The IEA is an organization that is composed of several energy corporations and countries, such as Canada and the United States (IEA 2007: 2) and its mandate is to develop a system to control or limit disruptions to the world's oil supply, control the world's demand and supply system for oil, work in connection with governments to develop global energy policies and collaborate energy and environmental policies (IEA 2007: 2). The GGRDP was developed in 1991 in response to the UN's acknowledgement that climate change was a serious problem (IEA 2009: i). This group was tasked with finding a way to reduce greenhouse gas emissions in a way that ensured climate change did not result in a crisis for the world's oil.

Soon after this program was developed, the IEA began to promote and research CCS technologies as one of the top methods for mitigating greenhouse gas emissions (IEA 2009: i). The IEA was interested in developing a method to separate the emission of carbon dioxide from the negative effects that this gas could have on the climate. The notion that carbon dioxide could be captured and then injected underground held promise for the IEA since it would allow energy corporations to continue their business practices rather than having to alter or stop them (IEA 2009: i).

CCS' potential spurred the IEA to collaborate with members of the energy industry and various governments and organizations to launch test sites in several countries, including Canada, Australia and Japan, among others (IEA 2007: i). Canada's test site, named the IEA's Greenhouse Gas Weyburn CO_2 Monitoring and Storage, was launched in 2002 at the

Weyburn-Midale plant in Regina, Saskatchewan (Beauregard-Tellier 2006: 2). This project is funded by the federal government (not oil corporations!), monitored and evaluated by the IEA (Beauregard-Tellier 2006: 2) and endorsed by the Carbon Sequestration Leadership Forum (CSLF), an intergovernmental organization.[30] The purpose of this site was not so much related to climate change as it was to developing a method for using carbon dioxide to increase the yield of oil that could be extracted, which was previously unreachable through conventional methods (IPCC Working Group III 2002: 47).[31] As Marsden (2008: 231) explains, this plant uses carbon dioxide from a coal gasification plant in North Dakota, liquefies it and pumps it into the ground, thereby increasing the pressure and loosening the oil from within the rock. This process makes it easier to pump the oil back up to the surface of the earth and leaves empty space for the carbon dioxide to be stored permanently.

A year before this plant was opened, the UNFCC, the organization responsible for exposing the harms of climate change, asked the IPCC to prepare a technical paper on the potential of CCS technologies for mitigating greenhouse gas emissions (IPCC Working Group III 2002: 2).[32] This paper assessed the scientific, legal, economic, social interest and environmental implications of CCS (IPCC 2005: vii). The IPCC chose to conduct this review by hosting a series of workshops throughout the world, including Canada, France, Norway, Brazil, Australia and Spain (IPCC 2005: 285). The first workshop took place in Regina, Saskatchewan near the end of 2002 because of Canada's experience in injecting substances, such as sour gas underground (Massicotte, Ross & Thompson 2011: 326). During this

[30] This is one of ten projects throughout the world that this group has sponsored. Canada is a member of this group (Griffiths, Cobb & Marr-Loring 2005: 54).
[31] This practice, which is referred to as *enhanced oil recovery*, is expected to increase the quantity of oil that can be extracted by up to 60% (Marsden 2008: 231).
[32] Previous to this, the IPCC had written a brief report on CCS in the Working Group III's *2001 Third Assessment Report on Climate Change- Mitigation* paper. Rather than replicating this report, the IPCC decided there was enough literature on CCS to write a comprehensive special report (IPCC Working Group III 2002: 2).

workshop, participants were taken to the Weyburn-Midale plant to demonstrate the "success" of carbon dioxide injection (IPCC Working Group III 2002: 3). [33]

While the IPCC was conducting these workshops, the government of Alberta released their first climate change strategy, *Albertans and Climate Change: A Strategy for Managing Environmental and Economic Risks*. This climate change policy marked the first time the Alberta government explicitly mentioned CCS technologies as a potential element of their overall climate change strategy (Alberta Environment 2002: 23). Two years after this, the CSLF held a meeting to determine what barriers were preventing CCS from being implemented on a global level. The CSLF determined that, among other things, the lack of public support for CCS was a significant issue (Griffiths et al. 2005: 56). This spurred Natural Resources Canada and Environment Canada to develop public policies regarding CCS (Griffiths et al. 2005: 59), actively educate the public about the benefits of CCS[34] and fund companies who showed interest in participating in commercial demonstrations of CCS.[35] Around the same time the Canadian government released its *Climate Change Plan for Canada* in which they encouraged provinces to implement CCS by promising to help them with developing the transportation stage of CCS (Griffiths et al. 2005: 58). This all culminated in the IPCC's 2005 report *Carbon Capture and Storage*, which essentially promoted CCS as a valid technology for decreasing carbon dioxide. [36]

The growing support for CCS prompted the Canadian and Alberta governments to take their CCS policy from theory to reality by establishing the ecoEnergy Carbon Capture and Storage Taskforce in March 2007, which I discuss in more detail in the next section. In

[33] The success of this site is subject to debate as several concerned landowners and scientists have argued that this site is leaking toxic substances, such as arsenic, into the ground and well water (Marsden 2008: 231-2).
[34] See http://ccs101.ca/ for the government's efforts to educate the public about CCS.
[35] Natural Resources Canada has given $10.8 million to corporations in CCS funding (Griffiths et al. 2005: 59).
[36] The IPCC's concerns about CCS are noted at the end of this section.

response to this taskforce, the Canadian government released a series of documents, entitled *Turning the Corner*, which detailed their climate change strategy. According to these documents, all industries, the tar sands included, would be required to reduce their emissions by 18% of 2006 levels by 2020 and an additional 2% per the following year (Government of Canada 2008a: iii). The *Turning the Corner: Regulatory Framework for Industrial Greenhouse Gas Emissions* specifies that new facilities that are developed after 2018 must be built with CCS technologies and will be subject to more stringent targets for reducing their greenhouse gas emissions (Government of Canada 2008a: 3). The documents also state that the government will provide financial incentives for industries to adopt these technologies until 2018 (Government of Canada 2008a: 3).

Around the same time, the Alberta government released their energy strategy *Launching Alberta's Energy Future* and their updated *Climate Change Strategy*, which both outlined the government-approved methods for reducing greenhouse gas emissions. These measures included increasing their conservation of energy, investing and implementing CCS systems and "greening" energy production (Meadows & Crossman 2010: 428). In the energy strategy, the provincial government stated that CCS would be used to reduce 70% of its greenhouse gas emissions (Hsu & Elliot 2009: 468). Soon after these documents were released, in 2008, the Canadian and Alberta governments created a joint taskforce, the Carbon Capture and Storage Development Council (Massicotte et al. 2011: 313), which I discuss in more detail in the next section.

The idea of using CCS to address climate change has been heavily criticized. The IPCC (2005: 48), who generally supported the development of CCS, has pointed out that the technology for a fully integrated process of capturing, transporting, injecting and storing

carbon dioxide underground does not currently exist. They contend that even though the technology exists for many of the stages in this process, they have not been combined in a way that is amenable to the purpose of using CCS for large scale developments, such as the tar sands. The IPCC predicts that CCS technology will not be ready until 2030 and, even then, the cost of installing CCS may not be "economically feasible" because there is no universal technology that can be retrofitted to the wide range of factories, machineries, and industries. The IPCC (2005: 15) expressed concern over the potential for carbon dioxide to leak into the atmosphere but, at the same time, downplayed these concerns by saying that only 1% of the total amount injected over 1000 years would be likely to leak (14).

Nikiforuk (2009: 7) insists that, given the volume of tar sands production, it would only take that 1% to be leaked to undo all attempts thus far to reduce climate change. He argues that CCS is too risky, will produce more greenhouse gas emissions than it captures (6) and will not be implemented fast enough to help reduce greenhouse gas emissions (5). [37] Nikiforuk (2009: 26) also comments that there is no proof that CCS technologies actually work or that the carbon dioxide will stay underground once it is buried. Critics argue that we cannot predict what will happen if we store carbon dioxide underground (Suzuki 2007 as cited in White 2011: 18). This carbon dioxide could damage the plant roots, create ground heave, cause earthquakes, poison water and air supplies and/or cause explosions (Bankes et al. 2008: 629). Nikiforuk (2009: 28) worries that the regulations surrounding CCS are too unclear and that by supporting CCS we are actually maintaining our reliance on fossil fuels, rather than, as Sawyer (2008: ix) suggests, improving our energy efficiency and increasing our reliance on renewable energy, such as solar power.

[37] Members of Greenpeace take issue with CCS because it is expected to be up and running by 2030, which is 15 years after they contend that greenhouse gas emissions must begin decreasing in order to effectively combat climate change (as cited in Nikiforuk 2009: 5).

Empirical Data

This section justifies my focus on the two taskforce documents that form the basis of my analysis by detailing the characteristics of the reports and demonstrating the role that these taskforces have had in the Canadian and Alberta governments adopting CCS. The ecoEnergy Carbon Capture and Storage Taskforce was established by the federal and Alberta government in March 2007. Funded by Natural Resources Canada and Alberta Energy and organized by members of several oil corporations (e.g. TransAlta, Kinder Morgan, PetroCanada, Saskpower), this taskforce was created to evaluate how the government and energy industry could work together to implement CCS in Canada (Massicotte et al. 2011: 337). Less than a year after the taskforce was established, they released their final report in which they outlined the environmental, legal, technological, economic and public interest barriers that stood in the way of implementing CCS on a large scale and made recommendations on how to negate these barriers.

The taskforce made three recommendations that required immediate action: that the Canadian and Alberta governments commit $2 billion (of the taxpayers' money) to fund CCS demonstration projects; that the governments clarify CCS regulations (e.g. pore space ownership); and that the governments create a greenhouse gas emission framework that places CCS on even footing with other mitigation options. The taskforce also made three recommendations for the future, which require that: an advisory group of industry and government players be established to implement the three immediate actions; corporations receive financial incentives to implement CCS technologies; and Canadian research organizations be encouraged to research and develop CCS technologies.

The Carbon Capture and Storage Development Council was established in April 2008 in response to the ecoEnergy taskforce (Massicotte et al. 2011: 313). It was created to advise

the federal and Alberta governments on how to overcome the barriers that were reported by the ecoEnergy taskforce and, specifically, on how to implement CCS in the tar sands. This taskforce was mostly composed of oil corporations (e.g. Shell Canada, Syncrude, Suncor, TransAlta), but also included government agencies, such as Natural Resources Canada, academics and CCS organizations. This report, which was completed March 2009, recommended that: federal and provincial CCS policies be joined; more funding for demonstration projects be provided; universities be encouraged to research and develop CCS technologies; a forum for industry and government be created to discuss CCS; education regarding CCS be provided for the public; and capture technologies be developed to decrease the market price of carbon dioxide, among others.

These two reports are important because they represent the governments' main response to climate change in the tar sands. Additionally, as I detail below, these reports have resulted in important financial and legislative changes that could detrimentally affect the quality of life for Canadians and the health of the environment. After these reports were published, the Canadian and Alberta governments established a $2 billion fund to promote and encourage corporations to take an active interest in implementing CCS in their facilities (Meadows & Crossman 2010: 434).[38] Of particular note is Shell Canada's Quest project, which received $865 million to develop and implement CCS in their Scotsford Upgrader facility, located in Edmonton, Alberta (Abbott 2011, Jun. 24). This project represents one of the first commercial-scale CCS projects in the tar sands (Abbott 2011, Jun. 24) and is proposed to store 1.2 million tons of carbon dioxide per year (Collins 2011, Oct. 31). While the implementation of CCS is intended to combat greenhouse gas emissions associated with

[38] $495 million was also given to Enhanced Energy CO_2 Fertilizer for a pipeline, $285 to Swanhill Synfuels, and $436 to TransAlta ("Alberta Carbon Storage Safe" 2010, Mar. 12).

Shell's activities in the tar sands, Shell only agreed to install this technology after they signed a deal with the government that allowed them to expand their extraction of oil by 100,000 barrels per day (Abbott 2011, Jun. 24). Shell has received this funding, regulatory approval and a certificate of fitness for CO_2 storage (Collins 2011, Oct. 31) even though critics charge that the risks and capabilities of the Quest project are largely unknown. [39]

These two taskforce documents have also resulted in the Alberta government introducing the *CCS Statutes Amendment Act, 2010* (Bill 24), which amended several acts, including the *Energy Resource Conservation Act, Mines & Minerals Act, Oil & Gas Conservation Act, Public Lands Act* and *Surface Rights Act* (Massicotte et al. 2011: 308). [40] These amendments authorized the provincial government to become the sole owner of all pore space in Alberta (Legislative Assembly of Alberta 2010: 4) [41] and transferred liability from corporations who inject carbon dioxide underground to the provincial government. This makes the government responsible for any damage that the storage of carbon dioxide causes after corporations have officially sealed the ground and been issued their closure certificate (Legislative Assembly of Alberta 2010: 13). This section has outlined and justified the empirical data I analyze in Chapter 4.

Research Questions

The following research questions guide my analysis of the two taskforce documents:

[39] The certificate of fitness was issued by a risk assessment organization, DNV, who has never evaluated CCS projects before. The evaluation was conducted over a two week period by seven experts, who were mostly from oil corporations (Collin 2011, Oct. 31).
[40] Previous to this, the Energy Resource Conservation Board regulated CCS by relying on a mishmash of legislation (Legislative Assembly of Alberta 2012: 6).
[41] Pore space is the "empty" space beneath the land (Legislative Assembly of Alberta 2010: 4).

How is environmental harm conceptualized within the federal and provincial governments' CCS strategy?

Who are the dominant voices when it comes to defining environmental harm in the tar sands?

How do knowledge claims about CCS shape the state's response to environmental issues within the tar sands?

Critical Discourse Analysis

This section outlines my use of critical discourse analysis to examine the empirical data and answer the research questions for this study. Critical discourse analysis identifies the structural and organizational features of society that contribute to the existence of particular social problems, such as environmental harm (Fairclough, Graham, Lemke & Wodak 2004: 1). Fairclough et al. (2004: 2) contend that social problems are "problems of discourse", which means that the way a social problem is understood and treated by members of society is influenced by how it is represented through certain discourses. In general, a discourse is a representation or explanation of a social problem. As such, it is a "particular framework of ideas" (White 2002: 9) that details the causes of a problem, its characteristics and the possibilities or impossibilities for addressing this problem. Fairclough (1998: 324) explains that, "epistemologically, discourses are abstract entities established over time and in diverse social sites but ontologically they appear in concrete form of particular texts." This implies that through repetition certain abstract entities can become established in society as "common sense" and begin to influence our thoughts and actions.

Although these abstract entities do not objectively describe features of reality, Fairclough (1998: 321) uses the discourse of globalization to illustrate the different purposes of discourse. He explains that discourses can inform people about the actual operation and processes of globalization; mislead and obscure the characteristics and inner workings of globalization; be used strategically to represent globalization in a particular way that legitimates the actions of a certain social group or groups; generate beliefs about globalization that reproduce power relations that subordinate certain social groups in society while empowering others; or be used to represent how the world should be in order to shape the world in a way that adheres to this representation.

With this in mind, the purpose of my critical discourse analysis is twofold. The first is to expose and problematize how specific features of society reproduce the conditions necessary to maintain, rather than eliminate, a specific social issue (Fairclough et al. 2004: 1). The second purpose is to challenge dominant assumptions that society's current (capitalist) ordering is the only way that it can be organized (Fairclough 2001: 230). This involves exposing the unequal power relations that underlie society's organization and exploring alternative ways that social relations can be arranged (Fairclough et al. 2004: 1).

Jessop (2008: 51) explains that if we want to understand why certain discourses have become dominant and others ignored then we must explore the "material and discursive mechanisms" that allow certain discourses to be prioritized over others by focusing on the characteristics of certain conjunctures in history. By looking at how discourses are perpetuated in the face of a crisis where new discourses are being generated, we can see how dominant discourses win out at certain times and, therein, reproduce the social formation (Jessop 2008: 51).

There is no definitive procedure or set of rules to follow when conducting a critical discourse analysis (Fairclough 1992: 195). To focus my analysis, I used Roy Bhaskar's explanatory critique model, as outlined by Fairclough (2001). This model provided me with a framework for analyzing the empirical data and required me to address particular issues within each document that I analyzed. There are five steps to this model. The first step was to address "a social problem in its semiotic aspect" (Fairclough 2001: 236). This step required me to acknowledge that the problem of environmental harm in the tar sands is a problem of discourse. As such I explored how environmental harm was conceptualized in the tar sands by detailing the various knowledge claims surrounding environmental damage in the tar sands and by identifying the dominant discourses in the two taskforce documents.

