CANADIAN UNIVERSITY PRESIDENTS ON SUSTAINABILITY: DEFINITIONS, ROLES AND WAYS FORWARD

by

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Abstract

Increasingly, universities are being tasked with leading the way to a sustainable future. Yet little is known about how Canadian university presidents conceptualize sustainable development and the role of the university in this endeavor. With studies demonstrating that it is important for university stakeholders to share common understandings of sustainability, and that administrators are especially instrumental in the pursuit of a sustainable university, these stakeholders' perspectives and values around the concept of sustainability in higher education are significant.

This study, which included in-depth interviews with 26 Canadian university presidents, revealed that presidents have substantially high levels of eco-literacy surrounding the concept of sustainable development and understand sustainability in higher education in measures relevant to their jurisdiction. Barriers were primarily financial, although cost-savings through energy reduction was also noted as a benefit, along with it being "the right thing to do" and worthwhile because of its perceived significance to students. The piece ends with recommendations for practitioners of sustainability, policy makers, researchers and university administrators.

List of Abbreviations Used

AUCC   Association of Universities and Colleges of Canada

CBSM   Community Based Social Marketing

CCM   Constant Comparison Method

SHE   Sustainability in Higher Education

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For my brother John.

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Chapter 1: Introduction

Our learning institutions are being probed and examined in the wake of the
social, economic and ecological problems that unfold before us. "Are you
satisfied with your university experience?" the Globe and Mail asked its readers
in September 2012 followed by a full-page article on the issue (Anderssen,
October 7, 2012). In the same month, The Walrus discussed the shortcomings of
the university (Coates & Morrison, 2012), and the American Time Magazine
cover asked for a review of the American university experience (October 29,
2012). These articles all query the role that universities will play in our
individual and collective futures.

At best, our universities are thought of as places of ingenuity, research and
expertise, often playing a guiding role in communities through their research and
teaching. In many ways they are looked to for expertise during social challenges
as they are well suited to address problems through teaching and research, are
generally stable institutions accustomed to planning long-term visions, have
research and education as key facets of their operations, and tend to be receptive
to new ideas (Graedel, 2002). How the university manages the concept of
sustainability – a major social issue in the twentieth and twenty first century – is
an interesting and persistent challenge within the ivory tower. No doubt there are
signs of the significance of this issue as we come to the close of the United
Nation's Decade of Education for Sustainable Development, which spans 2005 –
2015 (United Nations, 2010) and Sustainability in Higher Education (SHE) is an
increasingly important, globally significant field of inquiry and public concern
with campuses proudly sprouting up "green" initiatives and "eco-friendly"
buildings.

The concept of "sustainability" is generally derived from the concept of
sustainable development, seminally defined in the Brundtland Report:
"Humanity has the ability to make development sustainable – to ensure that it
meets the needs of the present without compromising the ability of future
generations to meet their own needs" (World Report on the Commission for the

Environment, 1987, p. 27). The term has evolved through much debate and scholars have tried to create a pinnacle interpretation. More recently, however, in pieces like "Sustainable Development in a Post-Brundtland World", the recognition for scholars and practitioners to embrace a plurality of perspectives associated with the evolving concept has been applauded (Sneddon, et al, 2006). One such flexible and interpretable definition such uses the acronym "L.I.F.E." to remind us of Limitations of the biosphere, Interdependence of social and ecological species, Fundamental concepts and systems that must be altered, and Equity, locally and globally (Van Weenen, 2000), functioning more like a set of principles than a strict definition.

By extension, SHE could be described as "the process of reducing the multitude of on-and-off site environmental impacts resulting from campus decisions and activities, as well as raising environmental awareness within the human communities within a college or university" (Dahle & Neumayer, 2001, p. 141). Sustainability within a university setting can be thought of as an exercise in localizing and operationalizing the concept of sustainable development or sustainability.

Universities are encouraged for a number of reasons to become more sustainable. Some are inspired by altruistic goals set by keen campus leaders to implementing greater efficiency for fiscal purposes, while still others are cashing in on the popularity of the term (Wals & Jickling, 2002). Campuses can function as "living laboratories", effectively acting as a sort of microcosm of broader communities, demonstrating the principles of stewardship and conservation as well as using their research to "green" their own facilities based on the teaching and research expertise they incubate (Dahle & Neumayer, 2001). This wealth of resources makes them potential natural leaders in the global environmental movement, or as Graedel puts it: "if universities cannot define and implement sustainability within their own organizations, who else can be expected to do it?" (2002, p. 347). Yet despite their seemingly vast resources, institutions of higher learning struggle to incorporate sustainability into practice while maintaining their day-to-day priorities as research and teaching institutions (Hammond

Creighton, 1998). Each institution is unique in their priorities, facilities, funding, infrastructure, and management practices, and as such the road towards sustainability is marked with uncertainty, with each school left to work towards this goal individually, with varying levels of effectiveness.

Dahle and Neumayer (2001) point out that although a "green" campus may be a popular goal, it is no small task to achieve and there is no one correct path towards becoming a sustainable campus. There are a multitude of ways that institutions of higher education can move towards sustainability, including through management, planning, development, education, research, operations, community service and outreach, purchasing, transportation, design, new construction, renovation, and retrofits (Van Weenen, 2000). As the goal of sustainability becomes broader and encompasses more of these options, it has greater potential to make for a truly "green" campus, but sustainability also faces more difficulties, perhaps the foremost being interpreting the concept itself. "Sustainability" can constitute a myriad of ideas and approaches, but having some shared understanding of the term among stakeholders is important for effective application (Bracken & Oughton, 2006). When it remains a vague concept with multiple meanings, sustainability becomes an intangible goal, as neither the mission nor whether or not success has been achieved, are ever quite clear.

An individual's environmental knowledge and attitudes can help predict whether or not they will engage in "pro-environmental" behaviour (Deurden & Witt, 2010), and addressing the obstacles to participating in positive environmental behaviours requires a deeper understanding of the barriers and issues specific to a community (McKenzie-Mohr & Smith, 1999). Yet little is known about how stakeholders, such as university staff, faculty, students and administrators understand the term sustainability (Wright, 2010) despite the fact that the term is increasingly employed by all levels of stakeholders in the university community (Sherman, 2008). Research shows that for sustainability initiatives to be successful in higher education, it is essential to have the support of high-level administrators (Filho, 1999; Michell, 2011; Hammond Creighton, 2001), making

it particularly significant to document and understand senior administration's understanding and conceptualizations of sustainability. Scholarly understanding of university stakeholders' conceptualizations of sustainability, particularly in a Canadian context, is currently under documented in the SHE literature (Emanuel & Adams, 2011; Wright, 2010).

In order to begin to address this gap, the key research question of this study was: how do a cohort of Canadian university presidents conceptualize the following: (1) sustainable development; (2) sustainable universities; (3) the role universities play in achieving a sustainable future; (4) key issues facing the university; and (5) the barriers to implementing sustainability initiatives on campus? The primary objective was to address this research question and in doing so fill a significant gap in literature while providing rich data for sustainability practitioners. The secondary objectives were to better understand the roles and circumstances surrounding Canadian universities and their presidents to analyze participant responses in a meaningful context, and to engage university presidents in a dialogue concerning the role of universities in promoting global sustainability. Finally, the findings were also shared with key stakeholders, including university presidents, sustainability practitioners and government officials, engaging major stakeholders in a dialogue in addressing this important issue at the Canadian university level.

In order to situate and engage meaningfully with the data collected through semi-structured qualitative interviews with Canadian university presidents (N=26), some background of the university within a Canadian context is necessary. What follows is a brief review of the major historical and policy factors that have shaped Canadian universities, as well as a peripheral examination of the role of the university in today's society and the university president's role within the overall system. This chapter concludes with an overview of the research methods used to collect and analyze data for this study and an explanation concerning the structure of this thesis.

1.1 Background

Participants' responses are best understood in the context of the history and policies surrounding universities, as well as a discussion of the role of both the university and presidents within it. This section discusses the Canadian university experience, including significant historical and policy factors, the much-debated role of the university as well as the role of the president, and concludes with an illustration of the demographics of Canadian universities and their presidents.

1.1.1 The Canadian University Experience

As is the case with Canadian culture, geography and politics, the Canadian university experience bears similarities to its American and Commonwealth counterparts, though with some important distinctions. In the case of Canadian universities, this is primarily a lack of national governance body and funding sources at both the provincial and federal level (Paul, 2011). Rarely explored in SHE literature, the history, policies and financial structures of Canadian universities have bearing on the decisions administrators make in regards to sustainability initiatives.

Canada has the second largest landmass of any country in the world with just shy of 35 million citizens, though most are concentrated near the American border in southern Ontario. Of course Canadian universities, like Canadian culture, draws its influence both from the United States as well as its French and English roots and commonwealth counterparts. Perhaps the country itself can be best described as "a country of subtle nationalism, of bilingualism and multiculturalism. It is a country where constitutional reform, like keeping warm, appears to be an annual pastime" (Jones, 1997). Reflective of this, a significantly decentralized educational system is a consistent feature of Canadian schools with Canada being the only federated country without an office or minister of education (Paul, 2011) though federal influence plays out significantly in several ways. A multitude of federal and provincial policies in the past hundred years

have had particular influence on how Canadian universities have evolved to this day.

Universities in Canada were officially formed after Canadian federation, with the first institutions established in Nova Scotia, New Brunswick, Quebec and Ontario. The British North America Act of 1867 set up a parliamentary system following British tradition, where members of the House of Commons are elected by citizens, with each representative holding a geographic jurisdiction, the majority of which represent a political party (referred to as Member of Parliament (MP) at the federal level and Member of Provincial Parliament (MPP) for the province). Section 93 of this Act granted official jurisdiction of universities to the provincial authority, which in many ways makes sense within a country as geographically and culturally vast as Canada – a decentralized approach allows policies and studies to be tailored to these aspects appropriately, allowing them greater autonomy. However, this means there is no one Canadian university experience, as each province has its own unique history and related policies.

Disadvantages of this decentralization include a lack of standardization and accreditation, making the universities less competitive on an international profile (Jones, ed., 1997). Additionally, as was found in the undertaking of this study, significant data about Canadian universities is not currently compiled making it difficult to track or measure any significant changes. Many provinces guard their educational jurisdiction carefully, as it is closely related to their provincial identity, culture, language and politics (Jones, ed., 1997), and while this may be appropriate and reflective of Canadian culture, creates a tenuous approach within and outside the university when it comes to creating an institutional identity.

Most reflective of these tensions, and particularly relevant to this study, would be funding of the universities. The provinces are the university's primary financial resources (Coates & Morrison, 2011), though as you can see from Table 1 this varies greatly from one province to the next. This resource, combined with tuition fees, covers the majority of operations (Coates &

Morrison, 2011). The federal government, however, is the primary research funder, a contentious role with a historical context.

Province	Public funding for universities, per student
Alberta	$22,469
Saskatchewan	$18,067
Newfoundland and Labrador	$16,169
Manitoba	$13,860
Nova Scotia	$13,552
Prince Edward Island	$13,209
New Brunswick	$13,114
Canada (national average)	$12,500
British Columbia	$12,342
Quebec	$12,006
Ontario	$9,718

Table 1   Public Funding Figures for Canadian Universities, Per Student
(2007 – 2008) (From: Coates & Morrison, 2011, p. 179)

Both WWI and WWII had a profound impact on the relatively new Canadian universities. These institutions were much younger than universities in other countries and perhaps much more malleable and vulnerable in times of significant social upheaval. In the wake of the First World War, government and business leaders were persuaded to invest in research in order to compete internationally with the war effort, as well as with the anticipated post-war recovery (Jones, ed., 1997). Thus, the National Research Council was established in 1916, offering major universities grants and scholarships in exchange for spearheading these research efforts, and marking a considerable moment where the federal government became entangled in guiding the priorities of the university, which had previously been predominantly a provincial role. When the Great Depression of the 1930s came and job creation

was top of mind, this pattern continued and a student loan program was created (Jones, ed., 1997). During WWII and the post-war years, university leaders (though perhaps more particularly in English-speaking Canada) actively lobbied for the federal government to play a more intense role, seeking to add a sense of permanence to the increased capital and involvement which had allowed Canadian universities to expand their repertoire, number, size and credibility in a short period of time.

Through a federal instigation to reintegrate returned soldiers through the university system, Canada's post-war enrollment more than doubled the enrolment of the pre-war era (Coates & Morrison, 2012). In the 1960s and 1970s the Canadian economy began to transition from primary industries, such as manufacturing, towards service and middle management, and there was a rapid expansion of universities (Coates & Morrison, 2012) as the baby boom generation came of age and prepared for a new work force. Existing institutions doubled, tripled and even quadrupled in enrollment, and new institutions were rapidly established across the country (Clark, 2003). The federal government reorganized its granting councils to reflect the changing times in 1977 restricting the Canada Council to fine and performing arts and creating the Natural Sciences and Engineering Research Council and Social Sciences and Humanities Research Council (Jones, ed., 1997). Together with the Canadian Institute of Health Research those councils are the tri-council structure that still exists to this day.

This golden age of increased resource support for universities, however, is long gone. Budget cuts and restrictions have immensely impacted Canadian universities, particularly within the past two decades (Canadian Federation of Students, 2011). With almost all provinces reducing funding to their universities and students wildly protesting tuition hikes (as demonstrated by the heavily documented student protests in Montreal and other places in 2012), all Canadian universities are struggling to find new sources of revenue and reduce expenditures, which frequently includes attracting international students, increasing class size and other measures that keep costs down but also

jeopardize the overall student experience and the reputation of the institution (Coates & Morrison, 2011). Complicating the matter, though funding issues are common across Canada, they are certainly not distributed equally. The province with the largest number of universities, Ontario, actually ranks in the bottom position in the country for funding per student (Coates & Morrison, 2011) (See Table 1). These allocations are related to federal equalization payments, distribution of tax revenue, and of course are also reflective of government priorities. Combined with other policies and attitudes at the federal and provincial levels it makes for complicated and tense terrain, which continues to be one of many debated issues of government involvement (or lack there of) in the academy.

1.1.2 Portrait of the Canadian University

At the heart of this research, and deeply relevant to today's increased discussion about universities worldwide, is what the role of the academy is and ought to be – a question to be explored, rather than answered. Articles in Canadian media like the Globe and Mail (Anderssen, October 7, 2012) and The Walrus (Coates & Morrison, 2012) discuss the Canadian experience specifically, while others, like a major article in Time Magazine (October 29, 2012 Issue) reflect that this very point is of international concern. Demonstrating the evolving role of the academy in Canadian society, business and industry play an increasingly significant role in determining institutional priorities as university training is increasingly focused on business-related skills or technical skills and less on a liberal education (Coates & Morrison, 2011). This is partly a reflection of pressure to couple a degree with gainful employment, as well as reflective of funding preferences that prioritize technical outcomes and other priorities set by the federal granting committees. Intensifying this influence, governments often require matching funds from business to secure funding for operational projects (Coates & Morrison, 2011), imperative for university expansions and upgrades to facilities and programming. In general, this pattern is focused on job creation and communities in turn look to the academy to produce graduates trained for

the working landscape in Canada and to help drive industry (Coates & Morrison, 2011).

The emphasis within a university education on skills and job training marks a very significant departure from the centuries-old tradition of the university, which was traditionally a place of higher learning, philosophy and inquiry rather than a training or technical institution. This has potential implications for how the university and communities they exist in function. University professors from the 1960s and 1970s, for example, were rooted in the language and experiences of revolution and protests, reflecting and creating the liberal idealism of the time (Kerr, 1993). Universities have been the birthplace of several important movements – from gender and race issues to the free speech movement – all which permeated the broader cultural fabric of society (Cohen & Zelnik, 2002; Kerr, 1993). Though it is understandable that these institutional priorities might change, what, some ask, does a university whose priorities are set out by our economic and business structures produce? Certainly it is not difficult to see that as institutional priorities change and these values are rewarded with financial compensation, momentum for social and environmental change could be significantly impacted.

At the same time as the university's trajectory is increasingly geared towards a place of technical and business training, universities are still (and perhaps increasingly) tasked by their governments and communities to foster local economic development, train graduates for the workforce, respond to new social issues, commercialize research to support industrial growth, support cultural and artistic growth, encourage and cultivate civic engagement, and represent regions and the nation on a global level (Coates & Morrison, 2011). With the many issues the Canadian university is tasked with addressing, it is perhaps understandable that addressing a complex and multi-faceted issues like SHE can be a struggle at many institutions.

The Association of Universities and Colleges of Canada (AUCC) has granted accreditation to 85 universities in Canada, 64 of which are English-language

schools (see Appendix 1 for a list of AUCC-certified English-language schools). Some general data of the total composition of Canadian universities as compared to study participants can be found in Appendix 2. Geographic representation of study participants was almost identical to the total population of English-language schools, though a higher proportion of Atlantic schools participated in the study, most likely due to their proximity to Dalhousie University where this study was based. There was also similar representation of universities based on the year they were founded as to the total population as well as signatories of the international sustainability declaration for universities and colleges, the Talloires Declaration.

1.1.3 Portrait of the Canadian University President

A central president, or principal (referred to, for the purpose of this paper, collectively as presidents) is the central administrator for each of the 64 English-speaking universities in Canada (note: there is one known exception of a university run by co-presidents, though at the time of writing this thesis this university will have been absorbed under the umbrella of another institution). This group is rather homogenous, demographically speaking, with one participant even rather frankly and jokingly referring to it as a club of "old white men." Appendix 3 captures some basic demographic information about presidents who participated in the study. For instance, 84% of participants were male; there was a variety of academic backgrounds represented by presidents although the highest concentration was in the arts (52%) or math and science (24%); and about equal proportion of presidents had been in their position for between 1 to < 3 years (24%), 3 to < 5 years (28%), or 5 to < 10 years (24%).

While the role of the institution may be a much-debated affair, the role of the university president is, at least formally, more straightforward though perhaps not thoroughly understood. The Duff-Berdahl Commission of 1966 outlined the governance structure of universities in Canada, including the roles of the Board of Governors, Senate, and other members of the academic community (Clark, 2003). This and other pieces of legislation have tempered the power of a sole

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individual like the president with that of faculty and students, making for what some might call a more bureaucratic process, though also more democratic. In this way a president of a Canadian university is far more restricted than presidents in the private sector or even other universities worldwide. Faculty and staff have significant input over the creation and formation of new programs as well as the hiring of administrators (Clark, 2003), which is relevant in later discussions of how SHE is implemented on campuses. Understanding that the power and decisions made by a university president are tempered with input from various stakeholders within the academy, somewhat limiting their role compared to their counterparts in private industry, will help us understand the parameters of their contributions to SHE.

Generally speaking, then, the primary role of the President is as an administrator, though they also act as a figurehead, create institutional priorities and cultivate a strategic plan, manage the financial aspects of the institution, foster stakeholder engagement, promote a brand or reputation for the university, manage faculty and staff and provide leadership and day-to-day administrative duties including reporting to a Board of Governors and Senate (Paul, 2011). While no doubt they are leaders within the community, understanding that their roles are constitutionally limited is a significant point in understanding their interactions with SHE. Further, Paul notes in his book Leadership Under Fire: The Challenging Role of the Canadian University President, that these administrators tend to employ transactive more than transformational leadership, another significant point to keep in mind when considering the findings of this study.

1.2 Research Project

This section details the research approach used, conceptual lenses applied, data collection and analysis methods, and structure of the thesis.

1.2.1 Research Approach

The methods for this research were created from the research objectives stated in Section 1.0 and reiterated below:

1. To address the research question: How do a cohort of Canadian university presidents conceptualize: (1) sustainable development; (2) sustainable universities; (3) the role universities play in achieving a sustainable future; (4) key issues facing the university; and (5) the barriers to implementing sustainability on campus?
2. Gain a fuller understanding of the experiences and roles of Canadian universities and their presidents to contextualize participant responses.
3. Engage university presidents in a dialogue about universities and sustainability.

Through these three objectives appropriate methods emerged, as well as drawing from a pilot study by Wright (2010), who interviewed a smaller pool of participants, restricted to those who had signed the international Talloires Declaration (N=17).

The process used in-depth, semi-structured interviews with the use of two checklists that allowed participants to engage with specific details and concepts. The checklists include popular conceptions on sustainability taken from both popular media and academic journals (outlined in the pilot: Wright, 2010). These particular concepts allow presidents to either agree or disagree that it is a component of their own conceptualization of sustainability. All interview materials met the requirements of the Dalhousie University Ethics Review Board and were approved without revision. Data pertaining to both the university and the president from each university were collected to look for any significant patterns between findings and these phenomena and to aid to the currently under-documented literature on a profile of Canadian universities and their presidents. The use of qualitative data analysis software (N'Vivo 9) aided the process. Analysis used the constant comparative method (CCM) (Glaser & Strauss, 1967), outlined in more detail below, to develop an inductive thesis, rooted from within the research questions.

1.2.2 Conceptual Lens

Methods are not a given in research practice, they are, in fact, "constructed by researchers from their perceptions and experiences in interacting with the phenomena studied. Thus, quantitative and qualitative data are both created by means of the particular conceptual 'lens' used by the researcher" (Maxwell, 2011, p. 477). Several conceptual lenses guided the analysis and methodological approach of this work. To begin with, I situate this work within a constructivist paradigm, meaning that rather than any of these interviews being analyzed as a static or end-truth, they can be more appropriately described as a snapshot of one of several truths from the lenses in which the researcher applies (see: Jonassen, 1991). From a grounded-theory approach, where CCM has its roots, theoretical insights come from the data itself rather than any hypotheses or pre-conceptions (Bloor & Wood, 2006). This is a specific research paradigm that promotes the thesis deriving from *within* the data through extensive coding and constant comparison of data to unearth a number of themes, until the point of data saturation has been reached, where no more major themes present themselves (Bloor & Wood, 2006; Glaser & Strauss, 1967; Seale, 1999). However, as opposed to traditional grounded theory techniques where coding begins completely open, the research questions served as themes guiding the analysis, and subsequent codes were added based on frequency and depth of responses. In this way, the data were mined to specifically address the research question and objectives and could more accurately be described as a grounded approach rather than strict grounded theory.

The framework for the secondary goals, understanding and engaging the research participants, is entrenched in the community-based social marketing (CBSM) concept that effective tools for behavioural change cannot be cultivated until a population or cohort, and their actual perceptions of barriers and benefits around that activity, is understood (McKenzie-Mohr & Smith, 1999; Andreasen, 2006). Collecting basic information about the population, including demographic information, is a logical point of departure. Currently, this baseline understanding of the cohort of Canadian university presidents is completely overlooked in the literature. An exhaustive search of the peer-reviewed and grey

literature suggests that baseline understanding of this stakeholder group's perspective is virtually non-existent.

Finally, the research attempts to incorporate the participants as research allies to help increase their investment in campus sustainability initiatives, based on similar successful work in adjacent fields. For example, in their 1977 study, Regan & Fazio found that direct experience produces an attitude that is "more clearly, confidently, and stably maintained than an attitude formed through more indirect means" (p. 28). By participating in a conversation about SHE this research also offers university presidents the opportunity to consider sustainability, their attitude towards it, and their institution's current practices.

1.2.3 Data Collection and Analysis

Participants were recruited from English-speaking AUCC-accredited universities (N=64) (see Appendix 1: List of English-Language AUCC-accredited universities). French schools were not included in this study as I am not fluent or Francophone, and due to the politics of language and culture in Canada it would only be appropriate to offer a French-speaking interview to participants. Translations could have been offered, but were determined inappropriate and impractical given the significance of language and meaning around several terms (for example: the term "sustainability" has multiple connotations, and there is no way to capture these distinctions consistently without one consistent investigator for transcription and analysis). Being phone interviews, it would have also been difficult to arrange for a translator to be present during these conversations. Additionally, one of the study goals was to use these interviews as a point of reflection for the participants and allow a flow of conversation, and the presence of a transcriber could impact the flow of the interview. Thus, recruitment was restricted to the 64 English-language schools for this study.