The second step is to "identify obstacles to be tackled" (Fairclough 2001: 238). This step required me to identify the barriers that prevent environmental harm in the tar sands from being eliminated. In this instance, I drew from the corporate crime and green criminology literature as well as on my theoretical framework to understand the structural conditions that made this environmental harm possible in the first place. This process provided context for understanding the reasoning behind the federal and Alberta governments' decision to focus most of their energy on addressing climate change (and in a particular manner) rather than the other environmental harms in the tar sands. The third step was to ask myself "does the social order need the problem?" (Fairclough 2001: 238). This required me to explore how the government would benefit from not addressing the various environmental harms and by not implementing a climate change policy that would effectively constrain or stop tar sands companies from emitting greenhouse gases. The fourth stage was to explore "possible ways past the obstacles" (Fairclough 2001: 238). This

required me to rethink and re-conceptualize environmental harm by utilizing a much broader, more inclusive definition of environmental harm, a position that I develop in my theoretical framework. By relying on the social harm approach and deep ecology I explored the characteristics of alternative social orders and discourses that do not perpetuate environmental harm. The last stage was to "reflect on analysis" (Fairclough 2001: 239), whereby I reviewed my research process and findings to see if I reproduced or challenged the dominant discourses that contributed to the existence of environmental harm in the tar sands.

Overall, critical discourse analysis enabled me to examine how environmental degradation is conceptualized within the federal and provincial governments' CCS strategy, who the dominant and marginalized voices were in defining this degradation, what discourses were used to justify this conceptualization and if and how this conceptualization reinforced the current social order, as well as how alternative social orders could be sought to minimize environmental harm.

Data Analysis

After completing my review of the empirical and theoretical literature, through which I identified a several themes (such as anthropocentrism, capitalism, scientism) that were important for my research, I read the two taskforce documents. During this initial read I made comments in the margins of the documents regarding what the taskforce documents were claiming, how I interpreted these claims, any questions I had regarding the statements that they made, and any connection I made to the themes that I had uncovered in the literature.

I then read through the documents a second time and copied and pasted each sentence (or paragraph depending on the logic of the knowledge claim) and put them into general categories (e.g. economic/business, scientism, anthropocentrism, legal). If a sentence or paragraph was relevant to two categories then I positioned them accordingly. Any sentences that did not fit in these categories were put in a separate category called "Keep". To ensure reliability, I printed the documents I had created and cut out each sentence removing any indicator of what category I had classified it as. I then repeated the process noted above to ensure that there was consistency in the ways that I was categorizing the information.

Next, I went through each category separately to determine what the dominant or reoccurring knowledge claims were within each category. For example, within the economic category there were reoccurring knowledge claims that promoted a country's economic strength over the health of its environment. Following this, I went through each category and determined the ten most relevant or dominant sentences or passages that best reflected each knowledge claim. From here, I wrote a general summary of each knowledge claim and explored its connection to the issues and themes that I had identified from the green criminology and corporate crime literatures and in relation to my theoretical framework.

After writing an initial draft of my analysis chapter I decided that I needed to return to the literature to better understand its relationship to the categories I had constructed. Doing so helped me reframe the categories by, for example, removing the theme of anthropocentrism from my analysis, which in the end was not a prominent theme in the data despite its prominence within the green criminology literature. After completing several rough drafts of my analysis, I re-read the taskforce documents to determine if there were any

counter hegemonic discourses and/or contradictions within the main discourses that I had identified. I did this in an attempt to challenge my findings and ensure that they were valid.

This chapter detailed the various knowledge claims surrounding environmental harm in the tar sands and outlined the governments' decision to address climate change via CCS; the purpose of which was to provide context for my analysis chapter. This chapter also justified my empirical data, research questions and method.

Chapter 2: Literature Review

The purpose of this chapter is to situate my research within the corporate crime and green criminology literature. The chapter begins with a brief discussion of corporate crime's marginalization within the discipline of criminology and compares dominant perceptions of corporate crime versus "street crimes". The section that follows explores academic debates regarding the definition of corporate crime and identifies the perspective that I employ in this thesis. Following this, I examine the green criminology literature and justify the concept of environmental harm that informs my research. Finally, I discuss the criminogenic nature of the corporation and the social, economic and political factors that shape the regulation of environmental corporate crime with particular focus on the issues related to neoliberalism and globalization. This chapter concludes with a discussion of the main issues from the literature review that inform my research.

Corporate Crime

Historically, most criminologists have studied the actions and behaviours that have been labelled as criminal offences by the state, particularly street crimes, such as murder, theft and assault, which constitute the main focus of the criminal justice system (Box 1983: 1). Box (1983: iv) asserts that the focus on street crimes predominately captures the actions of the powerless and, as such, often ignores the harmful actions of the powerful (e.g. corporations). This is problematic, according to McMullan (1992: 9), given that criminologists have neglected to examine a significant portion of the serious harms that people experience in their lives. Corporate crime, for instance, has been marginalized within the discipline of criminology despite the fact that corporations have contributed to the death, injury and compromised health of millions of living beings, disrupted the normal functioning

of dozens of ecosystems, stolen trillions of dollars from consumers and governments and exacerbated the degree of inequality between social groups (Snider 1993: 192; Slapper & Tombs 1999: 6; White 2003: 484). Snider (1993: 17) argues that if we want to reduce the harms that corporations cause then we need to study corporate crime in order to understand the scope of the problem and how it should be addressed.

Corporate crime can be classified in terms of financial and social corporate crime (Snider 2000: 173). Financial corporate crime includes any illegal corporate practice that is directly related to the economy and victimizes shareholders, consumers, other corporations or the economy. Social corporate crime can be divided into workplace health and safety offences and environmental offences. A workplace health and safety offence includes any illegal practice that places a company's employees at risk for being seriously injured or killed, whereas, an environmental offence, which is the focus of this thesis, includes any illegal practice that compromises the well-being of the environment and/or living beings (Snider 2000: 172). The corporate crime literature, which I delve into in the next few sections, is crucial for my thesis because it helps in identifying the factors and discourses that enable the Canadian and Alberta governments to explain-away environmental harm in the tar sands, therein defining it as unnecessary to intervene through law.

Differentiating Corporate Crime

In general, the public and the state view corporate crime as being fundamentally different from criminal offences. While criminal offences are understood as *mala in se*, wrong because they are inherently immoral, corporate offences are understood as *mala prohibita*, wrong because they are against the law (Snider 2000: 184). Bittle (2012: 46)

contends that this distinction has important implications for how the state governs each type of offence. Criminal offences are constructed as objectively evil and, therefore, governed through the criminal law (Glasbeek 2002: 149), which is the strictest form of law with the harshest penalties (Reiman 2004: 6). As such, the criminal law is understood by most citizens to be reserved for the most dangerous and morally offensive behaviours (Glasbeek 2002: 149). By comparison, corporate offences are constructed as breaches of the law and are therefore often explained-away as accidents or as by-products of legitimate business practices (Slapper & Tombs 1999: 90). Accordingly, these offences are governed through regulatory and administrative laws, which are more lenient and have less severe punishments than the criminal law.

Although the criminal law appears to criminalize objectively the most harmful actions in society, critical corporate crime scholars, such as Pearce and Tombs (1998: 93), argue that this is not necessarily true. They maintain that if the criminal law was actually objective then it would classify every action that caused serious harm as a crime, including corporate offences, rather than classifying them as regulatory offences. Since it does not do this, Box (1983: 2) accuses the criminal law of being ideological given that it criminalizes the actions that threaten certain groups of people (i.e. those who have the economic and political power to define what is criminal) whilst obscuring the harmfulness of the actions that benefit these groups.

The criminal law excludes the harmful actions of the powerful through the template it has regarding what type of actions can be criminalized or not (Tombs & Whyte 2003: 9). The template for murder, for example, is considered an isolated event where an individual intentionally and directly kills another person (Box 1983: 9). This approach excludes deaths

that result from, for example, workplace health and safety offences since this offense often results from negligent behaviour, involves multiple people making decisions that compromise the safety of workers thereby increasing the chance of a fatality occurring, and the offender and victim rarely interact in any direct manner (Slapper & Tombs 1999: 56). The idea that harmful actions are ideologically divided into criminal and regulatory offenses is important for my thesis because it enables me to demonstrate that environmental harm in the tar sands is a serious issue even though it is not criminalized. It is also important because it allows me to ask questions regarding who benefits from the non-criminalization of environmental harms in the tar sands.

Defining Corporate Crime

Edwin Sutherland's (1949) pioneering book, *White Collar Crime*, problematized the fact that powerful people are rarely held accountable for their illegal actions (Slapper & Tombs 1999: 3).[42] Sutherland analyzed the regulatory violations of 70 well-established corporations and discovered that approximately 98% of these corporations were repeat offenders, having committed more than one offence, and 90% of these repeat offenders were habitual, having committed more than four offences (McMullan 1992: 53). Despite the multitude of offences that these corporations committed, Sutherland (1983: 44) found that they only received small, non-criminal (e.g. civil) fines for their transgressions. To bring attention to this issue Sutherland coined the term "white collar crime", which he defines as "a crime committed by a person of respectability and high social status in the course of his occupation" (Sutherland 1949 as cited in Sutherland 1983: 7).

[42] Slapper and Tombs (1999: 2) note that in the 1930s Bonger examined upper-world criminals and previous to this Marx had discussed the crimes of factory owners.

Sutherland's (1949) study has been celebrated for challenging the dominant assumption of what constitutes a crime and for raising academic interest in exploring the harmful behaviours of powerful individuals and corporations. Despite this contribution, his work has been criticized by several academics. For instance, Tappan (1947) problematized Sutherland's definition for straying too far from the accepted legal definition of what constitutes a crime (as cited in Pearce & Tombs 1998: 104). He warned that moving away from the criminal law's definition of crime would lead to an endless debate about whose morals are the most appropriate for classifying actions as crimes (Tappan 1947 as cited in Slapper & Tombs 1999: 4). From Tappan's perspective, the criminal justice system objectively criminalizes the most harmful actions (Slapper & Tombs 1999: 5).

Sutherland's definition of white collar crime has also been criticized for relying on differential association theory to explain why white collar crime occurs.[43] Croall (2001: 93) points out that Sutherland failed to identify where the criminal values related to corporate offending come from, thereby missing a crucial part of this theory. Along the same lines, Pearce and Tombs (1998: 67) take issue with Sutherland's focus on individual traits[44] since it "leads to characterizing certain forms of criminality in terms of status, trust and, respectability." According to the authors, this obscures the features of society, such as capitalistic values, that allow corporate crime to occur in the first place. Sutherland's definition has also been accused of anthropomorphizing the corporation by attributing the actions of its members to the corporation as if it were a human being (Bittle 2012: 44). By anthropomorphizing the corporation, Sutherland suggests that the corporation is a

[43] Sutherland (1983: 240) used this theory to describe crime as the result of an individual being exposed to a number of values that favoured criminal behaviour over conformity.
[44] Slapper and Tombs (1999: 14) explain that while Sutherland's theoretical focus was on individuals within the corporation his empirical focus was actually on the corporation as a whole.

homogenous entity and, therefore, fails to account for the complicated relationships among employees, between employees and management and between owners and managers that contribute to corporate crime (Pearce & Tombs 1998: 109).

Steven Box sought to overcome the issues with Sutherland's definition by taking a structural approach to conceptualizing corporate crime. Accordingly, Box (1983: 20-2) defined corporate crime as

> Illegal acts of omission or commission of an individual or group of individuals in a legitimate formal organization in accordance with the operative goals of the organization, which have serious physical or economic impact on employees, consumers or the general public and other organizations.[45]

Box recognized the ideological distinction between the criminal and regulatory realm and, as such, chose to move beyond the state's narrow concept of crime (McMullan 1992: 22). Box's structural focus shifted attention away from explaining corporate crime in terms of individual actions, as Sutherland did, to more structural factors, such as capitalism, that shape and normalize harmful corporate practices (McMullan 1992: 22). Box effectively attributed the occurrence of corporate crime to the unintentional acts that cause harm (commission) and to the failure to prevent these acts (omission) (McMullan 1992: 22). This approach allowed him to broaden his focus beyond the individual who works directly with harmful substances (e.g. toxic chemicals) or directly in the harmful area (e.g. factory), to include high level employees, such as the corporation's board of directors or its CEOs, who are responsible for developing corporate policies and practices that contribute to corporate harm (Slapper and Tombs 1999: 14). McMullan (1992: 22) maintains that this helps

[45] This definition is an amended version of Schrager & Short's (1977) concept of organizational crime (Box 1983: 20).

emphasize that the decisions of individual members of the corporation are shaped in large part by the overarching goals of the corporation. Accordingly, if a corporation's goal is to maximize profits, for example, this may encourage a general acceptance that profits are more important than the health and safety of employees or the quality of the environment, therein promoting lax safety precautions or environmental safeguards (Croall 2001: 85).

In their study of the chemical industry, Pearce and Tombs (1998: 107-10) build on Box's definition to conceptualize corporate crime as

> Illegal acts or omissions, punishable by the state under administrative, civil or criminal law, which are the result of the deliberate decision making or culpable negligence within a legitimate formal organization. These acts or omissions are based in legitimate, formal business organizations, made in accordance with the normative goals, standard operating procedures, and/or cultural norms of the organization and are intended to benefit the corporation itself.

This definition maintains Box's structural focus and encourages us to explore why certain acts are or are not dealt with through the criminal law (Bittle 2012: 44). This definition will guide my research by enabling me to bypass state-defined concepts of environmental harm in order to examine the structural features of society (i.e. neoliberalism) that perpetuate environmental harm in the tar sands. In particular, it will allow me to explore how environmental harm in the tar sands has been explained-away to the point that legal intervention is deemed unnecessary.

Green Criminology

The study of environmental crime, much like that of corporate crime, has been marginalized within the discipline of criminology. Even though the first environmental

movement occurred in the late 1960s,[46] drawing international attention to the fragile state of the natural environment and the role that humans play in its degradation, it was not until the 1990s with the advent of green criminology[47] that criminologists began to address environmental issues in a "concerted way" (Boyd et al. 2002: 8). Ruggiero and South (2013: 5) credit criminology's slow reaction to the fact that it is largely an anthropocentric discipline that prioritizes the study of crimes against humans over that of crimes against non-human living beings and the natural environment. Higgins, Short and South (2013: 251) contend that this slow reaction can also be attributed to criminology's general struggle over addressing non-criminal harms given that the "intergenerational consequences and transnational impacts" of environmentally destructive practices have only recently been deemed as a serious harm by the public and state.

Green criminology is centred on protecting the environment by exposing the "harmful and illegal acts that unnecessarily threaten and damage the natural environment" (Walters 2010: 186). Since its advent, green criminology has expanded beyond its critical roots to include a series of disparate perspectives whose only commonality is a focus on environmental issues (White 2008: 4). While each perspective has its merits, I will draw specifically from critical green criminology because it allows me to explore "how the criminogenic or toxic nature of capitalism enables states and corporations to facilitate and perpetrate environmental harms with virtual impunity" (Boyd et al. 2002: 12). This echoes my focus on the structural features of society that make corporate crime possible and adheres

[46] Rachel Carson's (1962) book *Silent Spring* has been credited with spurring the 1960s environmental movement. In this book, Carson describes the catastrophic consequences that toxic pesticides and herbicides have for humankind and for the natural environment (Suzuki & Dressel 1999: 258).
[47] Since the coining of this term, there have been several alternative terms suggested to encapsulate a criminological focus on environmental issues. These include environmental crime (White 2008), conservation crime (Gibbs, Gore, McGarrell & Rivers 2010), eco-criminology (White 2010), eco-crime (Walters 2010) and transnational environmental harm (White 2011). To avoid confusion I only use the term green criminology.

to the definition of corporate crime, as outlined in the last section, which will guide my research.

Defining Environmental Crime

Rob White (2003: 484-5) charges that while there are many ways to define environmental crime, each definition carries with it different implications regarding which environmentally destructive practices can be classified as illegal and therefore subject to state intervention, as well as which practices can be classified as legitimate and therefore not subject to such intervention. The majority of the green criminology literature surrounding definitions of environmental crime is centred on differentiating between legal definitions, where the state determines which actions should be criminalized and socio-legal definitions, in which the concept of crime goes beyond state definitions.[48] Although the distinction between legal and socio-legal definitions is important, White (2003: 486) insists that the process of defining environmental crime is more intricate than this. White (2003: 486) contends that,

> Whether at the level of definition or redress, then, discussions of environmental harm have an onion-like character. There are layers of complexity to unpeel, and important ideological differences that emerge over whether the core of the system is worth preserving or beyond redemption.