Because this is a relatively small population and the objectives of the research include beginning a dialogue at the stakeholder level about campus sustainability, all participants were given the equal opportunity to participate

rather than limiting participants to a representative sample. This approach deviates from the grounded approach where the researcher stops data collection at the point of data saturation.

Participants of this study are considered an elite population, defined by Stephens as a social position relative to the researcher or the average citizen (2007). As such, a letter of introduction to the study was sent from Dalhousie University President Tom Traves to all potential participants (Appendix 4: Recruitment Letter), which follows Mikecz's (2012) directions on gaining access through the customs, norms and values of an elite group. The tone of the letter emphasized a research partnership, and was meant to increase the perceived validity of the study by having it introduced by a peer, as well as position the potential participants as research "allies" instead of subjects (as outlined by Witz, 2006). Of the 64 possible participants, 26 university presidents participated in the interviews. The remaining population did not respond to either an initial invitation or follow-up call or offered a polite decline due to scheduling.

From a constructivist stance, the structure of an interview and environment creates, shapes and forms the content that emerges from it (Holstein, 1995), making a thoughtful construction of interview materials and processes imperative. For this study, interviews consisted of three portions: gathering baseline demographic information (see sections 1.1.2 and 1.1.3), a semi-structured interview (see Appendix 5: Interview Guide), and the administration of two checklists of sustainability concepts: participants were asked to identify in a binary fashion which themes they related to the concept of sustainable development and a sustainable university, respectively (see Appendix 6: Checklist 1 and 2). The use of the checklists was intended to help substantiate the interview findings and describe more accurately the strong areas of consensus or deviation by giving participants concepts and ideas to engage with. This is particularly important in studies where results are politically sensitive; the checklists are useful to ensure that findings cannot be easily dismissed as anecdotal or subjective by critics (Maxwell, 2011) and necessarily require more than a "textbook answer" from participants.

In this research, the use of the checklists are what Becker (1970) coined "quasi statistics": the use of simple counts of things in qualitative research to bolster more vague terms such as "many", "few", "several", etc. Doing so also helps the researcher easily recognize patterns in the research coding and analysis stage (Maxwell, 2011). The checklists were developed by Wright (2010) through a systematic review of approximately 1,800 publications (both academic and popular print media) related to sustainable development and sustainable universities, and include current thinking as well as what are considered common misconceptions about the term. Participants in this study were also given the opportunity to add their own items to the list.

Given the geographic constraints of doing research in a country as large as Canada and the limited time available to complete the research, compounded by financial constraints, performing face-to-face interviews was largely impractical. Moreover, because the study includes an elite population scheduling interviews was a challenge and visiting each participant would be unnecessarily taxing and impractical when time could be better spent on analysis and coding. Mikecz (2012) also suggests that a neutral position that overcomes any of the prestige attached to the elite interviewee is most methodologically appropriate, making telephone interviews quite ideal. Though traditionally treated with skepticism by researchers, telephone interviews have proven to be a reliable and practical method that produces nearly identical results as face-to-face interviews (Sturges and Hanrahan, 2010). Once interviews were complete they were transcribed using a denaturalized approach, where excessive stutters and pauses were removed and transcriptions were standardized in order to make for fluid analysis and in order to return to participants (Oliver, Serovich & Mason, 2005). I transcribed the interviews and then listened to the recordings while reading the transcriptions for accuracy. Participants were given an opportunity to review their transcripts for accuracy though all declined.

As previously mentioned, coding was conducted using CCM with the aid of the software program N'Vivo 9. By categorizing, coding, delineating and

connecting categories, the researcher is able to inductively produce a theory through a comparative process aimed at discovering patterns and themes (Boeije, 2002; Tesch, 1990). In CCM the concept of saturation is the point at which no new information or illumination is uncovered by a new case (Boeije, 2002; Bowen, 2008). The coding process included three phases: (1) open codes; (2) axial codes; and (3) selective coding. Open coding is a process of breaking down, examining and categorizing data, where several major codes were established. In this phase I documented any emergent theme, which resulted in a large number of codes. At this point, I grouped relevant codes together in categories and subcategories. For example, "funding policies" might be a subcategory of both "policies" and "financial issues." Axial coding aims to get at the essence of the data, and is often described as "conceptual categories", moving from description to interpretation – in this phase the research objectives and questions helped organize, sort and prioritize these codes. I used the objectives of my study to group the responses and codes meaningfully under each objective of my study. Finally, selective coding can be thought of in terms of explanation, creating core categories central to the themes of the data (Bowen, 2008). In this round, I re-examined the codes, how I had organized them, and how they made sense in relation to both the original interviews and objectives of the study. This approach was applied to each line, sentence, and paragraph, adding to the thoroughness of the method. See Appendix 7 for a summation of categories produced in each coding phase.

Incorporating findings from the checklists and demographics collected into the analysis was a significant undertaking. The data were collected and organized into separate tables. From here, with the aid of N'Vivo 9 software, queries were made to see if any noticeable patterns existed from the major themes of the interviews and any of the demographic information collected about the universities or presidents to identify any potential patterns. Next, the checklist results were queried in a similar fashion to look for areas of major consensus and deviation amongst participants, as well as any other significant findings. The use of numbers in qualitative research has been controversial particularly since the "paradigm wars" of the 1970s and 1980s, though with some thoughtfulness these

data can help discern and demonstrate "regularities or peculiarities" (Sandelowski, 2009). Therefore, describing and counting the results of the checklists does not constitute what is popularly described as using multiple methods, but rather a confirmation of what has already been described through the interviews, a qualitative process.

1.2.4 Structure of the Thesis

This thesis has been structured using a "multiple papers" format. Thus, the next two chapters are structured as their own stand-alone manuscripts with corresponding citation lists. Each manuscript has been submitted for peer-review to academic journals.

Chapter Two is an overarching discussion of the major findings of this study, including Canadian university presidents' conceptualizations on sustainable development, sustainable universities, key issues facing the university and the role of the university. It synthesizes the major findings and offers key strategies and recommendations.

Chapter Three begins with a summary of the key issues facing Canadian universities as identified by university Presidents, and an exploration of barriers and benefits facing those striving for sustainability within the academy from the perspective of participants. Recommendations for research and practice is included as well as a discussion of CBSM, environmental psychology and other conceptual approaches that could be applied to this study's results. The focus of the paper is moving from science to policy and practice.

Chapter Four, the final chapter, encapsulates the findings of the study, demonstrates potential uses, and makes recommendations based on the data and literature review.

This thesis was a modest step to apply new conceptual approaches like CBSM and other social psychology perspectives to SHE research. Rather than

completely absorb the plethora of perspectives within the research about behavior, values, education and other factors relating to sustainability, these primarily informed the recommendations for further research and were incorporated into the data collection of understanding the demographics and circumstances surrounding Canadian universities and their presidents. Specific recommendations for such, as well as practical ones, are in Chapter Two and Three respectively and summarized in Chapter Four.

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Chapter 2: "A Robust Conversation": Canadian University Presidents' Conceptualizations of Sustainable Development and a Sustainable University

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Student Contribution Statement: *I acted as primary researcher for this study, interviewing participants, analyzing responses and constructing the discussion and recommendations based on the literature reviewed and interview content.*

Abstract:

University presidents are important stakeholders within higher education; their leadership extends beyond the academy into the local community and can even reach the scale of global impact. Yet little is known about how Canadian university presidents conceptualize sustainable development and the role of the university. With studies demonstrating that it is important for university stakeholders to share common understandings of sustainability, and that university leaders and administrators are especially instrumental in the pursuit of a sustainable university, these stakeholders' perspectives and values around the concept of sustainability in higher education are especially important. While few studies to date have engaged this level of academic leadership, even fewer have drawn from successful social-psychology tools such as CBSM framing to contextualize results in the form of meaningful recommendations.

This study, which included in-depth interviews with 26 Canadian university presidents, revealed that presidents do have high levels of eco-literacy surrounding the concept of sustainable development and understand

sustainability in higher education in measures relevant to their jurisdiction. However, they are also largely preoccupied with the financial state of their institutions, which somewhat puts them at odds with acting on sustainable initiatives as they fit into their conception of the term. Combined with a review of contemporary sustainability in higher education literature, recommendations are made, respectively, for federal and provincial policy-makers, university administrators, sustainability practitioners and advocates, and researchers to incorporate sustainability more strategically in Canadian universities through financing, policy and research.

2.0 Introduction and Background

The magnitude, pervasiveness and interconnectivity of contemporary environmental problems cannot be easily ignored by any government, industry or organization – a global spotlight has shone light on these issue for several decades. Yet despite increasing awareness of these problems, a plethora of environmental perils have also increased. Sustainable development emerged as a response to such concerns in the seminal 1987 Brundtland report: "Humanity has the ability to make development sustainable – to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs" (p. 27). The flexibility and malleability of the definition in theory has allowed the definition to be woven into the context of different governments, business, industry and projects (Kates, Parris & Leiserowitz, 2005), yet naturally also opens the door to misinterpretations or shallow interpretations.

A natural progression from sustainable development, SHE can be traced back to the early 1990s, when academics like David Orr began to recognize the role universities and colleges could play in leading a path to social and ecological sustainability (1991). As places of ingenuity, research and expertise, universities are often looked to in times of social upheaval and uncertainty for guidance, knowledge and leadership, making it an obvious extension that universities have been called upon to lead a path to a sustainable future (Graedel, 2002; Wright,

2010). After all, they are well suited to address problems through teaching and research, are generally stable institutions accustomed to planning long-term visions and tend to be receptive to new ideas (Graedel, 2002). But with each campus different in its size, scope and priorities and so many touting "green" activities, it becomes difficult to assess where universities are doing well and where more shallow attempts are mistaken as meaningful. There is also debate about where the university should put its focus on sustainability within the "holy trinity" they operate within of research, education and practice (Krizek, Newport, et al, 2011).

The connection between education and environment is so well established that the United Nations created the Decade of Education for Sustainable Development, 2005 – 2015 (United Nations, 2010). During this time, 56 Canadian universities were working with the Canadian Sierra Youth Coalition as of 2008, 26 reporting having a sustainability policy and 32 having sustainability coordinators (Brinkhurst, Rose et al., 2011), and a 2010 Princeton Review found 64% of students reported a college's commitment to environmental issues would influence their decision on what school to attend (Moran & Tame, 2012). But if sustainability in higher education is like sustainable development, it too "may be more significantly defined by practice than narrative" (Kates et al., 2005). So it is natural that much attention has gone into measuring and examining sustainability indicators in universities, with self-reporting tools like the Sustainability Tracking and Reporting System (STARS) (Association for the Advancement of Sustainability in Higher Education, 2012), yet one very telling indicator seems frequently overlooked – the values, experience and context that surround the conceptualizations of sustainability on campus. When sustainability is analyzed from this lens, we can see how sustainability moves from a broad idea like that of Brundtland's sustainable development, to a localized practice.

In this study, 26 Canadian university presidents participated in semi-structured interviews about their conceptualizations of sustainable development, sustainable universities and key issues facing the university. If we are to

facilitate behaviours and practices that will create sustainable universities, according to social psychology literature (as will be discussed in section 2.0.1) we must first understand the current thinking university stakeholders have about them. This approach informed the analysis of participant responses to illuminate the challenges and opportunities they encounter and help understand how to progress towards positive environmental behaviours in a university setting.

2.0.1 Social Marketing and Framing as a Conceptual Lens

While there is a plethora of prescriptive literature defining how universities engage with sustainable behaviour, there is far less that examines how stakeholder groups conceptualize the term to begin with (Wright, 2010). Further, stakeholder interpretations of sustainability in higher education are more frequently analyzed in the context of an ideal of the pinnacle sustainability in higher education interpretation, rather than in the participants' experiences, values, contexts and jurisdiction. While the former functions as a yardstick to measure how well universities are implementing sustainability in higher education concepts, it offers limited insight into the reasons behind any restricted interpretations, challenges or, on the flip side, excellent or more holistic interpretations.

CBSM is an approach whose proponents argue that in order to facilitate a behaviour change we first have to understand the context specific to the group of people whose behaviour we are trying to change (McKenzie-Mohr & Smith, 1999). This means we cannot discuss all stakeholders in the same manner, but rather we have to group them into communities that share similar experiences, barriers and potential benefits associated with the issue (McKenzie-Mohr & Smith, 1999). This concept can be applied to sustainability in higher education, except that CBSM is meant to target specific behavioural issues rather than larger concepts like sustainability in higher education. To counter the specificity issue of CBSM we can draw from concepts used in the field of linguistics. For example, framing, which is the idea that all words, phrases and concepts evoke a collection of images and ideas (Lakoff, 2004), can be used as a tool of analysis

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to help us understand the attitudes presidents have about sustainability in higher education based on the way they frame these topics. Rooted in discourse analysis scholars like Foucault and Fairclough, thinking of the frames that surround the sustainable development and sustainability in higher education discussions can help us understand how the definition is being employed, and how the topic can be re-framed to encourage greater sustainability in higher education.

Finally, this research is also catalytic, in that the act of participating in the interview – and knowing colleagues across the country are doing the same – can be seen as an exercise in self-reflection and has the potential to encourage pro-environmental behavior. This inspiration is taken from a recent article from Moran & Tame (2012): "No matter what the impetus, once awareness is sparked, education can be deepened and ownership taken; then, opportunities for sustainable actions abound" (p. 235). For a full interpretation of SHE, considering all ecological, social and economic implications, can seem like an overwhelming endeavor, but in many ways schools have already begun the journey and should be encouraged in their striving.

If we are to use participants' context and frames to understand how they interpret and operationalize the concepts of sustainable development and sustainability in higher education, and view them as active participants in this dialogue, then a brief review of the experience and history of Canadian universities and politics relevant to this discussion, and the role and jurisdiction of a Canadian university president are necessary to contextualize participant responses. This helps to highlight the opportunity Canadian universities could have in interpreting sustainable development, and also the formidable challenges facing them, which should lend insight for sustainability practitioners who have limited potential to implement sustainability in higher education without understanding the position and issues facing administrators (Creighton, 1998).

2.0.2 Canadian University Presidents: Incredible Potential, Incredible Pressure

Canada's one-time reputation as an environmental leader has been somewhat tarnished by Canada recent backing out of international climate agreements, including, for example the Kyoto Accord (Pembina Institute, 2012) and the international concern over the Alberta oil sands and Key Stone XL Pipeline (Murray & King, 2012). These issues contribute to the domestic and international reputation of the country, and if universities are to be a contributing institution to the communities they exist in, then the university has a large role in the Canadian environmental conversation. Yet the significance and role of the Canadian university is increasingly questioned (Anderssen, October 7, 2012; Coates & Morrison, 2012; Leger, Feb 18, 2013), as the Globe and Mail title of Anderssen's article (*Can Canada's Schools Pass The Next Great Intelligence Test?*) stands as a testament.

Canada has the second-highest rate of enrollment in post-secondary education in the world (Coates & Morrison, 2011), and the role of the university can go beyond strict student education to a contribution to societal values by acting as leaders in research and thought. A vast country built on regionalism, combined with a lack of national governance for Canadian universities, means there is no unified "Canadian university" experience, which is fairly unique compared to Canada's global counterparts – most countries have unified national standards for their institutions of higher education (Paul, 2011). Similarly, there is no unified interpretation of sustainable development (Kates et al., 2005) and a myriad of approaches to sustainability in universities. SHE has some potential to bridge the Canadian identity crisis and environmental politics by giving these institutions an opportunity to demonstrate their skills and capacity as leaders, researchers, educators and political actors over a major domestic and international crisis. At least through the "greening" of their own campuses they can showcase the potential for other communities to function more sustainably. Though there are many initiatives that universities could use to demonstrate their skills and capacities, the multi-faceted nature of sustainability and the

number of schools increasingly incorporating it into their mandates makes it a natural challenge for Canadian universities to rise to.

Canadian universities are structured somewhat uniquely to their American and Commonwealth counterparts. The provinces are the university's primary financial resource, though funding levels vary dramatically from one province to the next, with provinces granting $9,718 to $22,469 of funding per student according to data from Statistics Canada (2007-2008). This funding, combined with tuition fees, covers the majority of operations (Coates & Morrison, 2011). The federal government, however, is the primary funder for faculty research – a somewhat contentious role with a historical context. During WWI and WWII, the strict provincial jurisdiction on universities became muddied when the federal government was looked to for, and subsequently provided, funding for cash-strapped universities. This pattern continued past the wars into the boom era of the Canadian academic world, 1950s through the 1970s (Paul, 2011). This money continues to be a great and prestigious source of funding for Canadian universities, which as public institutions do not necessarily receive the same private or corporate sponsorships for their research, and certainly the funding priorities can change on the whim of the federal bodies. This somewhat undermines the ability of the provinces to create their own mandate for their universities, which in turn help enforce the priorities, cultural specificities and policies of each distinct province.

The golden age of financial support for universities, which reached its peak in Canada in the 1970s, is long gone. Budget cuts and restrictions have immensely impacted Canadian universities, particularly within the past two decades (Canadian Federation of Students, 2011). With university budgets being slashed by government funding in almost every province, and student's wildly protesting tuition hikes (as demonstrated by the significant media attention over the 2012 student protests in Montreal), all Canadian universities are struggling to find new sources of revenue and reduce expenditures.

At the heart of this research, and deeply relevant to today's increased discussion about the role of universities worldwide, is what the academy *is* and *ought to* be. Articles in Canadian media like the Globe and Mail (Anderssen, October 7, 2012) and The Walrus (Coates & Morrison, 2012) discuss the Canadian experience specifically, while other articles, like a major article in Time Magazine (October 29, 2012 Issue) reflect that this very point is of global concern. Hearn & Holdsworth (2002) articulate how the public university is challenged with an "iron triangle" of expectations – accessibility for all, doing good work and minimizing costs – that are at odds with each other, setting universities up to inevitably fail public expectations.

Demonstrating the growing influence that business and industry are having on setting federal government priorities with respect to funding scholarly research in the academy, we are seeing a transition from traditional liberal arts and science education to business-related and technical skills focused on job placement post-university (Coates & Morrison, 2011). This shift reflects the national concern of youth unemployment rates despite high levels of post-secondary education. Scholars from many fields, including sustainability, have demonstrated concern over how receptive a university can be to sustainability and social practices when they are concentrating increasingly on technical training and balancing the books. Said one such scholar: "[they need to] return to their core mission – effectively educating students to be democratic, creative, caring, constructive citizens of a democratic society" (Harkavy, 2006, p. 5). This sense of revisiting critical university pedagogies, such as democracy, relate to the vision of the university moving global efforts towards a sustainable future, as outlined in the 2009 Turin Declaration, an international charter created by the United Nations and signed by hundreds of universities world-wide:

> *Universities are aware that according to a growing consensus, our current paradigms are inadequate for addressing the long term needs of a sustainable future, and that it is then necessary to update strategies and procedures to accommodate the resilience required to progressively adapt to changing physical, historical and social conditions, to play an active*

role in shaping a more sustainable future. To do so universities should
encourage new thinking…

(Turin Declaration, 2009)

It seems, however, that Canadian universities are largely and increasingly mandated towards participating in the 'business as usual' paradigms the declaration refers to by becoming increasingly focused on more lucrative lines of education, such as training. The agenda and vision for each university often comes from the top echelon of administration – the university president.

As an overlooked group in the sustainability in higher education literature, Canadian university presidents offer a "glimpse into the world of university administrators" (Wright, 2010). Meaningful sustainability work comes from all areas of the university, but research suggests that a president's involvement is particularly significant as it provides a high profile signal, showcasing the significance of the project to the whole campus (Brinkhurst, Rose et al, 2011). The leadership of a president is often more transactive than transformative, as they create an institutional vision for the university based on the feedback of a multitude of stakeholders both on and off campus (Howlett & Ramesh, 2003). Canadian university presidents have great potential for implementing sustainability in higher education, and potentially Canadian communities. Understanding how they interpret and conceptualize sustainable development in the context of their institutional challenges offers incredible insight to sustainability in higher education practitioners to help overcome the institutional parameters and increase the potential for implementation of SHE projects.

2.1 Methods

Participants for interviews were recruited from English-speaking AUCC accredited universities (N=64). All 64 prospective participants were contacted with an initial letter from the President where the research was being conducted (Dr. Tom Traves at Dalhousie University) and 26 university presidents from across Canada subsequently agreed to participate in the semi-structured

interviews. Those who did not participate in this study either did not respond to an initial request for an interview and follow up phone call, or declined due to scheduling. All interview materials met the requirements of the Dalhousie University Ethics Review Board and were approved without revision. Interviews included the use of two checklists allowing participants to engage with specific details and concepts related to the terms sustainable development and sustainable university, respectively (see Appendices 8 and 9 for participant responses). The checklists were developed by Wright (2010) through a systematic review of 1,800 publications (both academic and popular print media), documenting various conceptions of the terms. Each checklist included discrete phrases related to sustainable development and sustainable universities and the participants were asked to check those that they felt were essential to the definition of the term. In addition, participants were also given the opportunity to add their own items to the list.

Interviews were conducted by telephone, and lasted on average about 45 minutes. They were then digitally recorded and transcribed with the data coded using the qualitative data analysis software package N'Vivo 9 and analyzed using the constant comparative method (as outlined by Glaser & Strauss, 1967). The research questions served as themes guiding the analysis, and subsequent codes were added based on frequency and depth of responses. In this way, the data were mined to specifically address the research question and objectives and could more accurately be described as a grounded approach rather than grounded theory.

Areas of checklist consensus and deviation were used primarily to contextualize the responses to the interview questions and give participants some tangible examples to explore. Some respondents gave simple "yes" or "no" responses, while others gave more open-ended answers, which were analyzed along with the interview transcripts. Additionally, at the end of each checklist, participants were asked if they would like to add anything to the list. Twelve responses were added to Checklist #1: Sustainable Development Concepts, (Appendix 6) and thirteen to Checklist #2: Sustainable University Concepts (Appendix 6). Use of

N'Vivo 9 software helped to track and record these findings and demonstrate significant areas of consensus and deviation.

2.2 Results and Discussion

The following section outlines participant responses on what the key issues facing their university are, and what the term sustainable development and sustainable university meant to them. Combining the participant interviews with perspectives from the literature, a robust set of recommendations follows in the final section.

2.2.1 "What are the key issues facing the university?"

Without a doubt, the key issues facing universities from the presidents' perspectives are finances. Of the 26 presidents, 73% explicitly stated financial issues as a top concern, while others spoke about it in other terms. Specifically, reduced government funding was cited as being a major issue. However, this also related meaningfully to other responses – a number of participants cited meeting societal expectations as a concern (19.2%) either as their role as a change agent within communities or their social or cultural relevance. Maintaining social relevance was also a key issue for participants in Wright's 2010 study and is a contemporary issue for Canadian universities as the role of the academy within society and how well it is meeting social expectations has been increasingly debated (Anderssen, 2012; Coates & Morrison, 2011). Said one participant:

> *We're constantly in a position where we need to make the case over and over again for not just the importance but more the relevance of what we do, and that's really very frustrating* (Participant 15).

In fact, the concentration on economics was of universal concern as well as the related courting of a student body, but was also very frequently contextualized in a larger issue of whether or not the academy in Canada is undergoing a fundamental change:

> *Two of the [issues] that will be almost universal is the challenges around funding continue to be quite pressing, and along with that, given demographic changes, I think being able to maintain not just enrollment levels but the kind of student that for our university that we're trying to attract… [there is] a real question of whether we're on the cusp of a bit of a sea change in higher education generally, just around modes of delivery and you know kind of what type of student engagement, whether it's a linear extrapolation of what we've done for the last fifty or a hundred years or whether there's some discontinuity that we're only a hair's breath away from* (Participant 5).