One of these layers involves the differing philosophies that characterize the relationship between humans and the natural environment (Halsey & White 1998: 347). According to White (2003: 484-5), this layer is significant because the way that the human-environment relationship is conceptualized will shape how humans interact with the environment by

[48] I discussed this debate in the last section. I have adopted a socio-legal concept of environmental crime as this adheres with the definition of corporate crime that guides my research.

setting parameters on what human-caused environmental damage is accepted as legitimate. White identifies environmental and ecological justice as this layer's main perspectives. [49]

Under the environmental justice perspective, harm is conceptualized in terms of the negative impact that environmental destruction has on the health and well-being of humans. In particular, proponents of this perspective problematize environmentally destructive practices that disproportionately affect certain social groups and/or create unequal access to natural resources (Walters 2010: 187). The purpose of this perspective is to "eliminat[e] privilege and exploitation connected with peoples' health and the production or use of society's resources" (Hofritcher 2002: 4). Hofritcher (2002: 4) asserts that environmental issues are intricately tied to other social justice issues, such as racism, in that people from "minority groups" are often forced out of economic necessity to work jobs that are inherently dangerous (e.g. involve dealing with toxic chemicals) and/or live near factories that expose them to increased levels of air, land and water pollution. For instance, Bullard's (2002: 30) study on toxic waste facilities in California reveals that the majority of hazardous facilities in the state are located in poor and minority communities, a situation he refers to as environmental racism (Bullard 2002: 25).

McDowell (2013: 407) expands on the concept of environmental racism in her study on landfills in the African American community of Mobile, arguing that "by attempting to subject the community in Mobile to another environmental hazard [a fourth landfill], state-corporate officials were preserving and privileging the opportunity for *extended life* [original emphasis] for outlying Phoenix's middle and upper-class residents." She explains that the government chose to site a fourth landfill in Mobile rather than Philadelphia because they

[49] These perspectives are not mutually exclusive.

assumed that Mobile residents possessed less economic and political power to resist it (McDowell 2013: 407). Brook's (2009: 392-3) study on toxic waste facilities on Native American land questions the inherent power imbalance between powerful corporations and governments who want to build dangerous facilities and Native Americans who historically have had a low socio-economic standing, limited sources of income, and access to large tracts of land. Brook (2009: 394) argues that this power imbalance limits their ability to say no to these facilities and allows the state and corporations to legitimately externalize the rest of society's waste onto an area inhabited by Native Americans.

While the environmental justice perspective has been adopted by several green criminologists, other green criminologists have criticized this perspective for prioritizing human harms over non-human harms. Critics of this perspective propose that an ecological justice perspective dispels this prioritization by expanding the definition of environmental harm to include practices that harm any living being (e.g. animal, flora, plant life), individual elements of nature (e.g. air, water and land) and whole ecosystems (Lynch & Stretesky 2011: 294). This perspective is premised on the belief that all living beings are equal and, therefore, should be free from enduring unnecessary harm (Walters 2010: 188).

A large portion of the ecological justice perspective is centred on exposing and problematizing practices related to speciesism. [50] Sollund (2008: 4) explains that speciesism privileges the needs of one species, humans in this case, over the needs of all other species. Beirne's (2009: 55) study of animal rights concludes that the suffering, injury and death of animals are only classified as a crime if it negatively affects humans. He argues that animals are often treated as the property of humans and, therefore, the death and injury of animals are

[50] Although an ecological justice perspective encapsulates harms to the natural environment and all living beings, in practice supporters of this perspective typically focus on harms against animals.

typically only classified as a crime if they are "owned" by someone. Cazaux (1999: 114, 118) alleges that concepts of environmental crime preclude practices that benefit humans, but harm animals, such as using animals to test the safeness of drugs.

For the purpose of this thesis, I draw on both the environmental and ecological justice perspectives. The environmental justice perspective allows me to expose the tar sands' disproportionate impact on First Nations groups and examine how the Canadian and Alberta governments have downplayed this harm. The ecological justice perspective allows me to comprehend the range of environmental harms in the tar sands' with which I can contrast the federal and Alberta governments' concept of environmental harm.

The Criminogenic Corporation

Several critical corporate crime scholars have examined the role of the corporate structure in facilitating harmful and illegal corporate practices (McMullan 1992; Snider 1993; Pearce & Tombs 1998; Bittle 2012). These scholars argue that this structure, which is in large part shaped by the corporation's central goal of profit maximization, and enabled by the legal protections afforded to the limited liability corporation, has rendered this form of organization criminogenic (Slapper & Tombs 1999: 173). Glasbeek (2002: 130) explains that

> Corporations, by their very nature, without any malice towards a particular victim, will engage in criminal behaviour. They will do so because there are no strong internal disincentives for them to do otherwise; while, at the same time, their single-minded goal- profit maximization - which is also the driving motivation of the irresponsible shareholders, makes it rational for them to do so.

The goal of profit maximization acts as the foundation on which all aspects of corporate life are built - from the standard operating procedures right down to the individual decisions of

workers (McMullan 1992: 55). Box (1983: 33-4) explains that the pressure to compete with other corporations and accumulate profits[51] encourages corporations to try to control as much of their operating environment as possible. Given the considerable uncertainty that exists in this operating environment (e.g. the potential for state implementation of new laws or stronger enforcement of existing laws, changes in consumer demand, and the development of superior products by their competitors), corporations often try to minimize their costs by breaching regulations or engaging in illegal activities, such as dumping toxic chemicals (Pearce & Tombs 1998: 233). McMullan (1992: 63) contends that these practices are "normal" within the context of the corporation and, therefore, not typically questioned by corporate actors or deemed to be illegal by the state.

Pearce and Tombs (2012: 15), in their analysis of the 1984 Bhopal gas explosion that instantly claimed the lives of 7000 people and subsequently took 15,000 more, found that corporations often engage in cost-benefit analysis to determine if it is "beneficial" to participate in illegal activities. These scholars recount the number of ways that Union Carbide[52] tried to limit their operating costs (e.g. by turning off important safety equipment) and conclude that Union Carbide's focus on profit maximization made it "logical" for them to cut costs and, in turn, endanger the lives of local residents and employees (Pearce & Tombs 2012: 53).

The corporation's criminogenic structure is made possible by the legal protections of limited liability. Glasbeek (2002: 7) contends that the law facilitates corporate activity by making it easy to create a corporation, expand it, change its name or merge it with other corporations. In addition, the law constructs the corporation as a legal person by treating it as

[51] These values are informed by capitalism.
[52] Union Carbide is the parent corporation of the company that owned and ran the Bhopal factory.

a private individual rather than an organization composed of independent people. As a legal person the corporation is entitled to the same rights and responsibilities as a natural person (Banerjee 2007: 45). Accordingly, a corporation could, for example, own and sell property, sue and be sued, cause harm or be harmed as well as possess the right to privacy and free speech (Glasbeek 2002: 8). Banerjee (2007: 46) argues that "the conflation of the corporation with an individual citizen obscures the gaps between individual citizens' rights and corporate rights and consequently deflects attention away from the need for regulations to reduce these gaps." As such, this construction fails to acknowledge that a corporation possesses significantly more economic and political power than a natural person, which they often use to shape what its "responsibilities" are as a citizen and how these responsibility are enforced (Banerjee 2007: 46).

The limited liability corporation is especially problematic given that it allows an unlimited amount of people, who have no connection or responsibility to each other, to invest in a corporation (Glasbeek 2002: 10). When a person invests their money in a corporation, he/she becomes a shareholder in the company and the corporation becomes the owner of that money. Pearce and Tombs (1998: 111) explain that this process removes the shareholder's responsibility for any of the harm or damage that the corporation causes. Accordingly, if the corporation is shut down, charged with a crime or fined the shareholder only loses their original investment and their personal resources remain untouched. The limited liability corporation also protects the director of a company from being held responsible because it legally binds the director to address the shareholders' needs (i.e. make them money) and, therefore, constructs the director as acting on behalf of the corporation, rather than on their own behalf. Pearce and Tombs (1998: 111) suggest that these protections

make the corporation a "site of irresponsibility" because the shareholders and directors benefit from harmful corporate practices that increase profits, and, therefore, are not motivated to take the necessary steps to prevent these harmful practices.

Spencer (2004: 5) contends that the dominance of corporations in society has led to a general acceptance that the corporate structure and legal protections are normal or even necessary. Snider (1993: 22), who traces the rise of the limited liability corporation, disputes this common sense belief. She comments that before the 17th Century, the dominant business models were single proprietorship, which were funded and owned by one person, and partnerships, which were commonly funded and owned by two people. The growth of a company utilizing either of these business models was limited by the personal resources of its owners. This limit created a problem for the state because in order to develop society's infrastructure, by creating railroads for example, they needed companies that had considerable resources and capital (Snider 1993: 22). In response to this need, the corporate business model slowly emerged in the 17th Century.

At this time, incorporation was a privilege that was granted by the state in order to prompt the creation of new business opportunities and further society's development (Snider 1993: 22). In order to incorporate, a business owner would be required to apply for and obtain a corporate charter from the government (Bittle 2012: 17). The conditions for the charter were determined by the state and the state set limits on how long the corporation could exist and the type of practices that the company could engage in (Banerjee 2007: 7-8). Because a corporation in this period existed to further society's development its charter could be revoked if it acted against the public interest (Banerjee 2007: 8).

Over time, several religious and political groups began to criticize the state's practice of selectively granting corporate charters arguing that it was unfair that only certain people could start a corporation (Pearce & Tombs 1998: 88-9). By the mid-18th Century, this criticism grew prevalent enough to challenge the legitimacy of the state's practice, which resulted in the state offering corporate charters to anyone who had enough resources (Pearce & Tombs 1998: 89).[53] This allowed corporations to be established more readily and created competition amongst corporations for state contracts. This competition prompted the state to sell their contracts to the highest bidder and encouraged corporations to be seen in terms of their economic benefits (Snider 1993: 22).

During the 19th Century, the economy began to expand so rapidly that more corporations needed to be created (Bittle 2012: 18). People at this time were reluctant to invest in corporations since investors could be held personally responsible for any harm or debt incurred by the company (Bittle 2012: 17). In order to sustain the economy's growth, the state decided to limit investors' responsibility by creating the limited liability corporation (Bittle 2012: 18). Bittle (2012: 18) explains that this type of corporation was economically beneficial for market capitalism as it encouraged people to invest in multiple companies, thereby strengthening the economy.

Glasbeek (2002: 267) argues that the corporation has been created to be criminogenic through its corporate structure and legal protections - a reality that means we can decide to hold corporations and their shareholders responsible for their crimes. This is important for my thesis because it allows me to look beyond arguments related to corporate harm being inevitable and unpreventable to see these crimes as the product of political decisions that

[53] This process was gradual and was not codified until the end of the 19th Century (Snider 1993: 22).

favoured the interests of powerful groups; namely the limited liability corporation that has the legal mandate to maximize profits over all considerations (Glasbeek 2002).

Regulating Corporate Crime

The corporate crime and green criminology literatures that address the regulation of corporate crime are diverse. This literature attributes the inadequate regulation of corporate crime to jurisdictional issues (White 2011), lack of regulatory resources (Schrecker 1984), the power of corporations to evade detection and shape the laws that regulate them (Snider 2000), the cost of convicting corporate offenders (Webb 1988), and the tendency of regulators to use compliance-based techniques (Bittle 2012). Girard, Snider and Day (2010) argue that environmental regulations are often only implemented in the face of public outrage and demands for change after the occurrence of a highly publicized environmental "disaster". Overall, however, Snider (1990) contends these regulations typically do not address the social, economic or political factors that contribute to corporate crime. In the next two sections I explore the themes of neoliberalism and globalization that emerge from the critical literature regarding the regulation and control of corporate crime.

Neoliberalism

While there is little agreement on what constitutes neoliberalism, Amable (2011: 7) contends that it can be characterized as "the set of discourses, practices and devices which determine a new mode of governance according to the general principle of competition." Often referred to by proponents as "the inevitable next step in the evolution of capitalism,"

neoliberalism currently constitutes our society's dominant economic and political structure (Ruggiero 2013: 268). [54]

The starting point for neoliberalism is the belief that the economy is the most important feature of society (Glasbeek 2002: 15). This belief dictates that all aspects of social and political life be oriented towards facilitating economic growth (Seis 2001: 134). Advocates of neoliberalism posit that the strength of a country's economy will determine the level of happiness and well-being for its citizens (Ruggiero 2013: 268). This happiness and well-being, referred to as standard of living, is most commonly measured in terms of the access a person has to social resources, such as education and hospital services, but also (and increasingly) the quantity of material goods, such as electronics, cars and designer clothes (Ruggiero 2013: 268). Continuous economic growth is seen as essential to maintaining and increasing a country's standard of living (Pearce & Tombs 1998: 15).

Within this context, corporations are revered because of their ability to generate revenue as well as produce the material goods that people rely on to maintain their standard of living (Glasbeek 2002: 15). In order for corporations to continue contributing to society they must remain competitive by maximizing their profits and minimizing costs (Glasbeek 2002: 17). Advocates of neoliberalism argue that these costs should be externalized onto society since they are the unpreventable consequence of economic growth that, after all, benefits everyone (Pearce & Tombs 1998: 30).

Accordingly, state regulations governing corporate activities are thought to create an unnecessary financial burden on corporations by restricting their profit-making opportunities (Pearce & Tombs 1998: 15). From this perspective, the harm that results from continuous

[54] The specifics of this structure are shaped by a society's historical, cultural and political characteristics.

economic growth (i.e. environmental damage) is unproblematic given that the market is capable of self-regulating (Ruggiero 2013: 268). Proponents of neoliberalism argue that the market has a built in demand and supply mechanism to dissuade corporations from causing harm (Grabosky 1994: 427). Grabosky (1994: 427) explains that, in terms of environmental harm, if consumers demand environmentally friendly products and business practices, then they will choose a product or support a business that has this quality over one that harms the environment. If the demand is strong enough then a corporation whose product or business degrades the environment will suffer a decline in profits. Theoretically, this demand and supply relationship keeps corporations in check by encouraging them to change their products and practices to suit consumer needs.

State regulations are also seen as unnecessary under neoliberalism because corporations are understood as being socially responsible (Spencer 2004: 15). Banerjee (2007: 48) explains that corporate social responsibility encourages corporations to conduct themselves in an ethical and transparent way, to consider the environmental and social effects of their business practices and to be an active citizen in their community. This ties "good citizenship" to a corporation's financial success (Banerjee 2007: 48) and is seen as a win-win in that corporations can help society and the environment while increasing their own profitability (Spencer 2004: 16).

In the face of criticism regarding the environmental impact of corporate activity, neoliberal proponents often invoke the term "sustainable development". Sustainable development is the notion that corporations can continue to use natural resources as long as they do so in a manner that is responsible and ensures that they do not cause too much destruction or use too many resources that will subsequently compromise the health and

survival of future generations (Banerjee 2007: 70). This approach is deemed to be the best way to "balance" economic and environmental concerns.

Pearce and Tombs (1998: 34) argue that neoliberal discourses "obscure more than they reveal" in that they ignore the fact that peoples' quality of life – their health, happiness and well-being – is actually compromised by the very economic activity that is purported to improve their lives (Ruggiero 2013: 268). These compromises come in the form of unsafe working conditions, poverty, loss in quality of the natural environment, and quantity of natural resources (Pearce & Tombs 1998: 30). What is more, the standard of living that neoliberal discourses promise is in fact only enjoyed by the shareholders of corporations and powerful members of society. These groups are often enriched by these practices, while the rest of society, particularly marginalized groups, is forced to pay the consequences (Pearce & Tombs 1998: 30). By suggesting that corporate activities produce benefits for society, neoliberal discourse legitimates harmful corporate activity.

The idea that markets can self-regulate to ensure that corporations do not cause harm presents an oversimplified image of the demand and supply relationship. It fails to take into account that consumers' demands are often not based on homogenous or universal values (Glasbeek 2002: 23). It also fails to acknowledge the hegemonic power that corporations possess in terms of controlling the market and obscuring the harm that they cause (Glasbeek 2002: 24). In this case, customers often do not possess enough information or power to ensure that their demands are met, leaving many corporations to continue their harmful practices without fear of reduced profitability.

The notion of corporate socially responsible ignores the fact that corporations are legally bound to make profits for their shareholders (Spencer 2004: 15). As such, corporations are typically not motivated to address social or environmental issues unless it in some way furthers their profitability or they are required to do so by properly worded and adequately enforced laws (Spencer 2004: 16). In appearing to be socially responsible, corporations can gain the trust and respect of the public, government and regulators, thereby influencing a reduction in the "regulatory burden" that restricts them from maximizing their profits (Spencer 2004: 17).

Sustainable development, which is premised on the belief that economic expansion is both necessary and desirable, fails to acknowledge that this continuous economic growth is contingent on a limited supply of natural resources (Ruggiero 2013: 269). Economic growth dictates that more and more material goods must be produced, which means that more and more natural resources need to be harvested to make these products. This growth outstrips the natural environment's ability to reproduce its natural resources (e.g. trees, nutrient-rich soil, fresh water) (Ruggiero 2013: 269). In addition, the factories, chemicals and processes used to make these resources into products and services pollute and damage the environment. As such, neoliberal discourses of sustainable development obscure the fact that the growth of the economy is inversely related to environment's ability to reproduce its natural resources and, therefore, sustain itself (Ruggerio 2013: 269).