Attracting and retaining quality students (27%) and faculty (15.4%) was a closely related topic to finances in terms of remaining competitive and attracting f students, which is important in Canada where provinces award funding to universities on a per student basis (Coates & Morrison, 2011; Paul, 2011). Creating an attractive and satisfying environment to compete with other universities for quality students and faculty (and thus potential research grants) is a focus for many universities. Perhaps this explains why in Wright's (2010) study attracting students was the number one cited issue from participating presidents. Being an attractive and competitive institution also tends to require capital investment, for the upgrading of facilities, increased implementation of technology, etc., which is often accredited to the shift of universities becoming competitive industries (Cranfield et al, 2008). One participant questioned how this model contributed to the institute itself lacking sustainability:

> *In general university funding is predicated on growth… I think in some ways our capitalist consumer model of growth has some*

> *parallels in that businesses are seen to be healthy if they're selling more stuff and that creates an economic context in which producing more stuff and selling more stuff is the indicator of economic health and it's what's required to keep everything moving up including salaries and standards of living and workers well-being and so on, and I don't think that model is sustainable* (Participant # 7).

Another niche theme related to attracting students and faculty, and thereby remaining a competitive university financially, was the subject of changing demographics (15.4%). Interestingly, this topic was only raised by participating presidents located on the west and east coasts. On the west coast a greater concern was a *changing* demographic while on the east it was an issue of an *aging* demographic, and thus potential dwindling enrollment. Both groups noted this required consideration from the institution as to how to best attract students to increase enrollment and contribute to the knowledge and research community.

Two participants mentioned ecological sustainability concerns as one of the key issues for universities, while other key issues included becoming globally relevant institutions (7.7%), meeting goals set out in their strategic plans or mandates (7.7%), incorporating and using technology (7.7%), and union issues (3.8%).

The book *Leadership Under Fire* documents seven significant issues facing Canadian university presidents: (1) ensuring institutional quality, (2) increasing institutional differentiation, (3) facilitating student mobility, (4) responding more creatively to financial pressures, (5) championing the case for Canadian universities, (6) providing moral leadership, (7) ensuring the quality of graduates (Paul, 2011). Our study of 26 Canadian university presidents only supported points 1, 2 and 4, although participants were more vocal about securing funding rather than articulating the need to respond creatively to the funding crisis.

If studies suggest other stakeholder groups perceive administrators of being reluctant to take on sustainability projects with their already full agendas (Burland, 2011), then aligning sustainability projects with the key issues they work on as well as their understandings of sustainability would be an opportunity to envelop their priorities within the existing decision-making processes of the university (James & Card, 2011). Of course, university presidents are also responsible for forging interests across all stakeholder groups (Paul, 2011), so if sustainability is an increasingly significant issue to the students and faculty that universities seek to attract, this offers a promising strategy.

Clearly, all other "key issues" that were raised existed in the shadow of financial concerns, not at all surprising given the aforementioned climate, as well as the role of university administrators to govern finances. This is a significant context from which to consider the remaining thematic findings – when so clearly preoccupied with financial realities as they relate to and potentially threaten their institutions, how participants conceptualized and operationalized the terms "sustainable development" and "sustainable universities" was rooted in their experiences. If we are to employ study findings on effective institutional change, we must heed their warnings that nearly two-thirds of all change efforts fail due to a lack of alignment to existing organizational values and issues (Burnes & Jackson, 2011).

2.2.2 "What does the term 'sustainable development' mean to you?"

The most consistent theme when defining sustainable development was the concept of intergenerational equity (34.6%), which is a key aspect of sustainable development from the seminal Brundtland Report *Our Common Future* (1987). Two participants specifically referenced this work, and the rest responded with a reasonably high level of environmental literacy referencing key concepts from the seminal report, which echoes the findings of others when responding to such a query (Keen & Bailey, 2012; Wright, 2010). This can be interpreted as a

positive sign of potential eco-literacy, but conversely also troublesome as the Brundtland definition has been met with some criticism, for example its emphasis on technology to reduce environmental problems (Lele, 1991; Sylvestre, McNeil & Wright, 2013).

This focus on technology to address sustainability problems was a noted theme amongst participants, emphasizing an increase in efficiency to current development practices in order to achieve sustainability (34.6%). Said one participant in their description of sustainable development: "Development that allows life and organization to continue to thrive in relationship to each other" (Participant 4). This emphasis on the *development* portion of the term necessitates human management of the ecological world for the sake of our existing social and economic practices, simply aspiring to become more responsible with existing management and development and no real shift in ideologies or values. It is, to put it bluntly, a "business as usual" approach.

At the same time, there were also participants who questioned this approach:

> *I think that we're faced with the need to really rethink our*
> *paradigms and consider whether development is, if we mean*
> *onward and upward and always more and always better,*
> *particularly always more, then that's not sustainable* (Participant
> 7).

This marked a significant deviation from other presidents' perspectives as it called for a fundamental shift in ways of thinking about and approaching sustainability that goes further than technological fixes and requires using the critical thinking resources of the university to otherwise approach sustainability. In this vein, only one participant noted explicitly that there are limits to economic growth (Participant 14), though others echoed this sentiment in their own ways. For example, one participant mentioned the limits to growth without explicitly defining it in terms of economics, stating: "The idea of just growing and expanding at all costs is one I cannot accept" (Participant 19).

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It is a typical interpretation of sustainable development to concentrate on the tension between environmental limits and development and growth (Ester et al, 2003). This questioning of the economic/development focus alludes to another common interpretation of sustainable development – the three pillared or nested approach, comprising of economic, social and ecological sustainability (Ester et al, 2003). One participant equated it more to a three-legged stool "that tips over if one leg's bigger than the other" (Participant 10), but most participants emphasized one of those components over the other, defaulting to the tension between economics and ecology. Interestingly, the strongest areas of consensus (defined in this study as at least 80% sharing an opinion) for concepts on Checklist #1 (Appendix 6) were for social concepts. For example, there was strong disagreement with the concept of accepting species extinction, or a shift to global governance. Additionally, almost all of the other concepts added by participants to Checklist #1 (see Appendix 8 for a full list of participant responses to Checklist #1: Concepts on Sustainable Development) were social in nature, such as increased social equity, cultural specificity, and increased learning and education.

Many of the participants also noted the ambiguity or subjectivity of the word, some even suggesting it was a "loaded term" or venturing into the territory of it being a "buzz word". This ambiguity, however, was noted as an opportunity in more than one instance:

> *It is an ambiguous term and it does mean different things to different people, and that's probably a good thing provided we're willing to have conversations about that and then we achieve a better understanding of what sustainable development might mean and it equips us better to work together* (Participant #12).

This point alludes to what many contemporary sustainability scholars argue: the ambiguity of the term provides people with an opportunity to engage, contribute to the conversation, and propose their own interpretations (Kates et al., 2005),

which can be far more powerful when it comes to putting the term into practice. Said another participant:

> *I prefer things like sustainable practices, you know and then using proper sentences to talk about how you bring sustainability and sustainable practices into the daily life of people and institutions* (Participant 20).

Again, "each definitional attempt is an important part of an ongoing dialogue. In fact, sustainable development draws much of its resonance, power, and creativity from its very ambiguity" (Kates et al., 2005, p. 20); M'Gonigle and Starke (2006) also make an argument for localized implementation of sustainable development in universities. Meanwhile, the Bellagio Principles (1996) are an excellent example of trying to associate indicators with a definition of sustainable development, in this case the seminal Brundtland definition. Sustainable development declarations have become so prevalent on a global scale (Wright, 2004; Lozano et al, in press) that it was not entirely surprising that presidents demonstrated considerable literacy with these definitional attempts. However, some participants echoed sentiments from contemporary sustainable development scholars, that the power of the term comes in defining it and adapting it to the particular circumstances in which it will be employed, in this case the university.

2.2.3 "What does the term "Sustainable University" mean to you?"

When asked to describe what the term "sustainable university" meant to them, there was far less consensus among the presidents than when asked to describe "sustainable development." To begin, a few participants noted that they had never heard the term before (7.7%), just as in Wright's study (2010), or that it lacked meaning or substance (11.5%): "Well I have to admit the word sustainable is in some ways a little bit ill defined. It's become, you know, a bit of a buzz word over the years" (Participant 26). Interestingly, only one

participant translated the Brundtland definition to fit to the university context. This demonstrates a significant gap between a theoretical or "global" interpretation of the term sustainable development (which participants demonstrated considerable literacy around), and an ability to adapt this definition to the context of the university. It also suggests a lack of understanding of the contributions to environmental degradation and pollution the academy makes as well as the potential of the academy to contribute to a sustainable future.

By far, the most frequently and passionately discussed vision of a "sustainable university" was one that sustained its own existence, particularly in regards to financial security (50%). If analyzed using the traditional "three pillar" or "nested" concepts of sustainability, the presidents are (again) almost entirely consumed by the economic element. From a sustainability perspective, this is the narrowest possible interpretation – the economy only exists within the confines of a social structure, which in turn only exists in the confines of our physical environment. To undermine the latter for the sake of the economy is taking the short view. However, when contextualized within the experiences and values of participants, this makes sense as the presidents' need to balance the budget takes precedence over all other activities (Paul, 2011). From their perspective, the university cannot contribute to a sustainable world when so severely limited by economic constraints: "Most presidents believe that the post-secondary educational sector is significantly under-funded, that the quality of university education in Canada is in serious decline, and that a major financial crisis is looming for our institutions" (Paul, 2011). In fact, 15% of the entire data set was coded for financial concerns, though presidents were never asked a direct question about finances. In a world where recession economies are increasingly normalized, administrators must cut costs, increase productivity and still provide quality leadership (Krizek, Newport et al, 2011), all while defending the role of their institutions, as the idea of the university in dire financial straits is not a common public perception (Paul, 2011).

In some instances, the idea of sustainability was pitted against other projects that would require capital investment (i.e. energy retrofits vs. creation of a new building), which makes sense as the university environment becomes an increasingly competitive "industry" (Cranfield et al, 2008) where public funding is awarded on a per student basis and attracting new undergraduate students with new features and facilities becomes key for increased cash surplus (Coates & Morrison, 2011).

Closely related to the concept of a fiscally responsible institution was the concept of a sustainable university being one that reduced the environmental pressures and outputs through physical operations (57.7%). In fact, concentration on the physical elements of the university were so significant that when interview transcripts were mined for examples of sustainability in practice from respondents (Figure 1), 57% of examples given were operational fixes, such as changing light bulbs, increasing energy efficiency, etc. (see Appendix 10 for full list of examples).

Figure 1:   Participant's sustainability examples, categorized
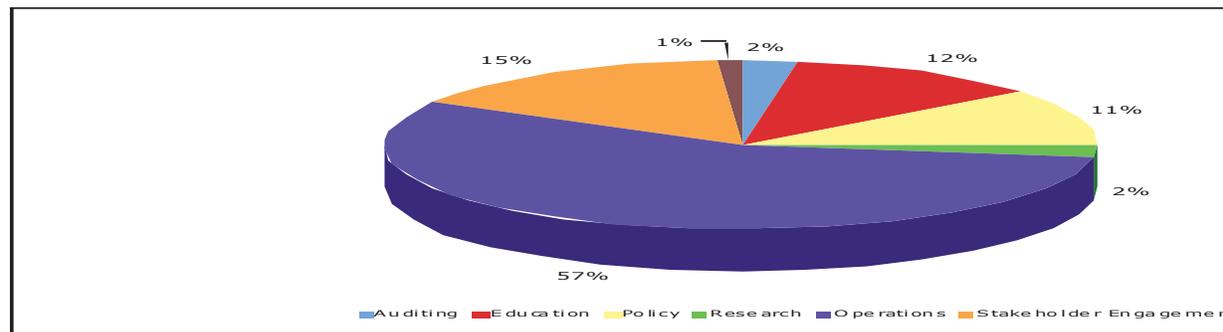
This also echoes findings that sustainability in higher education in physical operations tends to be the most popular area of concentration (Wright, 2002; James & Card, 2012) as well as the most successful form of implementation (Keen & Bailey, 2012; McIntosh et al, 2008). Additionally, James and Card (2011) found that facilities leaders had very strong sustainability literacy and understanding, and these individuals work closely with presidents, feeding into their conceptualizations of the term. Some critics may say that a concentration

on techno-managerial fixes is a narrow definition of sustainability, but the immediate environmental impact aside, they are also symbolic gestures and begin the process of working across campus stakeholder groups to initiate sustainability projects (James & Card, 2011). As both a practical approach to reducing the university energy budget as well as a symbolic gesture of the university's interest in sustainability, it makes sense that university presidents most often think of these measures as examples of sustainability initiatives.