This section is relevant to my thesis because it directs me to look past the façade that neoliberal proponents present to see the damage corporate activities cause and how it is justified in the context of neoliberalism. This provides me with the tools necessary to examine if and how the Canadian and Alberta government use this discourse to inform their

concept of environmental harm in the tar sands and to justify their support for CCS strategies.

Globalization

Globalization refers to the general movement of the social, economic and political features of society in a global context (Seis 2001: 124). Proponents of globalization assume that the whole world is a giant community and that nations are interdependent. According to Friedrichs and Friedrichs (2009: 133) globalization's main purpose is to spread neoliberal discourse so that it is adopted throughout the world and prompts economic integration amongst all nations. Hessing (2002: 29) comments that the success of globalization can be measured according to the increasing power of international financial institutions, such as the World Bank, the modernization of "developing" countries, the growth of the world's economy and increases in each country's gross domestic product.

Advocates of globalization posit that countries must address corporate harms by considering the effect it could have on their ability to compete in the world market (Seis 2001: 134) and, relatedly, on the health of their trade relations (Hessing 2002: 26). In terms of corporate crime regulations, these proponents argue that these regulations should be consistent across the world (Hessing 2002: 40). They argue that if a country were to implement strong regulations when the rest of the world has low regulations then it may negatively impact trade relations by raising the standards for corporate practices in that country (Seis 2001: 129). These high standards, as logic follows, would deny the opportunity for countries with lower regulations to export their products or set up businesses in that country (Seis 2001: 129). This would negatively affect their trade relations among these two

countries and, in turn, significantly impact the world's economy (Seis 2001: 129). Proponents of globalization warn that this could also work the opposite way in the sense that trade relations could be negatively impacted by a country having lower regulations or addressing corporate crime differently than the rest of the world.

Within this context, proponents of globalization contend that it no longer makes sense to regulate transnational corporations who simultaneously operate in several countries as these corporations are no longer accountable to nation states (Hessing 2002: 40). Because corporations can now, in principle, operate in whichever country they choose, deregulation is seen as the most effect way to attract transnational corporations to begin or maintain their business in a particular country. From this perspective regulations, once again, create an unwanted economic burden for corporations (Snider 1993: 7).

Globalization proponents fail to acknowledge that this prioritization of trade relations excuses a country's government from trying to protect their citizens or environment from corporations by encouraging them to reduce their regulations to keep corporations in their country (Seis 2001: 130). This, in turn, encourages cross-deregulation where countries pressure each other to lower their regulations so that they can increase the quantity of exports they can send to other countries (Seis 2001: 130). This is often referred to as a "race to the bottom" in that countries keep reducing their regulations to compete with other countries for the attention and support of transnational corporations (Seis 2001: 133). This makes the state look weak and unable to address corporate harm, which is problematic given that the state possesses the power, as demonstrated in the past, to put limits on corporate practices (Amable 2011: 11).

Amable (2011: 11) sees deregulation not in terms of a weakening of state power but, rather, as a changing of the state's regulatory focus. Deregulation is a combination of reducing the overall amount of regulations governing corporate behaviour while, at the same time, strengthening or creating new regulations to govern corporate behaviour in pro-business ways (Amable 2011: 11). Deregulation essentially alters state priorities to align with corporate rather than public interests (Bakan 2004 as cited in Banerjee 2007: 48). In this sense the notion of deregulation directs me to explore if and how the Canadian and Alberta governments adopt this position in their development of environmental "protections" in relation to the tar sands.

Reflecting on the Literature

This chapter revealed that the dominant concepts of corporate crime and environmental harm help justify and reproduce the harmful practices of the powerful by obscuring the nature and extent to which these harms result from private enterprise. This, in addition to the social, economic and political features of society, such as the legal construction of the corporation, the construction of the human-environment relationship, neoliberalism, and globalization, shape the state's ability to regulate corporate harm and the public's power to demand change.

Chapter 3: Theoretical Framework

This chapter further explores the theoretical issues that emerged in the literature review and situates them within the theoretical framework that guides my analysis. This framework draws from Gramsci's concepts of hegemony and passive revolution as well as from social harm and deep ecology perspectives. The chapter begins by explaining Gramsci's concept of hegemony in terms of how the ruling class reproduces the current social order. It then describes the related concept of passive revolution where the ruling class' hegemony is challenged to the extent that they must react to the threat in order to re-establish the dominant social order. Next, I delve into social harm's criticisms of the state's narrow concept of harm and highlight the value of a broader concept for understanding environmental issues. The chapter then outlines deep ecology's criticisms of the dominant understanding of the human-environment relationship. The chapter concludes by drawing together these theories to form a unique perspective on environmental harm that I use in the next chapter to identify and critique the discourses that the federal and Alberta governments use to downplay environmental harm in the tar sands.

Hegemony

In the literature review we saw that members of society often support state and corporate activities related to profit maximization and economic expansion even though these activities contribute to social polarization, human health problems and environmental degradation (Ruggiero 2013: 269). These activities are supported because "common sense" dictates that the stronger a country's economy is and the more money people have, the better their lives will be (Ruggiero 2013: 268). This contradiction of people supporting something that is against their own interests is best captured in Antonio Gramsci's notion of hegemony.

The starting point for hegemony is that society is composed of a "complex, contradictory and discordant ensemble of social relations of production" (Pearce & Tombs 1998: 35). Referred to as a "bloc", this structure organizes social relations in a particular way that benefits a specific faction of this bloc (Pearce & Tombs 1998: 35). [55] Because society is organized in ways that benefits the few, the dominant faction must struggle to "convince" the majority of society to agree to and contribute to this social ordering so that it can be reproduced (Pearce & Tombs 1998: 36).

The dominant faction may do this through the use of force or hegemonic means (Pearce & Tombs 1998: 36). If the dominant faction uses force then it risks subordinate groups becoming aware of their own subordination. This awareness may provoke groups to challenge the current social order which, if successful, could result in the dominant faction losing power (Pearce & Tombs 1998: 36). Hegemony, on the other hand, involves "the entire complex of practices and theoretical activities within which the ruling class not only justifies and maintains its dominance, but manages to win the active consent over those who it rules" (Gramsci 1971 as cited in Pearce & Tombs 1998: 36). Accordingly, if the dominant faction successfully gains the active consent of subordinate groups then it minimizes the likelihood that these groups will become aware of their own subordination and try to overthrow the current social order.

Pearce and Tombs (1998: 36) comment that this active consent means that "[the dominant faction's] ideas, understanding of the world and specification of historical possibilities become general common sense so subordinate classes will, to a considerable

[55] This is not a linear process since there are competing interests among and within each social group in a given bloc (Pearce & Tombs 1998: 35). The dominant faction also does not have complete control over the reproduction of the current social order. As Pearce and Tombs (1998: 39) explain, the most the faction can do is alter the current social order by slightly increasing the privileges that they possess.

extent, formulate their interests within the categories of dominant ideology." Common sense acts as the foundation on which people understand and interact with the world (Pearce & Tombs 1998: 36) so by infusing this with the dominant faction's interests, it places barriers on what kind of questions can be asked and what kind of changes can be made, thereby ensuring that the current social order is reproduced (Pearce & Tombs 1998: 36).

The concept of hegemony enables me to ask why and how environmental harm in the tar sands continues without proper legal intervention despite the concerns of several social groups. It does so by allowing me to question how the current social order perpetuates the conditions for environmentally harmful practices to continue as well as which social groups benefit and which suffer from obscuring the tar sands' harms. The concept of hegemony specifically allows me to explore what discourses the federal and Alberta governments rely on to conceptualize this type of harm as not worthy of control via law.

Passive Revolution

In the literature review we saw that certain environmental disasters and workplace health and safety accidents garner so much media attention and public outrage that the state is pushed to implement new and/or strengthen existing corporate crime laws (Girard et al. 2010: 222). In this process, the state must face its contradictory responsibilities to protect its citizens and promote economic growth (Girard et al. 2010: 222). The implementation of these corporate crime regulations placate the public by addressing their concerns, but are typically ineffective at mitigating the harmful activities of corporations because they are written and enforced in ways that allow corporations to continue prioritizing profits over the

health and safety of humans and the environment (Girard et al. 2010: 222). This conflict of interest can be explained through the concept of passive revolution.

The concept of passive revolution is premised on the idea that the state must represent or appear to represent the interest of all social groups in order to maintain its legitimacy as a fair and democratic ruler (Pearce & Tombs 1998: 36). As such, the state cannot blatantly operate in accordance with the interests of any one group, such as the dominant class. Mahon (1979: 170) maintains that the state must address the conflicting concerns of multiple social groups, which makes it a site of conflict. The state addresses these concerns by continuously combining and recombining these interests in different arrangements. It is through this process that the discourses or rules for determining what social problems are worthy of state intervention are developed and reproduced. These rules, which are shaped in large part by the interests of the dominant faction, are understood as common sense and therefore are not often challenged in a systematic manner.

Passive revolution describes the process where a subordinate group questions a common sense rule in a way that threatens or appears to threaten the hegemonic social order and the dominant ideologies on which it rests (Pearce & Tombs 1998: 37). This threat challenges the legitimacy of the state as a fair ruler and pushes it to react to these claims in order to re-establish its legitimacy (Mahon 1979: 163). In this case the state may temporarily marginalize the interests of particular powerful groups, such as corporations, to address the threatening claims of a subordinate group (Mahon 1979: 166). The state does this to reinforce, rather than weaken, the power of the dominant faction (Pearce & Tombs 1998: 37-8). For instance, the state might de-radicalize the claims of the subordinate group (Pearce & Tombs 1998: 37-8) and combine or reinterpret their interests in ways that benefits the long

term interests of the dominant faction (Mahon 1979: 171). Through this process, the state appears to address the concerns of the subordinate group, therein reducing the potential threat that they present to the current social order and the state's legitimacy. It is important to note that this is an ongoing, complex process that is never complete. Accordingly, we can never predict if or when this process will be disrupted and, in turn, result in something different (Pearce and Tombs 1998).

The concept of passive revolution allows me to ask why the federal and Alberta governments chose to address climate change rather than the other, equally damaging environmental harms in the tar sands. This concept also directs me to consider why the state chose CCS to address climate change in the tar sands rather than making structural changes, such as limiting or even shutting down production or holding oil corporations responsible for their carbon dioxide emissions. These sections on hegemony and passive revolution form the foundation on which I build the rest of my theoretical framework. In the next section I explore the social harm approach, which problematizes the hegemonic beliefs surrounding the concept of harm.

Social Harm

In the literature review we saw that the dominant concept of harm is ideological. Critical corporate crime scholars comment that the dominant concept positions criminal harms as inherently worse than non-criminal harms (Box 1983: iv). This juxtaposition encourages corporate crime, as a non-criminal harm, to be dealt with through regulatory and administrative laws (Bittle 2012: 46). The social harm approach builds on the issues found in the critical corporate crime literature.

Social harm theorists, such as Hillyard, Pantazis, Tombs and Gordon (2004: 2), maintain that the state, and in particular the criminal justice system, have monopolized the notion of harm. Hillyard et al. (2004: 1) argue that although the criminal law is understood by the public to address the most harmful actions in society, the concept of crime has only been applied to a small proportion of the harms that people experience over their lifetime. The criminal law, for example, does not address harm related to environmental destruction, natural disasters, poverty, or war. Social harm theorists find this problematic given that certain non-criminal harms cause significantly more devastation, suffering and death than criminal harms (Muncie, McLaughlin & Langan 1996: 299-300).

Herbig and Joubert (2009: 52) insist that the criminal justice system's preoccupation with categorizing actions according to whether they are legal or illegal enables powerful groups to resist the label of crime and, as such, obscures the harmfulness of their practices. This ideological divide not only makes "legal" harms seem less serious by comparison, but it also normalizes these practices and downplays the need to intervene through law (Hillyard et al. 2004: 2). Non-criminal harms, such as environmental disasters, are often explained-away as accidents or by-products of capitalism and are, therefore, accepted as inevitable rather than preventable (Hillyard et al. 2004: 1). Social harm theorists argue that an adherence to criminal definitions of harm reproduces the discourses that legitimate the criminal justice system as the most effective method for addressing harmful practices (Pemberton 2007: 34). This not only further justifies the exclusion of certain harms, but also delegitimizes other methods, such as social policies, that are capable of addressing a wider range of harms (Pemberton 2007: 34).

Harm as Social Harm

Social harm seeks to move beyond the state's definition of harm. Some academics, such as Pemberton (2007: 31), believe that the word "crime" should be removed from society's vocabulary as it prevents people from discussing non-criminal harms that they have experienced. Other academics, such as Hillyard et al. (2004: 1), believe that harm should only be separated from the notion of crime in order to present the full range of harms that people experience from "cradle to grave". According to this perspective, harm occurs whenever an individual's needs have not been fulfilled, including biological, such as the need for nourishment, and cultural, such as the need for knowledge. [56] This can manifest in the form of physical, economic, and emotional harm, as well as harm to cultural safety (Hillyard & Tombs 2004: 19-20).

Instead of looking at harm as an isolated event, as with the criminal justice system, social harm theorists focus on the cumulative nature of harm by examining how each incident of harm adds to and exacerbates previous harms that a person has experienced (Hillyard et al. 2004: 9). This idea is easiest to understand in terms of environmental harm. While coming into contact with one pollutant may not harm a person, the accumulation of toxic substances in their body could overtime contribute to cancer, mental illnesses, fatal diseases, and chronic, non-fatal diseases, such as asthma (all of which threaten a person's biological and/or cultural needs). Social harm theorists suggest that the cumulative nature of harm requires that we shift away from identifying direct, intentional harms, to identifying indirect, unintentional harms (Hillyard et al. 2004: 9). As such, these theorists position the occurrence of harm as an outcome of how society is organized and examine the features of

[56] These needs are shaped by individual, structural and contextual conditions (Hillyard & Tombs 2004: 20).

society, such as capitalism, that produce and reproduce the conditions that result in harm (Hillyard & Tombs 2004: 21).

Social harm theorists emphasize the importance of studying the role that the state has in reproducing society's organization and, subsequently perpetuating the conditions necessary for certain harms to occur. Hillyard and Tombs (2004: 22) argue that we must study this process in order to hold the state responsible for how it chooses to address non-criminal harms. Overall, the social harm approach allows me to ask how harm is conceptualized within the federal and Alberta governments' CCS policy by providing a broad concept of harm that I can compare to the governments' position. It also enables me to explore the role that the governments have, if any, in perpetuating environmental harm in the tar sands through their inaction on environmental issues and/or through any misguided policies. In the next section I build on social harm's definition of harm through an exploration of the deep ecology literature.

Deep Ecology

In the literature review I examined how green criminologists problematized the dominant concept of environmental harm for its role in legitimating the environmentally damaging activities of corporations and the state and obscuring the fact that these activities disproportionately affect non-human living beings and the natural environment (White 2003: 484-5). These scholars maintain that environmental regulations that are informed by this ideological definition are often ineffective because they seek to find solutions to environmental issues by operating within the structural features of society that make environmental destruction possible, such as neoliberal discourses that promote economic

growth over the health of the environment (Seis 2001: 134). Deep ecologists delve into these theoretical issues by exploring how society is organized in a way that facilitates humankind's environmentally harmful activities.

The starting point for deep ecology is the belief that there is nothing inherent or universal about how humans must interact with or understand the environment (McLaughlin 1993: 8). Accordingly, deep ecologists argue that the dominant concept of the human-environment relationship is ideological in the sense that it emboldens us to pursue our own needs and desires without any regard for the health and well-being of other living beings or the natural environment (Devall & Sessions 1985: 44). This dominant understanding of how humans should interact with and understand the environment encourages us to subject the earth to unnecessary harm, suffering and destruction by justifying our actions and obscuring the full extent of the damage that we are causing (Luke 2002: 179). Devall and Sessions (1985: 65) argue that we need to discredit this concept and develop a new one that is more in tune with the needs of the natural environment. This requires that we examine the dominant discourses that shape our understanding of and interaction with the environment. In the next few sections I outline the foundation of deep ecology through their critique of the following discourses: anthropocentricism, capitalism, individualism, humanism, and scientism. [57]

Anthropocentrism

The discourse of anthropocentrism is premised on the idea that humans are the most important entity in the universe (McLaughlin 1993: 18). Under this discourse, humans are superior to the rest of nature because they possess certain traits, such as self-awareness and

[57] Although these discourses interconnect and mutually reinforce each other, I present them separately to avoid repetition and to make them easier to understand.

the ability to reason, that make them inherently better and more valuable than other entities (Naess 1989: 186). Devall (1988: 152) explains that humans act as a reference point from which the meaning and purpose of everything in the universe is established, which implies that the value of each entity is determined according to its similarity to humans and/or its ability to help humans meet their needs and desires. This follows that the natural environment and non-human living beings exist for the purpose of serving humankind. Deep ecologists argue that anthropocentrism encourages humans to manipulate the natural environment and misuse other living beings to meet their own species' needs (Luke 2002: 179). It does this by suggesting that humankind possesses the inherent right to prioritize its own needs and desires over that of the rest of the environment. These actions are not seen as harmful since the manipulation and misuse of the environment benefits humans. In this respect, environmental harm is conceptualized in terms of the negative effects that environmentally destructive activities have for the health and well-being of humans (McLaughlin 1993: 156).

Deep ecologists propose that, instead of anthropocentrism, our society should be premised on biological egalitarianism (Devall & Sessions 1985: 67). This tenet dictates that every element in the environment and all living beings are inherently valuable and, therefore, should have the right to "live out their evolutionary destinies" (Devall 1982: 71). This destiny is to become self-realized, but the manner in which this happens and the form that this takes varies for each living being (Devall & Sessions 1985: 67). This conceptualizes environmental harm as an interference with any living being's ability to reach its full potential.

On the surface this principle suggests that humans are constantly inflicting harm in everything we do, but Devall and Sessions (1985: 12-3) explain that this issue is more complex than a simple moral judgment. They accept that it is impossible to survive and meet our basic needs, such as shelter and nourishment, without manipulating the environment to some degree or causing the death of some living beings. As Snyder (1990: 184) states, "there is no death that is not somebody's food, no life that isn't somebody's death". Deep ecologists only problematize unnecessary harm, which they deem to be the activities that cause pain, suffering and death and are not essential to meet a living being's vital needs (Snyder 1990: 184). This type of harm prevents living beings from reaching their full potential and denies their inherent worth.

Capitalism

Capitalism posits that the economy is the most important feature of society. According to this discourse, the success and progress of a country as well as the happiness and well-being of its citizens are contingent on the strength of the country's economy (Suzuki 1994: 125). As such, a country's progress can be measured in terms of its Gross National Product (GNP) and its citizens' happiness and well-being can be measured in terms of their standard of living. Suzuki (1994: 119) explains that the "GNP assesses the total market value of all goods and services in society created in a year," which implies that the more items in a country that can be commodified, the more successful the country will be. Standard of living assesses the degree of access a person has to resources and the quantity of material goods that they possess (Devall 1988: 85). This measure suggests that the more material goods people have, the better their lives will be.

Deep ecologists oppose capitalism on the basis that it motivates humans to prioritize the economy over the environment. Suzuki (1994: 121) contends that the goal of continuous economic growth fails to acknowledge that the natural environment cannot replenish its resources fast enough to meet market demands or repair itself in the face of continuous pollution and environmental destruction. Deep ecologists problematize the focus on GNP arguing that it commodifies everything in nature and dictates the value of everything based on its ability to help or hinder the economy (Suzuki & Dressel 1999: 158). The discourse of capitalism ignores that natural resources were once living beings by discounting the non-monetary value of the environment, such as clean drinking water (Suzuki 1994: 119-20) and obscuring the social, environmental and long term costs of these destructive industrial activities (Suzuki 1994: 125). While a high GNP may make a country look successful, it could be argued that the industrial activities related to GNP cause widespread harm, such as environmental destruction and human health effects (Suzuki & Dressel 1999: 155).

Deep ecologists propose that humans should base their lives on the principle of "simple in means, rich in ends" (Devall & Sessions 1985: 10). This principle posits that a country does not need a high GNP to be successful and humans do not need material goods to be happy. Instead, people only need the basics as this will allow them to reestablish a meaningful connection with nature and lead to a more fulfilling life. Accordingly, a country's success and the value of life should be measured in terms of the health of the environment and the quality of life for its inhabitants. A healthy environment requires humans to conduct themselves according to how nature operates, which means that they should not overharvest natural resources or pollute the environment (Snyder 1990: 90). This health can be evaluated in terms of the quantity of fresh air and water and the diversity of

living beings. A living being's quality of life can be evaluated according to whether or not their vital needs are met. These needs include biological, social and spiritual needs, but vary across species and are dependent on technical, environment and cultural conditions (Devall 1988: 15). A focus on the environment's health and life quality encourages humans to consider if and how their actions could hinder the social, psychological or ecological well-being of the ecosystem (Devall 1988: 18).

Individualism

Individualism is the notion that living beings are disconnected entities that are not defined by their relationship to other living beings (Barnhill & Gottlieb 2001: 7). Accordingly, the characteristics, value and behaviour of each entity can be understood in isolation from the rest of nature (Suzuki & Dressel 1999: 12). Individualism posits that living beings and elements of nature can continue to exist and thrive in isolation from each other (Luke 2002: 180). Deep ecologists reject the idea that living beings are isolated from each other (Devall 1988: 21). They argue that individualism encourages humans to see themselves as separate from the environment to the point that they believe they are not dependent on the earth for their survival (Luke 2002: 180). This isolation from nature allows humans to pursue all of their desires without limits because it creates a disconnect between human action, the effects it has on the environment and the effect that environmental degradation has on the quality of human life (Suzuki & Dressel 1999: 37). Naess (1989: 2) explain that humans are so embedded in nature that they cannot escape the consequences of their environmentally harmful practices. Because human and nature's needs are the same, humans actually harm themselves when they harm the environment. As such, deep ecology posits that humans

should act in synch with nature's needs rather than in competition with them as it will, subsequently, meet their own species' needs (Naess 1989: 11).

According to deep ecologists, humankind's existence is intricately connected with the rest of the environment (Devall 1982: 70). Glasser (2010: 60) explains that every living being and feature of nature is an indivisible part of the environment; referred to as holism. Deep ecologists argue that each part should be understood in terms of its relationship to other parts. The concept that everything is connected is crucial to the process of self-realization, which Devall and Sessions (1985: 67) refer to as "unfolding". This requires that each living being go beyond their "narrow self", as an isolated being, to their "Self", where it defines itself in relation to the rest of nature (Naess 1989: 6). This encourages humans to act in synch with nature's needs because we see their needs as our own.

Humanism

Humanism posits that humans have control over everything that occurs in their lives (Devall & Sessions 1985: 43), including the natural environment. According to this perspective, humans have mastery over the environment and can easily alter features of the environment so that it is better equipped to meet human needs and desires. Deep ecologists criticize the idea that humans have power over the environment. They comment that humanism falsely equates humans' ability to manipulate the environment with them having control over it. As such, this discourse obscures the repercussions that are associated with humankind's misuse of the environment while suggesting that humans can make rational decisions to minimize these repercussions (Egri 1997: 409). This constructs nature, by comparison as an inanimate object that exists to be controlled, possessed, used (Luke 2002:

179). This justifies humankind's continued dominance and abuse of the earth since it constructs humans as powerful actors and the environment as a powerless entity that is acted upon (Egri 1997: 410).

Deep ecologists see the earth as a powerful, animate, self-regulating being that acts in reaction to and in connection with other living beings (Egri 1997: 410). The environment and its intricacies of how various species, elements and non-living beings are connected is complex and humans are not capable of comprehending exactly how their social practices, such as deforestation, will affect the environment. Luke (2002: 182) explains that humans are arational, meaning that their treatment of the environment is not informed by reason. This idea acknowledges that humans do not have power over the environment and, as such, encourages humans to organize society and their daily lives in accordance to the way that nature works (Snyder 1990: 90).

Scientism

Finally, scientism constructs science as the best method for attaining accurate information about the external world in which we live (Bonnet 2013: 192). This constructs science as an objective form of knowledge and scientific findings as representative of the "truth".[58] Within this context, humans can use science to learn everything there is to know about the external world and create technology to solve any problems that face them (Suzuki 1994: 88). Deep ecologists contend that scientific knowledge is not objective but, instead, is shaped by political, social, economic and historical influences (McLaughlin 1993: 106). The

[58] Although I argue that scientific knowledge can be used to demonstrate the harmful effects of the tar sands, I also acknowledge the importance of alternative forms of knowledge, such as the experiences of Aboriginal people who are negatively affected by tar sands production.

image of science as objective creates a hierarchy where it is seen as the most effective method for understanding the environment and the value of all other forms of knowledge are ignored (McLaughlin 1993: 107). In addition to this, it obscures the personal and political interests that underlie scientific facts and justifies the continuation of environmentally harmful practices in the absence of scientific proof of this harm. Since scientific knowledge is specialized, the average citizen must rely on experts to determine if a particular practice causes environmental harm (Suzuki & Dressel 1999: 112). This is problematic because powerful groups have more access to these experts than the average citizen and can therefore influence whether their harmful practices are accepted as legitimate.

Deep ecologists argue that the notion that humans can eventually know everything about the environment is dangerous because it constructs humans' lack of knowledge about the environment as only temporary (McLaughlin 1993: 126). Accordingly, with increased knowledge humans can find a solution to their problems without having to stop the social practices that contribute to environmental harm (McLaughlin 1993: 126). The belief that we can eventually know everything creates a state of inaction when it comes to regulating the environment. Often, the reasons for not stopping an environmentally harmful activity are that we do not know for sure that it causes harm and we believe that we can continue these activities as long as we work towards discovering a way to minimize these harms (Suzuki & Dressel 1999: 4).

By relying on technology as the answer to environmental problems, it constructs environmental problems as a technical issue rather than a moral or political issue (Devall & Sessions 1985: 2). This perspective also obscures the fact that the environment is too complicated and interconnected to be able to predict if and how a technology will impact the

environment (Naess 1989: 26). Suzuki (1994: 86) explains that technology may actually cause more harm than it prevents by giving the impression that something effective is being done when it is not. This allows environmentally harmful activities to continue by suggesting that the harm they cause is contained (Devall & Sessions 1985: 196).

Naess (1989: 186) suggests that we must move from relying on science and its experts and technologies to ecosophy, which is informed by our connection to nature. As Devall (1988: 128) argues,

> A basic thrust of the deep, long-range ecology movement is transformation of the masses into a new kind of society. The aim is not to create a utopia of experts, a perfectly managed technocratic state, but to empower more and more ordinary people with their ecological self and to empower grassroots movements with solidarity and effectiveness when facing vast bureaucracies and hierarchical organizations.

Because we are not knowledgeable about the earth's processes, deep ecologists encourage society to be guided by the precautionary principle, where if we do not know the consequences of certain actions then we should not act at all (Suzuki 1994: 97). This is not meant to encourage a state of inaction, but, rather to encourage humans to be more humble and consider the effects that their actions and technologies may have on other living beings (Devall & Sessions 1985: 35).

Deep ecology allows me to evaluate the federal and Alberta governments' definition of environmental harm by providing me with a detailed, non-anthropocentric concept of harm to compare it with. Deep ecology also details several important discourses, as outlined above, to reflect on in my analysis of the taskforce documents.

Connecting the Theories

The concepts of hegemony and passive revolution, the social harm approach and deep ecology form the theoretical framework that I use to analyze the two taskforce documents in the next chapter. Within this framework, the federal and Alberta governments' decision to address climate change can be understood as a reaction to growing international pressure. Accordingly, the governments' CCS strategy is an attempt to reduce the threat this presents to the development of the tar sands. This framework positions the state and state relations as sites of conflict where the competing interests of different social groups are combined. This directs my attention towards exploring whose interests were privileged by the government implementing their CCS strategy and whose were ignored or de-radicalized. This framework also equips me with a definition of environmental harm that conceives harm as an outcome of society's organization and promotes equality among species, the interconnection of living beings, the self-regulating force of the environment and the arationality of humans. Because this definition is so incompatible with the way society is currently organized, it provides a unique standpoint from which I can evaluate the governments' concept of environmental harm in their CCS policy. In the next chapter I use this framework to inform my analysis of the taskforce documents.

Chapter 4: Findings and Analysis

This chapter outlines my findings and analysis of the ecoEnergy Carbon Capture and Storage Taskforce's[59] *Canada's Fossil Fuel Energy: The Way Forward on Carbon Capture and Storage* and the Alberta Carbon Capture and Storage Development Council's[60] *Accelerating Carbon Capture and Storage Implementation in Alberta: Final Report.* I present this data in the form of the following discourses: neoliberalism, globalization and scientism. These discourses were identified based on the dialogue that I created between the taskforce reports and the empirical and theoretical priorities that I identified in the literature review and theory chapters. Each discourse is presented separately, although they overlap and are mutually constitutive, and broken into two to three sub-elements. For each sub-element, I describe its characteristics and theoretical relevance before demonstrating how it unfolds within the taskforce reports. I conclude by examining the connection between the three discourses and identifying inconsistencies between them that offer possible areas for resistance.

Neoliberalism

Neoliberal discourse is rooted in the belief that the economy is the most important feature of society (Glasbeek 2002: 15). This discourse promotes continuous economic growth and seeks to orient all features of society towards achieving this goal (Ruggiero 2013: 268). For my analysis, I focus on three particular elements of this reasoning that emerged from the taskforce reports: the notion that environmental harm presents a threat to human affluence; the idea that there can be a balance between economic growth and

[59] Referred to in this chapter as the Ecoenergy Taskforce.
[60] Referred to in this chapter as the Alberta Taskforce.

environmental sustainability; and, the belief that regulations present a financial burden for corporations.

Environmental Harm as a Threat to Human Affluence

Neoliberal discourse is premised on the idea that the happiness and well-being of people can be measured according to their standard of living, which quantifies the amount of material goods that people own (Glasbeek 2002: 15). This perspective follows that a country's economy must be strong in order for its citizens to enjoy a high standard of living (Ruggiero 2013: 268). Within this context, corporations are valued because they are deemed to generate considerable revenue for the economy and produce the material goods that make peoples' lives more comfortable (Glasbeek 2002: 15). This dominant way of thinking problematizes anything that interferes with the growth of the economy (and, relatedly, the profitability of corporations) as this is deemed to threaten peoples' happiness and well-being (Pearce & Tombs 1998: 15). It is within this framework that environmental destruction is narrowly conceptualized as a threat to human affluence.

By conceptualizing environmental degradation in the terms of the harm it causes to human affluence, neoliberal discourse obscures the cultural safety, physical and emotional harm to humans and living beings that corporations cause in the pursuit of profits (Naess 1989: 28). This way of thinking also encourages corporations to continue their harmful activities by implying that these activities will, in the long run, improve peoples' lives (Ruggerio 2013: 268). The focus on standard of living ignores the reality that our so-called quality of life (i.e. health, happiness, and well-being) is achieved through the pollution and environmental destruction generated by corporations. Furthermore, corporations, their

shareholders, and powerful members of society are often the ones who are enriched by these practices, while the rest of society, particularly marginalized groups, are forced to pay for the consequences in the form of poverty, compromised health and exposure to polluted air and water (Ruggiero 2013: 268).

This neoliberal discourse unfolds in the two taskforce documents in the way that they conceptualize climate change as a threat to human affluence. The starting point for these taskforces is the assumption that tar sands activity is a positive, socially beneficial practice. As the Alberta Taskforce (16) document states, "the engine of economic growth and one of the key pillars of Alberta's high standard of living is the continued development and production of its vast energy resources." This emphasizes how crucial the tar sands are for Canada and Alberta's economy. Following this logic, if something were to interfere with the development of the tar sands then it would negatively impact the health of the economy and, in turn, lower our standard of living. It is within this narrow framework that the Ecoenergy and Alberta taskforces respond to concerns over the tar sands' emission of greenhouse gases.

These taskforces acknowledge that there is ongoing pressure for countries, such as Canada, to reduce their greenhouse gas emissions and that this has made every corporate activity subject to scrutiny for its emissions. The Ecoenergy and Alberta taskforces express concern that the stigma surrounding greenhouse gas emissions will negatively impact the tar sands' profitability especially since its bitumen-based product creates three times more carbon dioxide than conventional oil (Paehlke 2009: 7). The Alberta Taskforce (37) comments that members of the tar sands industry recognize that if their emissions continue to grow then the demand for their products may significantly decrease. The continued development of the industry is also threatened by the fact that it compromises Canada's

ability to reach its goal of reducing its greenhouse gas emissions by 60-70% by 2050 (Government of Canada 2008b: 7). The tar sands currently emits 30% of Canada's greenhouse gases, so any further development would raise Canada's emissions making it more difficult for them to reach their goal. This creates a dilemma for the federal and provincial governments as well as for the tar sands industry.

According to the taskforces, because of the stigma surrounding greenhouse gases the tar sands (and Canada) must reduce their emissions or risk a decrease in the demand for their product, but if they slow down production in the tar sands it could negatively impact the Canadian economy. For instance, the Ecoenergy Taskforce (2) proposes that

> The issue is that Canadian economic growth is inextricably linked to fossil fuel production and use, and production and use are in turn linked to GHG emissions. To address the carbon challenge, absolute emission reductions are required. Until the link between economic growth and energy use or the link between energy use and GHG emissions is broken (using options like CCS) it will be difficult to meet Canada's GHG reduction objectives . . .