From this perspective, an emphasis on operations is not a failure to implement a more holistic interpretation of sustainability, but instead can be an expression of the participants' feelings that they would be stepping outside of their boundaries to try to "dictate" any research or educational priorities, which they deemed to be a task for their deans and faculty. Contemporary SHE confirms this perspective, noting administrators are often limited in terms of championing projects because their role is to represent a diverse group of stakeholders (Brinkhurst, Rose, et al, 2011). Consequently, they may be reluctant to champion projects without proof of widespread buy-in. However, some participants questioned whether reduction of energy and waste constituted a truly sustainable institution: "Should we be reducing our carbon footprint? Absolutely. But, you know, does that make you a sustainable university?" (Participant 5).

This dissatisfaction with sustainability being categorized as simple operational fixes was represented in a niche of responses of several participants. Some described a sustainable university as one that infused sustainability into all decision-making on campus (23%), describing it as either a lens through which to view the university's practice or as "built into every fabric of decision-making" (Participant 20). Not only is creating a vision of sustainability important for operationalizing the term, but the creation and management of strategic plans are directly under the jurisdiction of the president and align with studies that have found that where sustainability initiatives are aligned with the institutional mission, success rates are highest (Moran & Tame, 2012; Schroeder, 2012). The dynamics of moving towards this change to

operationalize a more holistic interpretation of sustainability in higher education are still not well understood though scholarship increasingly points to the impact that faculty and staff have on the process combined with traditional top-down leadership (Brinkhurst, Rose, et al, 2011). Using their role as figureheads and leaders to bring the right people to the table may just be one of the most significant contributions a university president can have on working towards a more holistic implementation of the concept, since as noted in the beginning of this study the inclusion of presidents in sustainability discussions can convey to stakeholders the importance of this issue (Brinkhurst, Rose et al, 2011).

The remaining ideas that were unearthed vis-à-vis the theme of a "sustainable university" did not represent a high proportion of participants but were distinct and note-worthy for their level of critical-thinking and application of sustainability in higher education concepts. For example, the concept of the university modeling best practices (15.4%), creating economic models that are successful without growth (3.8%), and the university as an advocate for sustainability (3.8%) stand out. Additionally, the idea of creating a culture within the university that would foster sustainability (7.7%) or critical thinking more generally (7.7%) were raised:

> *What I think a sustainable university has to be able to do is be critically self-reflective all the time, and that implies that you've got a robust conversation amongst people who come from very different backgrounds and perspectives* (Participant 1).

An institutional "vision" of sustainability is given more texture when the checklist responses are analyzed in combination with the semi-structured interview – while there was more deviation in the initial questioning of what constitutes a sustainable university than the sustainable development checklist (Checklist #1), there was a generally high level of consensus on terms described in the checklist of popular ideas about sustainable universities with 50% of the categories showing university presidents were in consensus, either agreeing or disagreeing with a concept (see Appendix 9: Concepts on Sustainable

Universities). Strongest areas of deviation were around radical concepts, such as granting tenure for faculty who engage in sustainability work or financial incentives for students who take environmental courses. Areas of consensus included employing sustainability in operational practices (where these were listed generally, and not overly prescriptive) and empowering students to become involved. There was a tendency to have mixed reactions when there was an element of subjectivity to the checklist item. For example, the use of "safe and renewable energy" sources was noted as being open to interpretation. Overall, the interpretations of a "sustainable university" matched with the key issues identified by presidents as well as the jurisdiction of their position.

2.3 Study Recommendations

Rather than analyze the responses of Canadian university presidents when asked to share their thoughts on sustainable development and SHE to the standards of "best practices" or best possible green standards, this study examined them in the context of current Canadian university issues and experiences, considering the roles and limits of the universities and presidents. The implications of conducting the analysis in this way may produce more limited recommendations, but also ones that may help actualize a vision of a realistic path towards sustainability. If we think of the root of the term "sustainability" as the concept of maintaining, it really is a verb, and therefore constant practice, rather than an "end point" that schools must arrive at. Instead, the following section seeks to make an initial step towards a *more* sustainable university. The recommendations set out below were created from combining the insight of participants and their intimate knowledge about managing a university with the SHE literature and an understanding of the challenges facing Canadian universities. They are broken into four stakeholder groups that can contribute to SHE in Canada: policy makers, university administrators, SHE advocates and practitioners, and researchers.

2.3.1 Provincial and National Policy-Makers

1. Review and revise provincial and federal policies that impede sustainability in higher education, including university funding models (in particular the per-student funding regimen which "rewards" schools on quantity of students, not quality of programs or infrastructure), provincial green energy policies that have stipulations that would make it less profitable for a university to create its own green energy source (as noted by one participant from Ontario), and a lack of policy or funding access to help universities invest in "greening" their aging infrastructure which could create substantial financial savings from energy reduction.

2. Articulate and support the university's role in Canadian society nationally and abroad in order to achieve global competitiveness and contribute fully to Canadian society and Canada's contributions to sustainable development.

3. Offer financial investment or loans for energy efficiency projects, particularly for deferred maintenance of aging, energy-intensive buildings and projects with promise of strong returns on investment. Currently no known policies or investment strategies of this kind exist.

2.3.2 University Administrators

4. Create a president's multi-stakeholder council on sustainability to articulate a localized and specific campus vision and strategy towards sustainability in higher education (including students, staff, faculty, administrators and government).

5. Incorporate sustainability in higher education goals into the campus strategic plan, aligning them with the culture and mission of the institution.

6. Continue to articulate and advocate the university's role in Canadian society, particularly beyond that of a mere training facility for jobs, fostering an understanding of the value of the critical thinking, education and research components of the academy. This understanding of the university as a leader within Canada can be further applied to addressing sustainability problems facing the nation.

7. Prioritize energy reduction and other cost-savings operations projects and re-invest savings into a "green budget" or other sustainability in higher education projects. Use these investments as symbolic gestures for the university community that sustainability is a priority within the institution.

2.3.3 Sustainability in Higher Education Practitioners and Advocates

8. Align and prioritize sustainability in higher education projects with the key issues, values and culture of the university, emphasizing cost-savings initiatives and projects that attract students and faculty.

9.

ork with other stakeholder groups to actualize a fuller, holistic interpretation of SHE (e.g. deans and faculty for research and education priorities).

2.3.4 Faculty Researchers

10. Define and articulate the role(s) of universities in Canadian society, contributing to the discussion of Canada's environmental agenda

and contributions to sustainable development, the university's potential contributions to this sector, and the upcoming "sea change" for Canadian universities and implications and opportunities for sustainability in higher education.

11. Research and identify the projects most significant to attracting high quality students and faculty, which presidents noted as a key issue, particularly as it increases their funding budgets and is good for the reputation of the university.

12. Examine what areas of SHE need to be operationalized by other stakeholder groups, and whether or not they feel compelled or empowered to do so (or if they assume these projects fall under the jurisdiction of the president).

2.4 Study Limitations

Like any research endeavor, there were limitations to what this study could cover. Limitations included time and money, which were major factors for choosing phone interviews over in-person interviews in a country as geographically vast country as Canada. However, phone interviews are proven to be a reliable method in qualitative research (Sturges & Hanrahan, 2010), particularly for elite populations (Mikecz, 2012), like university presidents most certainly are. So though participants could not be interviewed in person it is not likely it impacted the quality of the study.

Additionally, the limitation of time imposed on the completion of as masters thesis restricted the potential literature review for this study. For example, a contemporary review of SHE literature as well as the Canadian university experience took precedent over a full review of potential conceptual lenses for analysis, such as environmental psychology fields and CBSM. Instead, this study only nodded towards how these perspectives might begin to be included and used to further illuminate study results in this or future work.

2.5 Concluding Thoughts

A sample of Canadian university presidents (N=26) demonstrated considerable eco-literacy, primarily using the seminal Brundtland Report to define their conceptualizations of sustainable development. When trying to articulate a conceptualization of a sustainable university, most presidents concentrated on physical operations, suggesting that they think other elements of sustainability in higher education, such as research and education, fall outside of their jurisdiction or had not considered these approaches. The participants' conceptualizations of sustainable development and sustainable universities were analyzed in the context of the Canadian university experience. This included a literature review of sustainable development, SHE and Canadian university issues, examining the links between environmental attitudes, values and interpretations with application. From these findings, this study makes twelve recommendations to incorporate sustainability more fully into university practices. These recommendations are grouped into four stakeholder categories: provincial and national leaders, university administrators, sustainability in higher education practitioners and advocates, and researchers, respectively, who all have a stake in improving sustainability in higher education in Canada.

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Chapter 3: Sustainability in Higher Education through the Eyes of University Presidents: Key Issues, Barriers and Opportunities in Canada

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Student Contribution Statement: *I acted as primary researcher for this study, interviewing participants, analyzing responses and constructing the discussion and recommendations based on the literature reviewed and interview content.*

Abstract

It is a rare opportunity to speak to university administrators about their perspectives on environmental sustainability, but in this study a cohort of Canadian university presidents (N=26) shared their conceptualizations on sustainability and the role of the university in creating a sustainable future. Although studies to date are few, those that exist show that while administrators do not have a major role in all activities relating to sustainability, they are important leaders and figureheads for overall change and control the university's financial decision-making, making them an important stakeholder group. Yet few studies to date have illuminated what university administrators think about this issue. Through qualitative interviews, we gleaned insight into presidents' perceived challenges and opportunities within the context of SHE: barriers were primarily financial, but the benefits to implementing sustainable projects listed by presidents were more vast including a moral sense of it being "the right thing to do" and acting on it because of its significance to their student population. Interestingly, financial incentives were also a noted benefit of investing in SHE. The piece ends with recommendations for practitioners of sustainability, policy makers, researchers and university administrators.

3.0 Introduction

As places of ingenuity, research and expertise, universities are often looked to in times of social upheaval and uncertainty for guidance, knowledge and leadership, making it a natural extension that universities have been called upon to lead a path to a socially and ecologically sustainable future. After all, they are well suited to address problems through teaching and research, are generally stable institutions accustomed to planning long-term visions and tend to be receptive to new ideas (Graedel, 2002). Additionally, universities educate the next round of bureaucrats, business leaders, politicians and more, and these individuals make decisions that impact our environment dramatically for better or worse – in fact, major environmental degradation is not the work of ignorant people, but rather highly educated individuals (Orr, 1991) who tend to make unsustainable choices for financial or political reasons (Ross & Amter, 2010).

Broadly speaking, SHE can be described as the "process of reducing the multitude of on-and-off site environmental impacts resulting from campus decisions and activities, as well as raising environmental awareness within the human communities of a college or university" (Dahle & Neumayer, 2001, p. 141). But there are a multitude of ways that universities can move towards sustainability, including management, planning, development, education, research, operations, community service and outreach, purchasing, transportation, design, new construction, renovation, and retrofits (van Weenen, 2000) – some of which have more or less effect on different campuses. Not only can these activities contribute a direct impact by way of reducing the environmental footprint of a campus, but they also contribute tremendously to the education, values and attitudes of thousands of stakeholders each year including staff, faculty, students and the communities in which they are situated. Since, as Orr (1991) has noted, many of the environmental issues we face today are the result of decisions taken by those educated in the academy, and Canada has the second highest rate of university-educated individuals in the world (Coates & Morrison, 2011), the potential for Canadian universities to contribute to sustainability both within and outside the boundaries of the academy is clear.

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The primary role of a Canadian university president is that of an administrator and figurehead, creating institutional priorities and cultivating a strategic plan, managing the financial aspects of the institution, fostering stakeholder engagement, promoting a brand or reputation for the university, managing faculty and staff and providing leadership and day-to-day duties including reporting to a Board of Governors and Senate (Paul, 2011). In Canada, where universities are public institutions, provinces provide funding based on the number of students a university has in attendance. Combined with student fees, this covers most of the funding for day-to-day operations (Coates & Morrisson, 2011). Funding for major research comes from the federal government, a tradition that began in WWI and WWII. However, almost all provinces and the federal government have decreased funding in recent years, leading to student unrest over rising tuition and administrative difficulty in financing their institutions, though these challenges vary from university to university based on private funding and other variables.