Accordingly, from this perspective the problem is not that the tar sands are emitting greenhouse gases that are harmful to the environment, but that Canada's economic growth is being threatened by the stigma attached to the emission of these gases. The taskforce states that governments must find a way to separate the negative effects of oil production, greenhouse gases, from the benefits of this production, economic growth and a high standard of living. This is presented as the only option for the governments to meet their reduction goals. The possibility of reducing energy use is not even raised because any reduction in energy use is constructed as correlating with a reduction in Canada's economic strength and standard of living.

By focusing on the benefits that oil production in the tar sands has for Canadian citizens and the economic concerns of greenhouse gas emissions, the taskforces narrowly conceptualize the harm associated with climate change in economic terms. This enables them to obscure a wide range of harms, such as fresh water shortages, ice caps melting, the extinction of species and UV-B radiation (Boyd 2003: 69), related to climate change that negatively impact the quality of life for all living beings. It also absolves the tar sands industry of responsibility for emitting these harmful gases by explaining that these emissions are the unfortunate side-effect of economic activity that, according to dominant voices, benefits all Canadians. These taskforces deny that only certain groups, such as oil corporations and the government, benefit from tar sands activities, while other groups, such as the Athabasca Chipewyan who suffer rare cancers as a result of tar sands activity, disproportionately suffer the consequences of tar sands production (Radford & Thompson 2013).

Balancing Economic Growth & Environmental Sustainability

Neoliberal discourse is premised on the assumption that limitless economic expansion is both possible and desirable (Pearce & Tombs 1998: 15). This dominant way of thinking asserts that environmental issues can be addressed without undermining economic growth (Banerjee 2007: 70). As such, neoliberal proponents often invoke the term sustainable development to argue that corporations can continue to use natural resources as long as they do so in a manner that ensures they do not cause too much destruction or use too many resources that compromise the needs of future generations (Banerjee 2007: 70). From this perspective, this offers the best way of balancing economic and environmental concerns.

However, this way of thinking fails to acknowledge that unlimited economic growth is an impossibility given that we rely on a limited supply of natural resources (Ruggiero 2013: 269). Continuous economic growth is not sustainable because its growth outstrips the natural environment's ability to reproduce its natural resources (e.g. trees, nutrient-rich soil, mammals) (Ruggiero 2013: 269). In addition, the factories, chemicals and processes used to produce material goods pollute and damage the environment, thereby exacerbating the environment's ability to replenish itself (Ruggiero 2013: 269). As such, this discourse fails to acknowledge that the growth of an economy is inversely related to the environment's ability to reproduce its natural resources and, therefore, sustain itself.

This belief unfolds in the taskforce documents in the way that they construct CCS as the most viable solution to climate change in the tar sands. The Ecoenergy and Alberta taskforces contend that it is possible to find a balance between addressing greenhouse gas emissions and ensuring that tar sands activities continue. For instance, the Ecoenergy Taskforce (i) points out that "[CCS] is not the only solution possible or needed, but our analysis indicates that it must be part of Canada's overall plan to reduce GHG emissions and ensure our continued economic prosperity." The Alberta Taskforce (3) adds to this by stating that,

> CCS funding is an investment in the environment because it will significantly reduce GHG emissions. CCS funding, by both government and industry, is equally an investment in the economy because it ensures that GHG-emitting industries remain competitive on the international stage and it spurs a wealth of growth opportunities that Albertans are uniquely positioned to capitalize upon.

These taskforces acknowledge that there are a number of methods for addressing greenhouse gas emissions, but justify their promotion of CCS on the basis that, from their perspective, it

is the only option that balances Canada's economic and environmental needs. Underlying this justification is the assumption that economic growth and environmental sustainability are commensurable and can, in fact, grow simultaneously. In terms of the tar sands, this means that it is possible to continue extracting and producing bitumen while also ensuring that these practices do not compromise the integrity or health of the environment. These taskforces claim CCS is the key to sustainable development in the tar sands (Alberta Taskforce 16), yet both take issue with the cost of researching, developing and implementing CCS.

It is within this context that the Alberta Taskforce (8) recommends the use of enhanced oil recovery (EOR), "one of the ways CCS will spur economic benefits is through EOR- the storage of CO_2 in oil reservoirs spurring incremental oil production." EOR is a process where carbon dioxide, which has been captured with CCS technologies, is injected into fossil fuel reservoirs to extract bitumen that had previously been inaccessible with the use of current tar sands technologies. By using EOR, the taskforce suggests that CCS becomes more economically feasible as it increases the yield that oil corporations can sell by approximately 50 billion barrels (Alberta Taskforce 30). This increased yield is expected to compensate for some of the costs associated with installing and operating CCS technologies. In addition, the taskforces state that the carbon dioxide used in this process will still be permanently injected underground so that it cannot contribute to greenhouse gas emissions in the atmosphere.

By constructing CCS as a solution to greenhouse gas emissions that balances economic and environmental needs, the Ecoenergy and Alberta taskforces obscure the fact that the continued development of the tar sands is compromising the environment's ability to sustain and protect itself. CCS enables tar sands companies to produce oil legitimately by

appearing to address climate change while ignoring its other causes, such as clear-cutting forests, removing top soil, destroying plant life and relying on carbon dioxide-heavy bitumen (Radford & Thompson 2013). Furthermore, by promoting the use of EOR to make CCS more economically feasible, the taskforces undo any real impact that CCS could have in reducing greenhouse gas emissions. It does this by enabling oil corporations to extract more bitumen from the ground, which means that more bitumen can be produced and used by consumers. Each of these stages produces more, not less, greenhouse gas emissions. As such, the taskforces actually prioritize the economy's health over that of the environment.

Regulations as a Financial Burden

Neoliberal discourses encourage corporations to maximize their profits (and that of their shareholders) by minimizing their costs, which in many cases includes environmental safeguards (Glasbeek 2002: 17). These costs, which are externalized onto society in the form of air and water pollution, land degradation, increased rates of cancer and autoimmune diseases, are accepted as an inevitable consequence of maintaining a strong economy and high standard of living (Pearce & Tombs 1998: 30). Within this context, neoliberal discourse assumes that it is inappropriate and inefficient to implement strong regulations to address environmental damage as this creates an unnecessary financial burden for corporations (Pearce & Tombs 1998: 15). These regulations are deemed unnecessary because corporations are viewed as being responsible enough to consider the social and environmental effects of their business practices (Banerjee 2007: 48). In addition, the market is understood as the best way to address environmental issues because of its built-in mechanism of demand and supply that deters corporations from causing harm (Grabosky 1994: 427).

These anti-regulatory claims ignore the fact that corporations cannot be socially responsible because they are legally bound to make profits for their shareholders and, therefore, are often unwilling to address environmental concerns unless it furthers their profitability, or if they are required to do so by properly worded and adequately enforced laws (Pearce & Tombs 1998: 15). This also presents an oversimplified image of the relationship between demand and supply by failing to acknowledge that consumers' demands are generally not based on homogeneous or universal values (Glasbeek 2002: 23). It does not take into account the hegemonic power that corporations possess in terms of controlling the market and obscuring the harm to which their business practices contribute (Glasbeek 2002: 24). In this sense, customers do not actually possess adequate information or, in many instances, power to ensure that their demands are met, which means that corporations can continue harming the environment without risking a drop in profitability. By promoting a decrease in regulations, this discourse enables corporations to continue causing harm in the pursuit of profits since it decreases the likelihood that they will be held responsible for their actions. In addition, by suggesting that unregulated corporate activities produce benefits for society, these knowledge claims help legitimate harmful corporate activity and justify the practice of society, not corporations, paying for this harm (Pearce & Tombs 1998: 30).

This anti-regulatory discourse unfolds in the two taskforce documents in the ways that they conceptualize CCS as a social good. The Ecoenergy Taskforce (18) states that

> . . . the net benefits [of CCS] befit a public investment on the order of $2 billion. This financial gap is what currently prevents the commercial applications of a series of first-phase CCS projects today, as it is simply not possible for private sector players to commit additional hundreds of millions of investors' money on an activity

> (emission reductions) that is essentially a public good and that doesn't generate a return on investment.

The Ecoenergy Taskforce (vii) points out that CCS is too expensive for corporations to invest in CCS because the technology is largely unproven, regulations are unclear and market prices of carbon dioxide are unknown. Accordingly, the taskforce argues that tar sands corporations should not have to pay for CCS, which is essentially a "public good". In this sense, CCS is constructed as a public good because greenhouse gas emissions are viewed as a public, not corporate problem.

While corporations are willing to help out by implementing CCS technologies, the government should provide incentives, such as financial support and freeing corporations from regulatory restraints. For instance, the Alberta Taskforce (44) insists that

> Incenting the development of CCS in Alberta could be done with greater or lesser degrees of direct government intervention including roles such as market maker, infrastructure owner, project approver and auditor. Where possible, using market-based mechanisms to enable private sector players to bring their ingenuity to the task of CCS may lead to the greatest long-run benefits.

Here the Alberta Taskforce explains that the government's role in furthering the CCS agenda should be to encourage corporations to adopt CCS by making the process easier and clearer. The taskforce assumes that the government's role is to fund CCS projects, minimize the financial risk for corporations and approve CCS projects until the market takes over. The Alberta Taskforce (58) explains further, "in the longer term, it is expected that market forces would drive CCS development. CCS technology should be 'off the shelf' and sustaining by this time." This suggests that government regulations will be in large part unnecessary at this

point because the market demand for CCS will ensure that tar sands corporations will implement and use CCS in their factories.

By suggesting that greenhouse gas emissions are a public problem and CCS a public good, the Ecoenergy and Alberta taskforces obscure the fact that tar sands corporations are producing these greenhouse gases and externalizing the associated harms onto society. This, in addition to the taskforces constructing CCS as a financial burden, justifies corporations not having to reduce their greenhouse gas emissions or having to pay for the harms they produce. What is more, by explaining that the government's role should be to support oil corporations rather than monitor and regulate them, the taskforces discourage government intervention in corporate activity and, therein, leave the future of CCS up to the vagaries of the market. This ignores the fact that the market is dominated by those who have the most power and money (read corporations) and, therefore, the proposed demand and supply relationship that is expected to make CCS self-sustaining is largely mythical.

Globalization

The discourse of globalization presupposes that the whole world is a giant (economic) community. Within this framework, matters such as the economy, political conflict or environmental problems are best addressed on an international level (Seis 2001: 123). For my analysis, I focus on two elements of this discourse that emerged from the taskforce reports: the notion that environmental problems require internationally-approved solutions; and, the notion that the government should collaborate with transnational corporations.

A Global Problem & Internationally-Approved Solution

The discourse of globalization promotes a unified world-wide response to environmental issues (Seis 2001: 124). The focus of this discourse is on the effect that environmental problems could have on the world market and, particularly, on trade relations (Seis 2001: 124). The dominant way of thinking assumes that if environmental regulations among countries are not unified then the requirements for importing products and services to other countries would vary too much and interfere with worldwide economic integration (Hessing 2002: 40). As such, this discourse encourages governments to safeguard their countries' economic growth by aligning their environmental policies with the rest of the world.

Discourses of globalization are problematic because they prioritize liberal trade relations over the health of the natural environment (Hessing 2002: 40). This prioritization creates an atmosphere of cross-deregulation where countries pressure each other to lower environmental standards (a race to the bottom) in order to increase the quantity of imports and exports between countries (Seis 2001: 130). Accordingly, this discourse has the effect of reducing the regulations in place to protect the environment, ignoring the concerns of citizens when it comes to local environmental issues (Hessing 2002: 40).

This discourse unfolds the two taskforce documents in the way that they conceptualize climate change as a global issue. The Ecoenergy Taskforce (13) states that "the task at hand is trans-boundary, cross-jurisdictional and it touches many sectors." Because the effects of climate change are not restricted by geographical or national boundaries, the Ecoenergy and Alberta taskforces maintain that countries must work together

to discover, develop and implement the technologies and regulations to ensure that there are significant emission reductions. The Ecoenergy Taskforce (21) declares that if Canada does not work with other countries then there will be serious economic consequences.

> Domestic action on climate change must proceed at a pace that is similar to the actions being taken by Canada's major trading partners, but it is difficult to predict what exactly this pace will be. If Canada moves too aggressively to reduce GHG emissions in the near term it risks putting its industrial base at a competitive disadvantage. By the same token, however, if the country moves too slowly it may also hurt its competitiveness as the rest of the world turns to lower-emissions standards that make GHG-intensive energy sources (like the oil sands and heavy fuels) less viable. The competitiveness of the domestic fossil energy sector hinges on using CCS to satisfy growing GHG reduction obligations while continuing to develop these energy resources. This is why Canada needs to urgently develop and implement CCS. Inaction may result in a declining role for Canada's fossil energy industry in the future.

Here the Ecoenergy Taskforce draws a connection between a country's response to an environmental issue and the strength of their trade relations. The taskforce asserts that Canada must implement CCS quickly so that it can ease the international pressure to address climate change and maintain their competitiveness in the world market. If Canada does nothing or little about greenhouse gas emissions, its trading partners may install technologies and regulations that make their product superior, thereby making Canada's higher-emitting oil seem "dirty" and less marketable. The taskforce also warns that if Canada implements CCS too soon or attaches strong regulations to CCS, and this is out of touch with what the rest of the world is doing, then Canada's economy will suffer.

Since the U.S. is one of Canada's largest trading partners, the Ecoenergy Taskforce (21) argues that Canada should address the issue of climate change in a similar manner to the U.S, "it is particularly important to note that whatever happens in the U.S. will impact Canada due to the intimate trade links between the two countries." In terms of Canada's trade relations with the US, Canada is bound under NAFTA to export 60% of its oil to the US, regardless of the level of oil production in the tar sands (Marsden 2008: 78). If Canada were to implement strong environmental regulations, and these regulations were to significantly interfere with the profitability of tar sands corporations or the competitiveness of other countries, then these regulations could be vetoed by a NAFTA council and Canada could be fined accordingly (Marsden 2008: 74). As such, the taskforces contend that Canada should align its CCS policies with the U.S.

The Ecoenergy Taskforce (i) explains that there are multiple benefits to adopting CCS, "benefits of CCS include the development for export of advanced technology, the international respect and goodwill that will flow from taking the lead on GHG emissions reductions, and a new source of long-term economic growth and development." This taskforce charges that by implementing CCS Canada will be rewarded with new market opportunities associated with the development of CCS technologies, which will benefit Canada's economy. In addition, by addressing a globally accepted problem, Canada's reputation will be improved on an international stage. The taskforce suggests that this positive reputation will ease international concern surrounding the emission of greenhouse gases in the tar sands, which will reduce the stigma surrounding their product and enable tar sands activity to remain profitable.

By conceptualizing climate change as a global problem, the taskforces effectively downplay the seriousness of environmental problems that are specific to the tar sands, such as leaking tailing ponds, and the concerns of Canadian citizens, such as David Schindler, a scientist who found that the tar sands release toxic substances, such as mercury, into the surrounding community (Radford & Thompson 2013). Also, by addressing the issue of climate change within the context of trade relations, the Ecoenergy and Alberta taskforces ignore other possibilities for addressing climate change, such as slowing down production in the tar sands and supplementing energy needs with renewable energy. Instead, these taskforces perpetuate cross-deregulation by choosing an internationally accepted, albeit questionable, solution. Their request to align Canada's CCS policies with the U.S is particularly troubling given that the U.S. government ended their first CCS program, Future Gen, because it was too expensive (Nikiforuk 2009).

Collaboration between Transnational Corporations & the State

The discourse of globalization describes a relatively new "reality" whereby corporations simultaneously operate in multiple countries (Seis 2001: 124). This trend has given corporations the freedom to operate internationally as they are no longer deemed to be accountable to single nation-states (Seis 2001: 132). This dominant way of thinking claims that governments and corporations must work together on matters such as environmental regulations (Amable 2011: 11). It also warns that if governments do not cooperate with corporations (e.g. by implementing strict regulations) then these corporations will take their business to a more accommodating country (Seis 2001: 124). It is assumed that this will negatively impact a country's ability to compete in the world market.

These beliefs help to promote a race to the bottom where countries continuously lower their environmental regulations to compete with other countries for the attention and support of transnational corporations. What is more, it makes the state look weak and unable to address environmental destruction, which allows the state to avoid creating strict regulations to protect citizens and the environment (Amable 2011: 11).

Discourses of collaboration unfold in the ways that the Ecoenergy and Alberta taskforces justify low regulatory costs for oil corporations implementing CCS. The Ecoenergy Taskforce (15) explains what this means for the tar sands,

> In the case of oil and gas any additional costs associated with CCS would simply reduce the competitiveness of Canadian production, due to the global nature of oil markets. Any additional costs would simply result in a shift in production to other locations rather than a reduction of domestic emissions.

The Alberta Taskforce (37) echoes these concerns,

> Should compliance costs for large emitters in Alberta increase beyond the level that is competitive with other jurisdictions, Alberta would be less attractive for investment. As a result, it could experience reduced levels of resource development and fewer value-added investments such as upgrading. These investments have been key drivers for Alberta's economic prosperity. Alberta needs competitive CO_2 emission compliance costs in order to remain internationally competitive.

Here the taskforces argue that if Canada requires every factory in the tar sands to install top-of-the-line CCS technologies and enforce strict greenhouse gas emission regulations then corporations may be much less profitable as their money is tied-up in technology and regulatory costs. This, in turn, will make the tar sands look less attractive to potential investors and corporations looking to set up factories. These taskforces imply that strong

regulations will cause oil corporations to move to other countries that have more lenient regulations so that they can maximize their profits. This is based on the assumption that corporations are powerful enough to close down their production and open it elsewhere whenever they want (despite the fact that their very survival relies on access to Canada's natural resources). According to these taskforces, if these corporations decide to move then Canada's ability to compete in the world market will be severely compromised.

Instead of forcing corporations to abide by strict regulations, the Ecoenergy Taskforce (ix) proposes that industry and government work together to develop mutually beneficial financial and regulatory conditions. This encourages the Canadian and Alberta governments to consult tar sands corporations when developing regulations that will govern the use of CCS in the tar sands as well as when deciding on the proper approach to funding CCS. These taskforces assume that this is the best method to ensuring that tar sands corporations remain happy. The Alberta Taskforce reasons that both levels of government should do everything in their power to ensure that these corporations implement CCS.

> Industry has a track record of managing certain types of risks- such as those for design, construction, and financing. Government should seek to ensure that industry has an incentive to properly manage the risks that it can. Government should also retain the risks that are most appropriate for it to manage, such as evolving compliance burden risk. (Alberta Taskforce 44)

One of the risks that the Alberta Taskforce finds "most appropriate" for the government to manage is related to pore space. Pore space is the empty space beneath the ground where tar sands corporations will inject and permanently store the carbon dioxide they capture from their factories. The taskforce proposes that once the space is filled with carbon dioxide and sealed the government should take over the pore space and retain any of the associated

liabilities, such as carbon dioxide leaks. This decision is based on the premise that pore space will store carbon dioxide for hundreds of thousands of years (Alberta Taskforce 52), which surpasses the average liability period for corporations and, as such, may discourage corporations from implementing CCS. The taskforce concludes that corporations would be more willing to implement CCS if the government assumed the liability after a given period of time.

These taskforces justify the use of low CCS regulations and reduced liability on the basis that these regulations will not dissuade corporations from extracting oil. What the taskforces fail to acknowledge, however, is that the world's oil supply is dwindling, leaving few places for corporations to set up their operations, and the tar sands is home to one of the largest sites for extractable bitumen in the world (Nikiforuk 2009: 1). As such, corporations would not be as willing to shut down their operations as the taskforces suggest. In addition to this, by asking the government to cooperate with industry in terms of developing regulations and funding, the taskforces suggest that the state is powerless to implement regulations to protect its citizen and environment and obscures the fact that corporations have an inherent interest in externalizing their production costs.

Scientism

The discourse of scientism is rooted in the belief that science is the most authoritative form of knowledge (McLaughlin 1993: 106). The dominant way of thinking suggests that scientific knowledge can be used objectively and accurately to provide humans with information about the external world (Bonnet 2013: 192). Accordingly, any gaps in our knowledge are only temporary as humans will eventually learn all there is to know about the

world (McLaughlin 1993: 126). For my analysis, I focus on three particular elements of this discourse that emerged from the taskforce reports: the notion that scientific proof is necessary to establish the presence of environmental harm; the notion that humans can control the risks associated with their actions; and, the notion that environmental harm is a technical problem and, as such, humans will inevitably find an appropriate solution.

Scientific Proof of Environmental Harm

The discourse of scientism prioritizes scientific knowledge over all other types of knowledge (McLaughlin 1993: 106). The dominant way of thinking assumes that knowledge claims grounded in science are more valuable than those grounded in other forms of knowledge since science is viewed as objective, whereas other knowledge is seen as subjective and susceptible to bias (McLaughlin 1993: 107). For a practice to be established as harmful, every scientist who studies the problem is expected to reach the same conclusion regarding the harmfulness of the practice since they are essentially discovering the truth about a problem. It is only after this consensus is reached that the practice can be singled-out and corrected (Suzuki & Dressel 1999: 112).

Dominant discourses of scientism fail to acknowledge that science is not objective, particularly given that research questions, methodologies and interpretations of findings are all shaped by the worldview of scientists and, in this situation, corporate interests (Devall 1982: 91). By arguing that particular forms of science are the most authoritative, this dominant way of thinking effectively delegitimizes peoples' experience of harm and allows powerful groups, such as corporations, to use science to bolster their claims that their business practices do not cause environmental harm (Naess 1989: 53). This enables

corporations to postpone any attempt to regulate or control their behaviour since the harm that they cause has to be "proven" regardless of the existence of public concern over the matter. This allows the harm to continue unabated and leaves attempts to address them in the hands of "experts" whose interests do not always align with those of the public (Naess 1989: 72).

Scientific discourses unfold in the two taskforce documents in the way that the Ecoenergy and Alberta taskforces rely on the claims of certain scientists when accepting that the tar sands' greenhouse gas emissions present a real threat to the environment. When addressing these concerns, the Ecoenergy Taskforce (1) explains that,

> There is growing public concern supported by consensus among the international scientific community that global emissions growth will soon drive atmospheric CO_2 concentrations to levels not seen in 10 million years, resulting in an increasing risk of rapid climate change.

Here the taskforce makes two important assumptions: first, that public concern regarding the harmfulness of carbon dioxide is not enough of a reason to rectify the problem. Instead, scientific knowledge is needed to authenticate these concerns as this type of knowledge is unbiased and, therefore, simply reflects the truth about carbon dioxide emissions in the tar sands. Second, there has to be a "consensus among the international scientific community" in order to confirm that carbon dioxide exacerbates climate change conditions. According to the taskforce, it is only when this consensus is reached that the government should address this issue. This suggests that in 1988 when the U.N. officially accepted the position that greenhouse gas emissions contribute to climate change or when the IPCC's first (and subsequent) reports warned that greenhouse gas emissions are expected to double by 2050

(General Assembly of UN 1988) there was no real consensus on the harmfulness of carbon dioxide. This lack of consensus is used to justify the delayed decision regarding the reduction of greenhouse gas emissions linked to the tar sands.

Interestingly, while the taskforces rely on the consensus of scientists when accepting that climate change is a real threat they support the implementation of CCS despite the fact that it is a new, largely untested technology (IPCC 2005: 48). The Ecoenergy Taskforce uses the "increasing risk of rapid climate change" to justify the immediate implementation of CCS. The Ecoenergy Taskforce (20) finds the lack of consensus unproblematic as "many of the skills required for CCS exist in the oil and gas and power generation sectors, but CCS-specific capabilities will only come through actual experience." The Ecoenergy Taskforce argues that only by forging ahead and adopting CCS can the government and tar sands corporations develop the skills and knowledge necessary to address the risk that carbon dioxide presents to the environment. This follows that the development and implementation of CCS will rely on experts that already exist in the tar sands and that gaps in their knowledge will be filled by "actual experience". The terms "actual experience" and, alternatively "learn-by-doing" (Alberta Taskforce 49), suggest that expertise in CCS can only be gained through implementing it and that a consensus on the benefits of CCS can only come after this expertise is developed.

By relying on science to classify carbon dioxide as a threat worth addressing, the Ecoenergy and Alberta taskforces dismiss the public's concerns regarding other environmental harms in the tar sands as unfounded. This allows the taskforce to delegitimize the concerns of the Fort Chipewyan Cree who argue that the tar sands have contaminated the waterways near their community, thereby poisoning aquatic life in these waterways despite

the fact that members of this community have lived in the same place for decades and have witnessed a change in the fish (rubbery and taste like oil) and the health of its people (higher rates of rare cancers) (Radford & Thompson 2013). The reliance by both taskforces on science obscures the fact that they pick and choose scientific experts and findings that enable them to justify the ongoing expansion of the tar sands. While the taskforces point to the need for a scientific consensus when addressing environmental issues in the tar sands, thereby delegitimizing the knowledge claims of scientists such as David Schindler and Kevin Timoney, both of whom oppose the tar sands, they promote the implementation of CCS without the existence of a consensus on the benefits of such technology. This allows them to claim that tar sands corporations have the necessary expertise to fill the gap in CCS knowledge and allows them to cloak this lack of knowledge in scientific language. This justifies their use of Alberta as a test site for a technology that could end up not working and therein further contribute to the non-reduction of greenhouse gas emissions.

Controlling Risk

The discourse of scientism presupposes that living beings and elements of nature exist in isolation from each other (Luke 2002: 180). The dominant way of thinking suggests that humans are separate from the environment and therefore not dependent on the earth for their survival (Luke 2002: 180). This separation allows humans to pursue all of their needs and desires without fear that it may negatively impact the natural environment and, in turn, threaten their own health or survival (Suzuki & Dressel 1999: 37). According to this discourse, science allows humans to predict and minimize the risk that their activities have on the environment by isolating and altering different variables.

The problem, however, is that this way of thinking fails to acknowledge that humans are so embedded in nature that they cannot escape the consequences of their environmentally harmful practices (Naess 1989: 2). From this perspective, given that the needs of humans and nature are the same, humans actually harm themselves when they harm the environment. In addition, by stating that the proper way to study the environment is by isolating elements of nature in a lab and studying how they respond to different stimuli, the discourse of scientism presents relationships in the environment in a linear way when in fact they are much more complex (Devall 1982: 22). This legitimates the belief that humans can identify and control the risk that their practices have on the environment and, in turn, justifies the continuation of these harmful practices.

The notion that risks can be controlled unfolds in the taskforce documents in the way that the Ecoenergy and Alberta taskforces believe that greenhouse gas emissions can be isolated and captured during the extraction and processing stages of bitumen before they are emitted in the atmosphere. These taskforces explain that in order for tar sands corporations to continue extracting and processing bitumen, they must be able to manage their greenhouse gas emissions more efficiently. Accordingly, the Ecoenergy Taskforce (i) states that "we must find a way to 'break' the status-quo equation: economic growth= energy use= GHG emissions." Here the Ecoenergy Taskforce presents a linear connection between the production and use of bitumen and the emission of greenhouse gases. Within this context, the risk of greenhouse gas emissions can be controlled simply by removing it from the equation so that it cannot contribute to climate change or threaten the health of humans. According to this taskforce, this does not require that tar sands corporations shut down factories or slow

down production but, rather, that they adjust their business practices by adding on a technology that can isolate and remove the carbon dioxide that they emit.

In addition to conceptualizing greenhouse gas emissions as controllable, the Ecoenergy and Alberta taskforces assume that risks associated with CCS technologies can be managed. The Ecoenergy Taskforce (6) explains, "as with any other large-scale industrial activity, CCS entails some safety and environmental risks. None of these risks are novel as many of the activities associated with CCS are already widely used." The Ecoenergy Taskforce assumes that the risk associated with CCS in the tar sands is similar to that of any other "large-scale industrial activity" and, therefore, that there should be no reason to delay the implementation of CCS. The Alberta Taskforce (59) equally dismisses safety concerns when it comments that "processing, transportation and storage of CO_2 has been accomplished safely in Canada and the U.S. in a number of settings." These taskforces suggest that because the risks are not unique to the tar sands, the Canadian and Alberta governments as well as tar sands corporations can use their experience in controlling the risks present in other industries to properly manage the risks associated with CCS.

By stating that greenhouse gas emissions are controllable, the taskforces obscure the range of tar sands practices that contribute to these emissions (such as deforestation). Also, by emphasizing the capture of carbon dioxide, these taskforces ignore other greenhouse gases (such as methane) that are emitted in the tar sands and that equally contribute to climate change. In terms of managing the risks associated with CCS, the taskforces blatantly omit the long history of environmental damage that has been caused by leaks in pipelines that were used to transport toxic substances and the injection of dangerous substances into space beneath the ground (see Bankes et al. 2008: 632).

The Inevitable Solution

The discourse of scientism presupposes that humans, when faced with a problem, will inevitably find a technical solution (Devall & Sessions 1985: 196). This dominant way of thinking argues that although humans do not yet know everything there is to know about the environment, human knowledge is constantly evolving and will one day reach the point where we know everything (Egri 1997: 409-10). This discourse treats environmental harm as a temporary, technical issue and promotes technology as the ultimate solution to our problems.

By conceptualizing environmental harm as a temporary and technical problem, this discourse justifies the continuation of environmentally harmful practices (Devall & Sessions 1985: 196). As such, it ignores the fact that humans are largely ignorant when it comes to the natural environment (Naess 1989: 26). Also, the reliance on technology is problematic because we naively believe that it is going to make a huge difference and be universally applicable, but in reality technology often exacerbates environmental conditions because it is ineffective and encourages people to continue their harmful behaviours based on the erroneous belief that the problem has been solved (Naess 1989: 96).

This discourse unfolds in the two taskforce documents in the way that they conceptualize CCS as a sure-fire solution to their greenhouse gas problem. The Ecoenergy Taskforce (i) explains that CCS will make a significant impact on Canada's greenhouse gas levels when they state that "CCS presents an opportunity for Canada to develop world-leading technology that can reduce greenhouse gas (GHG) emissions rapidly and on a massive scale." These taskforces predict that CCS can capture up to 50% of Canada's project

emissions (Ecoenergy Taskforce 24) and 70% of Alberta's projected emissions (Alberta Taskforce 16). They also encourage the Canadian and Alberta governments to depend on CCS in order to meet their reduction goals (see Government of Canada 2008b: 7; Hsu & Elliot 2009: 470) even though CCS technology has not been implemented.

The fact that the technology has not been implemented or tested seems unproblematic to these taskforces. The Ecoenergy Taskforce argues that everything that is needed to implement CCS already exists.

> There are no technological barriers to implementing CCS; all of the components for capture, compression, transportation, injection and storage already exist at industrial scale. What is missing is the full integration of these components in a commercial facility the size of a typical power plant or bitumen upgrading facility. (Ecoenergy Taskforce 4)

This suggests that the integration of these separate technologies is a technical issue and that it is just a matter of time before they are up and running.

CCS is treated as the universal solution to the problem of greenhouse gases even though the factories, facilities and machinery in the tar sands are not all the same. The Ecoenergy Taskforce (vi) comments that this should not stand in the way of the tar sands using CCS as "[it] is the only reduction option with the flexibility to either be retrofitted into the existing industrial fleet or be built into new and future facilities." This suggests that CCS can be developed and applied to any factory, facility or machinery in the tar sands.

By treating the implementation of CCS as a sure-fire solution to the greenhouse gas problem, these taskforces encourage the Canadian and Alberta governments to delay

addressing greenhouse gas emissions until the technology is fully integrated and implemented. They justify this by exaggerating the extent to which CCS will reduce carbon dioxide in Canada and by arguing that CCS can be installed in all factories and facilities in the tar sands. They ignore the fact that while the governments are waiting for CCS to be fully developed (which it may never be) tar sands activity continues to emit greenhouse gases. This only increases Canada's greenhouse gas emissions, making it more difficult to meet their emission reductions and making them more dependent on a "solution" that may not be able to deliver the reduction promises forwarded by the taskforces. In addition, the focus on greenhouse gas emissions as a technical problem ignores that the decision to implement CCS in the first place is a political decision that has been informed by the interests of particular groups.

Connecting the Discourses

As we have seen in this chapter so far, the two taskforce documents rely on discourses of neoliberalism, globalization and scientism to justify the implementation of CCS in the tar sands as a response to climate change concerns. Neoliberal discourses help to conceptualize climate change as a threat to the strength of Canada's economy and the affluence of its citizens. This perspective allows the taskforces to position CCS as the most effective method for ensuring the economy remains unaffected by climate change and justifies the public, not corporations, paying for the development and implementation of CCS technologies. Furthermore, this discourse enables the taskforces to demand low (even no) regulations for tar sands corporations by maintaining that the market will ensure that corporations adopt and use these technologies appropriately and effectively. In the process, the overall goal remains the ongoing expansion of the tar sands.

Discourses of globalization further the status quo agenda by arguing that Canada's economic expansion requires that it integrates its economy with the rest of the world. The taskforces use this discourse to argue that Canada must respond to climate change in a manner that is not too out of line with the rest of the world and that Canada needs to provide incentives for tar sands corporations to continue operating in Alberta. By conceptualizing CCS as a globally accepted solution, these taskforces further justify reducing regulations and the liability of tar sands corporations for destroying the environment.