Based on their position within the university as influential decision-makers, this study sought to understand university presidents' perspectives on SHE through qualitative interviews. In particular, we are interested in understanding the barriers and benefits to SHE from the presidents' perspective, as well as the key motivating factors to becoming a more sustainable university. The reasons for unearthing these perceptions from this stakeholder group are derived from literature on managing change.

3.0.1 How "Change" Literature can Contribute to "Change" in Canadian Universities

Change is a constant phenomenon, particularly in the rapidly evolving 21st century – an ever-adapting world with exponential changes for each decision and tool made. Change has become both "pervasive and persistent" for organizations (Hammer & Champy, 1993) and in his book *The Ingenuity Gap,* Homer-Dixon (2001) notes how difficult and ill-addressed social change is

while we make quick strides in increasing technological endeavors. Change within the university is no different – in fact, recent articles from autumn 2012 in the Globe and Mail (Anderssen, October 7, 2012), The Walrus (Coates & Morrison, 2012) and Time Magazine (October 29, 2012 Issue), reflect the much-debated role of the university in the 21st century, as well as its ability to address many of our most pressing social, political, economic, and environmental changes. Yet universities continue to be looked to as leaders in sustainability, though becoming more sustainable is no short order for an academic institution.

Though change is considered crucial to institutional success, and necessary in order for institutions to become more ecologically sustainable, 70% of all institutional change strategies fail (Burnes & Bernard, 2011). One theory for this high rate of failure is that the values of a change intervention are not aligned with the existing values of the members of the institution (Burnes & Bernard, 2011). Worth noting, scholars have found that where SHE initiatives are aligned with the organizational mission of the university success rates are highest (Moran & Tame, 2012); this has also been found true in the business sector (Schroeder, 2012). Adapting SHE strategies to fit the culture of an institution, therefore, has potential for more robust uptake, implementation, and results.

CBSM is an approach to change management that maintains that in order to understand how to increase environmentally-positive behaviours we must first understand the demographic we are studying, including the perceived barriers and benefits specific to the population (Andreasen, 2006; McKenzie Mohr & Smith, 1999). Instead of trying to fit the proverbial square peg in a round hole by expecting institutions to rigidly adhere to one definition of SHE, recognizing the challenges that are particular to these institutions offers potential to increase results. However, there is scant literature to date that explores what barriers university presidents associate with SHE (Wright, 2010), or conversely the appeal or benefits they link this process. As a result, this study contributes modestly to an emerging literature in this field.

3.1 Methods

University presidents were recruited from English-speaking universities accredited by the Association of Universities and Colleges of Canada. From a possible 64 participants, we were able to recruit 26 presidents, who participated in in-depth, semi-structured interviews based on a pilot study by Wright who had 17 participants (2010). The pilot was performed on Canadian university presidents, drawing only from those schools that had signed the international SHE Talloires Declaration. Those who did not participate in this study either did not respond to an initial request for an interview and follow up phone call, or declined due to scheduling. Participants were asked to provide personal definitions of sustainable development and a sustainable university as well as describe the role the university has in creating a sustainable future, the results of which are described in another manuscript (McNeil, Wright & Castleden, submitted for publication). In addition, participants were asked to complete two checklists during the course of the interview that related to sustainable development and sustainable universities with participants given the opportunity to add their own concepts to the list. The checklists were developed by Wright (2010) through a systematic review of 1,800 publications (both academic and popular print media). All interview materials met the requirements of the Dalhousie University Ethics Review Board and were approved without revision.

Interviews were transcribed and then coded inductively using the constant comparative method (as outlined by Glaser & Strauss, 1967) using the qualitative data analysis software package N'Vivo 9. The research questions served as themes guiding the analysis; for this paper, we focused on cited barriers to sustainability, benefits to sustainability and key factors in making sustainability a top priority for universities. In this way, the data were mined to specifically address the research questions and could more accurately be described as a grounded approach rather than strict grounded theory. Responses were then contextualized through a literature review of Canadian university literature (both historical policies and contemporary issues), SHE literature and change management literature to contribute to the formulation of practical recommendations for the university community and other key stakeholders such

as sustainability advocates, practitioners (e.g. those within a campus sustainability office), policy-makers and researchers.

3.2 Results and Discussion

The following section outlines participant responses on both the barriers and benefits to implementing SHE initiatives and what might make sustainability a top priority for their university. It combines perspectives from the interviews with literature to lead directly into conclusions and recommendations.

3.2.1 Barriers to implementing sustainable practices

Given the financial climate (i.e. federal and provincial cut backs) facing virtually all Canadian universities, it was not surprising that 69% of participants listed financial constraints as a major barrier to implementing sustainability projects. Most frequently, the discussion around barriers to financial investment for SHE related to ongoing maintenance of old buildings – the Canadian university growth boom of the 1960s and 1970s led to a boom in university buildings (Paul, 2011) that are now outdated and energy-intensive.

> *Institutions like this have trouble meeting new environmental standards and focusing on sustainability because we don't have the kind of funding available that allows us to put our buildings on the kind of lifecycle that ensures that we're keeping up and always addressing the reduction of costs that come with the enhanced ability that's available for these kinds of facilities* (Participant 14).

Maintaining these aging and energy-intensive structures is difficult for many universities. This barrier also reinforces previous findings that physical operations tend to be the most popular area of concentration (Wright, 2002; James & Card, 2012) as well as the most successful form of implementation

(Keen & Bailey, 2012; McIntosh et al, 2008), making it a reasonable and practical barrier to be overcome. In our study, 15.4% of participants noted government policies as impeding their ability to invest in sustainability initiatives that require capital-investment, like building retrofits:

> *I think there's a broader problem, which is that the federal and provincial governments don't really focus on policy development in these areas or anything in a substantive way, which I think creates an atmosphere where it's more difficult to get things done* (Participant 20).

Closely behind financial barriers, presidents identified the social element of change, such as getting people to turn off their office lights or computers or work together to create a more sustainable campus – nearly half (46%) of the participants cited these human/stakeholder issues as a barrier, though this was broken down into one of two areas - straight-forward behavioural issues or more complex behavioural issues. From the 46% of those making reference to social issues, 27% identified that getting stakeholders to collaborate and work together (a more complex behavioural issue) was a major issue, and 19% noted that getting individual stakeholders to change a specific behavior, such as turning off their office lights (more straight-forward), was a major barrier.

> *I will admit there's a cynical side of me that says that young people today have a tremendous concern for green issues, unless it costs them a penny or costs them any energy, then they ignore them… and I admit that's a cynical side of me, but there is a significant gap I think still today between a certain level of popularity on the green and sustainability issues and our willingness to sacrifice for them* (Participant 1).

Participants also cited some niche issues. For example: crowded agenda/time as a limited resource (7.7%), space or resource access (7.7%), not enough metrics to measure sustainable initiatives (3.8%) and keeping up with educating each

new year of students in terms of varied exposure to environmental concepts (3.8%).

Despite these barriers, not only did many presidents see the potential to address them, but they also believed they had actually seen the change over their years within the university. Particularly worth noting, two participants indicated that they didn't think there were any real barriers at all.

> *You know what I'm going to say? I don't think there are any barriers. I think we can create all the barriers we want if we choose not to act. I think, my sense of this is it's a question of commitment and it's a question of priorities and if we really believe these are central issues for the university, then we make them central* (Participant 1).

This sentiment further demonstrates the level of optimism many of the 26 university presidents conveyed about the evolution of SHE on campuses. Building on that optimism, others discussed in detail how they have seen the concept change:

> *I think even the whole notion of sustainability has evolved. When we first started talking about sustainability everyone just assumed that meant we had a recycling program. So I think now people understand sustainability much more broadly. Not everyone, but certainly, you know significant elements of a campus community. So no, I don't see them remaining static. I'm actually quite optimistic* (Participant 24).

One final note under the theme of barriers to implementing sustainable practices – one participant noted that other university stakeholders (faculty, staff, students) may see administrators themselves as barriers to implementing SHE, an astute observation that suggests at least one president is aware of the disconnect between university stakeholders when it comes to implementing SHE.

3.2.2 Benefits to implementing sustainable practices

While the finances associated with implementing sustainability initiatives were one of the most cited barriers, financial advantages were also one of the most cited benefits (65%). Primarily this was in relation to savings incurred by greater energy efficiency. In addition, in a province like British Columbia universities pay taxes for carbon emitted and so becoming more energy efficient also saves the taxes they pay per year. Some noted the significance of being able to re-route this money to academic programming (11.5%) and one participant captured this in terms of the interrelation of ecological and economic sustainability:

> *Building a sustainable environment… will make any university survive… the benefit is enormous in the long-term* (Participant 8).

This wasn't the only benefit identified by presidents, however, nor was it the one they spoke most passionately about. Several participants noted that because sustainability was important to their current students they had an obligation to act (30.8%):

> *Students were very clear that sustainability was a very important aspect for them and so I absolutely think the biggest benefit you have is this is important to students. It's critical to students. They want to be part of a university campus cares about sustainability* (Participant 18).

Participants also identified how important they thought it was to graduate students who could incorporate sustainability values into their future lives and work (30.8%). This finding was particularly significant given that it implied, at least for a portion of presidents, that they view the university's role as an educational environment to go beyond training and learning and include the imparting of values and critical thinking. Some pointed out that SHE could be a factor in recruiting future students (11.5%) and/or that it was good for their reputation as an institution (27%).

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Two other key benefits emerged from the thematic analysis. First, 23% of participants mentioned an ethical drive to act on sustainability initiatives, including the "feel good factor" or doing what they think is the right thing, while 15.4% specifically cited that it was the university's role to act on these issues.

> *As educational institutions we have a moral obligation to say that ethically, environmentalism is the right thing to do. So for that reason, for the fact that we have a mission to educate and that this particular area of education for environmental sustainability is a critical one, and universities have an extraordinary opportunity to play a role in that* (Participant 7).

The positive impact SHE can have on the physical environment was noted as a benefit by 23% of participants, mentioning it in a local context with impact for their own communities (15.4%) or their own campus (7.7%). The remaining benefits identified by either one or two participants were as follows: SHE keeps the university engaged in relevant research and education (7.7%), it is important to model SHE initiatives and efforts (7.7%), SHE initiatives have a positive impact on society (3.8%), raising consciousness about sustainability was important (3.8%), it is the role of the university to address human values (3.8%), SHE helps attract faculty (3.8%), SHE is transformative for the university culture (3.8%), SHE is a catalyst for creating new programs (3.8%), and, finally, SHE allows the university to take part in the global conversation on sustainability (3.8%).

Uniquely, one participant saw pursuing the challenges of sustainability as an actual *benefit* in and of itself:

> *Just because it's difficult and just because it's like pulling teeth, it doesn't mean you don't engage in the discussion. That's what we do at universities… and some would argue in the political sphere, we do that*

too much, and we discuss too much, and we argue too much and we pontificate too much. That's what universities are for (Participant 15).

In this way, engaging in SHE is an opportunity for the academy to fulfill its mission, from the perspective of this participant, as a place of questioning, critical thinking and problem solving.

3.2.3 Key factors to making sustainability a top priority for universities

Presidents tended to conceptualize SHE within the realm of operations (McNeil, Wright & Castleden, submitted for publication), making finances for investing in projects a key barrier. Yet when asked to identify the main factors to making sustainability a top priority for their universities, only 38% noted financial incentives as a motivating factor. Having said that, financial incentives did represent the category with the highest area of consensus, as a lack of (or perceived lack of) resources limited the uptake of SHE projects despite rhetoric around the university's commitment to sustainability:

> *Yeah, well, I think the aspiration is there in… what we stand for and our values in terms of seeking care of creation, care of the earth, as one of our key values, looking at global issues of development… with a lens of sustainability, those are values that are pretty deeply imbedded in the institution, so that aspiration is there. I think what would keep us from… really fully living out those values and being a model of a sustainable university is really our limited resources in terms of being able to make major changes to our facility and our operations* (Participant 20).