Discourses of scientism allow the taskforces to cloak their economic agenda in scientific terminology and knowledge claims. The taskforces justify their delayed response to climate change in the tar sands by suggesting that there was no consensus regarding the harmfulness of this issue. At the same time, the lack of consensus regarding the viability of CCS is obscured by arguing that it is possible to separate carbon dioxide from the extraction and upgrading stages of bitumen as well as by focusing on the inevitability of CCS as an effective solution to climate change. While I was open to finding counter-hegemonic discourses, there were not any present in the taskforce documents. The dominance of the discourses in the taskforce does not mean that there are not any broader counter-hegemonic discourses regarding environmental harm in the tar sands and the viability of CCS as a solution to climate change. I will explore some of these knowledge claims in the concluding chapter.

Chapter 5: Discussion and Conclusions

This chapter contains my discussion and conclusions. The first section examines some of the counter hegemonic discourses surrounding environmental harm in the tar sands and the viability of CCS as a method for addressing climate change.[61] The second section reviews my research findings through the theoretical lens that I developed in Chapter 3. The final section explores recent attempts to resist and challenge the environmentally harmful practices associated with the tar sands - a signal that dominant perspectives of tar sands production and environmental harm are not absolute and never complete.

Counter Hegemonic Discourses

In the previous chapter we saw how particular discourses dominated the discussion and debate regarding the tar sands and how these business practices should be regulated. However, as this section explores, despite the dominance of neoliberal, global and scientific discourses, there is evidence of counter-hegemonic claims of various groups when it comes to the harmful effects of the tar sands and the use of CCS. Interestingly, in a way that demonstrates that economic discourses are far from unified or complete, several groups relied on neoliberal discourses to argue that CCS technologies do not make economic sense. For instance, the IPCC (2005: 8) explains that CCS may not be "economically feasible" because it is not a universal technology that can be built onto every factory and machine in all the industries that emit greenhouse gases. To emphasize this point, the IPCC (2005: 10) comments that it would be cheaper to tear down all of the polluting facilities and rebuild

[61] While there are a multitude of discourses that have been used by groups who oppose the tar sands and problematize CCS, I have chosen to focus on a select few. This is due to the space restraint of this paper and because I wanted to highlight the counter-hegemonic discourses that challenge and/or rework the dominant discourses that were utilized by the taskforces.

them with CCS technologies than to retrofit the existing ones. Nikiforuk (2008: 7) echoes this sentiment when he comments that CCS would significantly increase the operating costs for corporations who decide to implement this technology. He warns that relying on EOR to recover these costs is a mistake because these corporations will still be less profitable than those who forego the implementation of CCS technologies (Nikiforuk 2008: 28). By relying on economic discourses, these groups, in many respects reproduce the dominant and erroneous belief that it is possible to balance economic and environmental concerns.

While some groups use neoliberal discourse to oppose CCS, other groups, such as The Pembina Institute and First Nation groups, problematize the dominant idea that it is possible to balance economic and environmental concerns. These groups argue that this "balance" prioritizes economic concerns to the extent that it undermines the governments' ability to properly regulate environmental harm in the tar sands and, in turn, protect its citizens and the environment (Bowie 2004). The Pembina Institute (2009: 2) argues that EOR defeats the purpose of using CCS to decrease the level of carbon dioxide emissions in the tar sands since it allows tar sands corporations to extract more bitumen and produce more fuel which, in turn, generates more carbon dioxide emissions. Several First Nation groups contend that, instead of the economy, the state's top priority should be the health of the environment as it is essential to our existence (Bowie 2004).

The Pembina Institute (2009: 3) also contests economic discourses when it argues that the tar sands corporations that emit greenhouse gases, rather than the public, should pay for the implementation and use of CCS. In doing so, they claim that tar sands corporations should not have the right to externalize the costs associated with CCS and that the needs and rights of shareholders (i.e. to make money) should not take precedence over the best interests

of society. In this respect, some critics, such as Nikiforuk (2008: 5), insist that renewable energy is a better option than CCS because it can be used to meet energy demands, is cleaner than oil (e.g. it emits less and/or no greenhouse gas emissions), and is renewable.

Some environmental groups and researchers challenge discourse of scientism and, in particular the belief that it is possible to develop a universal technology that can solve all of our environmental problems. For instance, The Pembina Institute (2009: 1) contends that CCS should only be used temporarily until Canada (and the world) can permanently transition from using fossil fuels to renewable energy sources. Sawyer et al (2008: 18) echo this point and maintain that CCS is not a "silver bullet" but, instead, must be combined with improvements in energy efficiency and an increased reliance on renewable energy in order to effectively mitigate greenhouse gas emissions (Sawyer et al. 2008: ix). The IPCC (2005: 48) point out that a fully integrated process for capturing, transporting, injecting and storing carbon dioxide underground does not exist and most likely will not be developed before 2030. Although the IPCC ultimately gives into dominant discourses of scientism by suggesting that humans will eventually gain the knowledge necessary to solve our problems, others, including Nikiforuk (2009: 27) argue that by 2030 it will be too late to address climate change given that its effects will be serious and irreversible.

These counter-hegemonic voices also warn that CCS may cause more harm than good. This claim is, in part, because more infrastructures such as pipelines and factories, which cause their own forms of environmental damage (e.g. more of the Boreal Forest will need to be clear-cut, further disrupting the habitats of thousands of species and more natural resources will need to be harvested to develop and run these facilities.), will need to be built in order to support the use of CCS (Sawyer et al. 2008: 48). Nikiforuk (2008: 6) claims that

CCS technologies will use a lot of energy and, in turn, emit greenhouse gases, which is problematic given that these technologies are supposed to capture these gases so that they cannot enter the atmosphere.

Environmental groups and researchers assert that the criteria for how and when to address climate change should not necessarily depend on the consensus of scientific experts. Nikiforuk (2008: 5) maintains that we cannot guarantee that the injection of CCS underground will work, while Sawyer et al. (2008: 38) argue that we have no experience in monitoring injection sites or dealing with leaks. These counterhegemonic voices warn that the effects of CCS are unknown and could result in gas explosions (Sawyer et al. 2008: 38), the ground temperature rising to the point that poisonous heavy metals, such as arsenic, are released into the air and water (Nikiforuk 2009: 27), and several other repercussions that are specific to humans and animals (IPCC 2005: 34). Alarmingly, Nikiforuk (2008: 7) contends that it would only take 1% of continual leaking from the pore space for climate change mitigation efforts to be reversed.

These groups maintain that scientific knowledge should be informed by the values and experience of local citizens, such as First Nation groups, who have an intimate knowledge of the land (Bowie 2004). The Pembina Institute (2009: 3) argues that CCS should be approved by the public before it is implemented since it will affect them and the future of their families. Gailus (2012: 136) contends that as a democratic country we need to have an honest, open debate about the tar sands. He suggests that the public should be notified about all of the environmental harms that occur in the tar sands so that they can make informed decisions about the future of this development.

While these counter-hegemonic claims challenge the dominant discourses used by the taskforce documents, they do not in any way threaten the legitimacy of the state and, consequently, help reproduce the social order that allows for environmental harm, especially the emission of greenhouse gases, in the tar sands. I argue that, ultimately, their arguments, the questions they ask and the possibilities/solutions they put forward are limited by the very system they are critiquing (Devall 1982: 6). In particular, every group, except the First Nations, perpetuate "common sense" assumptions of anthropocentrism, neoliberalism, individualism and humanism. In terms of anthropocentrism, they evaluate harm from a human perspective, valuing the rest of nature in relation to human needs and capabilities and ignoring the range of harms that living beings experience as a result of the continued operation of the tar sands and the use of CCS. Accordingly, harm is still narrowly constructed in terms of the damage that the tar sands and CCS cause to humans, but has been expanded beyond economic concerns to include human health concerns.

These groups also do not challenge neoliberalism in any systematic way other than arguing that there are times of crisis that require environmental concerns to be prioritized over the economy. Also, other than saying that corporations should pay for CCS, they do not challenge the idea that corporations are necessary for society to operate or that the limited liability corporation must exist as it does. In this respect, there is little evidence of claims to scale-back production or even hold corporations responsible for their harms. In terms of individualism, these groups treat the emission of carbon dioxide as a single harm and do not acknowledge that the various tar sands practices, such as deforestation, have an accumulative effect and exacerbate climate change conditions. Also, they treat climate change as if it is isolated from other harms (e.g. tailing pond leaks, species extinction, and water pollution) in

the tar sands and, in turn fail to acknowledge that together these harms seriously degrade the environment. In terms of humanism, these groups forward the belief that humans can solve their environmental issues, therein ignoring the fact that the earth is an animate, unpredictable entity and that humans are unable to fully comprehend or control the environment. In the end, while there is evidence of counter-hegemonic claims regarding the tar sands, these voices were marginalized by official claims made via the taskforce reports and they failed to question the structural conditions that give rise to environmental harms in a modern capitalist society.

An Alternative Worldview

This section returns to my theoretical framework to consider my research results and offer an alternative understanding of harm in the tar sands that is informed by the concepts of hegemony and passive revolution and the values of deep ecology and social harm. The concept of hegemony helped us understand why environmental harm in the tar sands continues despite the concerns of several social groups. Within this context, the tar sands continues because the expansion of this development benefits the Canadian and Alberta governments (by strengthening their economy) and tar sands corporations (by increasing their profits) and is perceived to benefit the rest of Canadians (by supposedly raising their standard of living). The groups who benefit from tar sands activities have a vested interest in keeping the tar sands going, so to them it does not make sense to acknowledge or seriously address the harm caused by this development.

The concept of passive revolution illuminated why the Canadian and Alberta governments chose to focus their attention on climate change in the face of growing

international pressure and greenhouse gas-related stigma, rather than other, equally damaging environmental harms in the tar sands, which were not attached to such pressure. While this growing pressure threatened the legitimacy of the governments and, in turn, the profitability of the tar sands, other environmental harms, such as leaking tailing ponds, could be explained-away because the groups who expressed concern over these harms did not possess enough economic or political power to pose a threat to the governments or tar sands companies. As such, their concerns could easily be silenced or discredited. The concept of passive revolution also allowed us to see that the governments' choice of CCS to address climate change, because it is largely untested and more effective methods to reduce greenhouse gas emissions exist, is actually an attempt to reaffirm their own and the tar sands' legitimacy and, in turn, reproduce the current social order.

The social harm approach illuminated the ways in which the taskforce reports downplayed the seriousness of environmental harm in the tar sands and promoted the deregulation of the oil industry. In particular, it helped us understand how the ideological concept of crime enabled the taskforces to justify and/or explain away the disproportionate harm that marginalized social groups, such as the Athabasca Chipewyan, experienced as a result of tar sands activity. With dominant and mainstream definitions of crime lurking in the background, the taskforces were able to cite the lack of criminal practices in the tar sands as a means of downplaying the seriousness of environmental harm and forgoing legal interventions to prevent and/or address this harm.

Deep ecology helped us see that the taskforce documents were anthropocentric in that they assumed that tar sands corporations had the right to use (read abuse) the environment and other living beings in order to meet their own oil production and profit-related needs.

Deep ecology's adage of "simple in means, rich in ends" (Devall & Sessions 1985: 10) directed us to see that the taskforces narrowly defined environmental harm in terms of human affluence, which enabled them to prioritize the profitability of the tar sands and the strength of Canada's economy over the health of Alberta's environment. Deep ecology's values of holism and ecosophy helped us to see that the taskforces' narrow definition of environmental harm was reinforced by the use of scientism, which enabled the taskforces to erroneously claim that climate change was a technical problem that could be solved with the universal application of CCS technologies.

As I have demonstrated throughout this thesis, there is considerable harm, suffering and subjugation in a world informed by capitalist ideals, especially as it relates to the tar sands. This dominant worldview defines reality in a very particular way that benefits certain powerful groups, while the majority of living beings pay the consequences. This worldview is reinforced by discourses (such as those used by the taskforces) to reproduce this social formation and delegitimize options that threaten its reproduction. We need to remember that this is a human-created system, which means that our worldview does not have to exist as it currently does. That being said, it is important to explore alternative worldviews and social orderings to see that is possible to change (albeit over time, and not without resistance) the dominant worldview. One advantage of my theoretical framework is that it not only directed my analysis of the taskforce reports, but it also points to alternative worldviews and social orderings.

Imagine a society whose values and principles were informed by deep ecology and social harm, where every living being was not subjugated to or narrowly valued for their economic worth; species could meet their needs without interfering without having to reach

some mythical economic ideal; and, the community, not corporations, made the important decisions that would shape the future of the world.

If environmental harm was defined from this worldview, then the tar sands development would be conceptualized as an atrocity. Under this perspective, every living being would be equal and inherently valuable, which would negate the idea that humans are the superior species. This would challenge the legitimacy of the tar sands by opposing any human development that makes vast, detrimental changes to the environment to serve the purpose of one species. Furthermore, this perspective would downplay the importance of the economy (as this is a human invention) and, therefore, delegitimize any knowledge claims that are based on economic growth. Due to the sheer scale of environmental devastation the tar sands causes, it would be significantly scaled back or closed down all together as the overall health of the environment would be the priority.

In addition to this, humans and the environment would be viewed as interconnected, which would require us to be more cautious about how they interact with the environment. This would cause us realize that something as environmentally harmful as the tar sands not only has a drastic impact on the quality of the environment, but also on the lives of humans. If humans were seen as arational and the environment as an animate, powerful entity then we would realize we cannot predict the impact that something as massive as the tar sands development could have on the environment. This would make us realize that we cannot rely on technology to suddenly reverse decades of damage that we have inflicted on the environment and, in turn, would help us be more vigilant in how we interact with the environment.

Within this perspective, it would make sense to hold corporations (and their shareholders) responsible for the damage that they inflict on the earth. It would encourage us to study and appreciate the earth, rather than taking advantage of it and to be humble and more considerate of other species needs. Although criminalization and regulation may be a short term solution[62] to getting people to take environmental harm more serious, we ultimately need to question the structural features of society and the discourses that perpetuate this harm. Although this seems "idealistic" from our current worldview, there are already signs that people are beginning to take issue with the current social order and the impact it is having on the environment.

Hope for Future

We are at a pivotal moment in our history where environmental issues are taken more seriously and, as such, human practices that degrade the environment are subject to more scrutiny. As we have seen in this thesis, the tar sands have gained international notoriety for the sheer scale of destruction that it has caused to the natural environment. While the impacts of this development were previously unknown or underestimated, the growing international concern over climate change has shed light on just how harmful the tar sands is not only for Albertans, but for the world. Growing media attention and public awareness has resulted in a multitude of protests, and dozens of documentaries and TV specials on the tar sands' destructiveness. Although First Nation groups have been protesting the tar sands for decades, they are becoming more organized and governments are having a harder time ignoring their concerns. For instance, the Idle No More movement is gaining a lot of media and public attention. This movement was created after Attawapiskat chief Theresa Spence went on a

[62] By short term I do not mean in the next few years or even within the next decade. This change will be gradual and will face a lot of resistance from groups who benefit (or think they benefit) from the current social order.

hunger strike to protest the federal and provincial governments failure to fulfil their Constitutionally-mandated job to consult First Nation groups on matters that impact their treaty rights ("9 Questions About Idle No More" 2013, Jan. 5). This movement has spread across Canada and prompted demands that First Nation groups have a say in how their land is used.

In an unconventional, yet effective move, the Unist'ot'en group chose to resist the development of pipelines on their land by building a mini community (equipped with log cabins and food supplies to last them through the winter) in order to physically block any attempts to build pipelines and to prevent oil corporations from entering their property (Unist'ot'en group 2014). In a similar manner, Greenpeace has used its ships and manpower to block several coastlines so that oil corporations cannot ship their products (Louwe 2013, Oct. 16) and in Texas people protesting the XL pipeline have created barricades to prevent the development of these pipelines (Mosqueda 2014, Jan. 22). The government of Oxford, in addition to several other municipal governments, have even gone as far as to outright ban tar sands oil in their cities and towns (Uechi 2013, Jun. 27).

In a further attempt to protect the environment, the David Suzuki Foundation has launched the Blue Dot Tour, which is a nation-wide campaign that educates people about the environment and seeks to make access to a healthy environment a constitutionally protected right (David Suzuki Foundation 2014). It is evident that the resistance to the tar sands, and in a wider sense environmental destruction that results from capitalist production, is slowly gaining momentum. This thesis, which is grounded in the corporate crime and green criminology literature, brought attention to the environmental destruction associated with capitalist production by problematizing the structural features of our society and the

dominant discourses that perpetuate this destruction. In this regard it drew attention to the state's role in facilitating this harm through their inaction or misinformed policies. It is now our turn to demand a better, more sustainable future for the environment.

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