The need for existing values and aspirations to be aligned with sustainability goals (as outlined by the above participant) was noted by 15% of participants as being essential for sustainability projects to progress. Further, 7.5% specifically noted the need for policies that make it easier for universities to invest in these projects, which could be university-specific as well as provincial or federal

policies, though no specific ones were named. Relating to internal policies, 19% of participants said if sustainability goals aligned with or were included in their strategic plan or goals SHE became or would become a motivating factor. One president pointed out that even better would be if it worked as a tool for achieving other institutional goals.

Many respondents noted that if sustainability was significant to their student population it became significant to them (73%):

> *It's pretty clear, unless an administrator's brain dead, that [sustainability] is a key issue of the generation. The kids are excited about this; the kids have high expectations about this, etc. etc. So it's pretty hard for us to ignore that* (Participant 2).

Others mentioned other university stakeholders such as faculty, staff or the community as motivating factors (7.7%), and re-iterated from their responses on benefits of sustainability the "feel good factor" or an ethical or moral push as a motivating factor (7.7%), or the positive public relations (3.8%). Demonstrating the institution's relevance to the external community was mentioned by 11% of participants, particularly in the context where the university was situated in a position of influence in their community, or the community was facing some challenges (such as low employment or an environmental remediation of a contaminated site).

Several participants (*19*%) stated that they felt sustainability already was a top priority for their university, although there was a recognition that more work needed to be done:

> *We made that Declaration but if you ask me, and you haven't but I'll answer, if you ask me if I'm satisfied with how quickly we're moving down that path, the answer is a decided no and, I say that in full knowledge that if you kind of benchmarked us and compared us to sister institutions in Canada and the U.S., and we've done that kind of work,*

we look really good. But is it as fast as we'd like? Not a chance
(Participant 4).

The remaining factors to making sustainability a top priority were as diverse as the universities themselves, perhaps getting to the heart of the challenge of a pan-university sustainability initiative. Largely, the factors were social in nature, and similar, though with subtle distinctions. Some of the motivating factors noted by a single participant included: long-term benefits to the university; examining sustainability in the context of other goals and challenges on campus; willingness of all campus constituents to participate in sustainability initiatives; SHE as an outlet for people passionate about sustainability to take on "champion" roles in the institution, developing greater leadership; changing awareness and attitudes; having business or industry leaders approach them for innovation in technology and knowledge creation; and having unanimous buy-in from all campus stakeholders.

Addressing factors to making sustainability a top priority in ways that are institutionally relevant is key to motivating administrators towards sustainability initiatives. Though the conversation on barriers and benefits may indicate that financial incentives and concerns are motivating factors towards sustainability initiatives, the answers to the follow up question indicated a wider array of motivations than strictly economic. When explicitly asked about motivating factors that would make becoming a sustainable university a top priority, presidents gave a wide array of responses that would indicate that a deeper knowledge of institutional and individualized motivations is key for motivating universities to becoming more sustainable.

3.3 Conclusions and Recommendations

Generally, the approach to increasing SHE initiatives at Canadian universities requires action that reduces barriers and increases benefits. Some of the benefits identified in this study are too intangible to make specific recommendations, while others were specific to particular institutions. Nevertheless, several

recommendations that would generally apply to most of the participating universities are outlined, for government policy makers hoping to strengthen Canadian universities and increase Canada's environmental action, university administrators hoping to increase sustainability, and practitioners and advocates for SHE hoping to encourage their administrative leaders to make stronger campus commitments to sustainability. The recommendations that follow are those identified as mechanisms to make significant change.

3.3.1 Government Policy Makers: Invest in SHE and Canadian Universities

University presidents at 26 Canadian institutions identified financial constraints as a key issue for implementing SHE on their campuses. Choosing projects that optimize energy savings is a smart decision for most universities to have a direct impact on the environment, showcasing their university's commitment to sustainability projects and cultivating energy savings that can be re-invested in future SHE projects. Since it is provincial governments that govern our universities in Canada, provinces need to revise and/or develop policies to encourage universities to advance SHE initiatives and energy saving initiatives through grants and other capital investments. Though few specific federal policies relate to sustainability, a review of any existing connections (e.g. funding for research) would be appropriate.

3.3.2 Administrators, Practitioners and Advocates: Align Sustainability and University Values

If Parris and colleagues (2005) are correct that sustainable development works best with a localized definition, and Burnes and Bernard (2011) are right that the values of the proposed change and members of the institution need to be aligned, then universities need to define and practice their own definitions of sustainability and goals for SHE. By aligning them with their strategic plan, they are more likely to achieve their goals. Willing administrators should initiate this

process, and advocates and SHE practitioners have a role in encouraging them to do so.

3.3.3 Administrators, Practitioners and Advocates: Make Commitments to SHE

The strong ethical and moral obligations university presidents feel towards their communities and stakeholders suggests that when they make commitments to SHE, particularly when they are stated in high-level documents such as their strategic plans, the commitments tend to follow through. Thus, universities that make these commitments in goal-oriented documents (as opposed to websites, recruitment materials, and other less binding texts), and ensure commitments have measurable deliverables wherever possible should have high levels of success in SHE. Again, this is an area that can be initiated by administrators or encouraged by advocates and facilitated by SHE practitioners, such as a sustainability officer or other interested party.

3.4 Concluding Comments

An analysis of 26 university presidents' perspectives on the benefits, barriers and motivating factors surrounding SHE revealed that these factors are particular to each institution, though there were some commonalities. An area of consensus particularly worth noting is the reality that finances are top-of-mind for university administrators, which reflects both their role within the university as well as the fiscal challenges (i.e. cut-backs) facing Canadian universities today. Despite this, the motivating factors to make sustainability a top priority at a university extended well beyond finances and included responding to stakeholders' expectations (particularly those relevant to attracting and retaining students and faculty) and "doing the right thing" by acting on environmental issues. Besides lacking the capital to invest in some projects, addressing attitude and behaviour change of stakeholders was also seen as a significant barrier. By understanding the university's key challenges as well as attractions towards

sustainability, SHE practitioners and administrators could move closer to developing stronger steps towards these goals on a localized and individual basis – particularly in their identification of motivating factors it becomes clear that though they share some common experiences, the differing institutional priorities makes each university unique in when, how and why they will adopt sustainability practices.

Using CBSM as a conceptual model for SHE breaks the mold of using this tactic for straight-forward behavioural changes like increased recycling, and expands it into more complex applications, if only initially as a conceptual tool. There are many tools and theories from CBSM – like the desire to behave consistently, understanding barriers specific to a population, etc. – that have meaningful application in the SHE context, particularly around the cultivation of environmental leadership in administrators. Though the same rate of measurable success may not be possible, applying tactics from social change theories to complex applications of sustainability still shows potential to increase pro-environmental behaviour, and gives insight for policy makers, practitioners and advocates on how to cultivate a stronger commitment to sustainability. SHE literature has rarely applied conceptual lenses from these fields, instead typically measuring participant responses and experiences to "promising practices" from SHE or sustainability literature. This approach gives a good benchmark of how well (or poorly) a university may be doing in addressing sustainability issues, but does not always give sufficient insight into how to overcome obstacles.

This study also contributes to understanding how Canadian university leaders, with their particular experiences, insights and obstacles, conceptualize and manage sustainability efforts. In general, more attention has been paid to American or Commonwealth countries experiences with SHE than Canadian universities. This study initiated an investigation into the conceptualizations, experiences, policies and history particular to a Canadian SHE experience through interviews and literature reviews. This approach was based on the guidance of CBSM that we must understand the particular barriers, benefits and motivations associated at a localized level before we can move towards effective

implementation of sustainability practices. Barriers, benefits and key motivating factors identified by university presidents at a sample of Canadian universities is a first step towards understanding how to foster sustainability in higher education in a Canadian context.

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Chapter 4: Conclusion and Recommendations

This chapter is the fourth and concluding part of a thesis discussing sustainable development and sustainability in higher education as articulated by 26 Canadian university presidents through their participation in semi-structured interviews. In this chapter, a brief summary of the background and rationale of this study is followed by an examination of how the objectives of this study were met through analysis of interview content. From here, the recommendations made in Chapters Two and Three are presented in full before setting out the recommendations for further research and concluding thoughts.

4.1 Summary

Canadian universities have the potential to become sources of leadership in environmental sustainability in Canada at a time when our domestic and international reputation in this capacity is diminished due in part to the well-publicized and controversial Alberta oil sands, Canada's backing out of the Kyoto Protocol targets and publicized lack of effort during subsequent international climate change discussions (Anderssen, 2012; Murray & King, 2012; Pembina Institute, 2008). Opportunities for the country to showcase leadership in research and education while also providing universities with the opportunity for financial savings through energy and cost savings make the potential to invest in SHE a worthwhile endeavor for universities and government policy-makers.

Currently, the literature on sustainable universities lacks a sophisticated understanding of how top administrators (i.e. university presidents) envision and understand sustainability (Wright, 2010), particularly in a Canadian context. This research contributes to filling the gap in the literature while providing data for sustainability practitioners (such as advocates for SHE as well as those who work in sustainability offices at universities) to employ in advocating for "greener" practices. In addition, this study allows the scholarly community to

better understand the key issues facing the university from the perspective of Canadian university presidents, a cohort of elite individuals whose perspective is perhaps often speculated though rarely examined. Specifically, the question driving my research was: how do a cohort of 26 Canadian university presidents conceptualize:

1. Sustainable development;
2. Sustainable universities;
3. The role universities play in achieving a sustainable future;
4. Key issues facing the university; and
5. Barriers and benefits to implementing sustainability initiatives on campus?

Given the above questions, I identified two key objectives and addressed them through the analysis of university president's responses during semi-structured interviews combined with literature reviews in the fields of Canadian university issues, SHE and change management and social psychology.

4.1.1 Objective One: To contribute to filling a gap in the SHE literature on Canadian university presidents' conceptualizations of sustainability and universities.

This objective was achieved by answering research questions 1, 2, 3, and 5 (listed above). Major conclusions for each research question are described below:

What is Sustainable Development?

University presidents demonstrated considerable eco-literacy in terms of understanding of what is considered to be, by sustainability scholars, a traditional view of the term. Most of the presidents made reference to the seminal Brundtland (1987) definition of sustainable development, generally summarized as meeting today's needs without compromising future generations'

ability to meet their own. While the Brundtland definition may be the most widely accepted and cited (Kates, Parris & Lesierowitz, 2005), it has also been met with criticism, namely that it narrowly focuses on technological and efficiency fixes while reproducing major ideological contradictions (Sylvestre, McNeil & Wright, 2013). Not surprisingly, participants who subscribed to this definition tended to focus on technology and efficiency in their descriptions of measures towards achieving sustainability, which is not entirely problematic though it does lack a holistic approach to sustainability.

What is a Sustainable University?

When asked to define and explain what a sustainable university meant to them, presidents were considerably more divided on their definition and interpretation. Several participants noted that they had either never heard of the term before (7.7%) or that it lacked meaning or substance (11.5%). Of those that did have an articulation, the most frequently and passionately discussed vision of a "sustainable university" was one that sustained its own existence, which echoes the pilot research (Wright, 2010) as well as contemporary commentaries in the media about the Canadian university in crisis (see: Coates & Morrison, 2012). This idea of the university sustaining itself was a direct reference to fiscal concerns and competition with other research and teaching institutes in an era of dwindling funding and public perceptions (for further discussion on this see: Coates & Morrison, 2011; and Coates & Morrison, 2012). Closely related to the concept of a fiscally responsible institution, over half of the presidents indicated that the concept of a sustainable university was one that reduced the environmental pressures and outputs through physical operations. Moreover, the majority of the examples and visions presidents shared for a sustainable university were physical measures, with research and education being mentioned with far less frequency.

What Role Do Universities Play in Achieving a Sustainable Future?

Presidents interviewed made several indications that they feel the university should be a leader in creating a sustainable world. Though many felt restricted by barriers, they also felt an obligation to make a better world for their students and society at large. There was a strong ethical motivation from many participants who indicated that to act on sustainability was the "right thing to do." Yet how to go about acting on sustainability was often limited in scope or more abstract than operational. Presidents also discussed contributing to the immediate communities they live in and/or on a global scale, but made no mention of contributing to provincial or national efforts or helping guide government towards better environmental decision-making. It seems that despite their perceived power from an external vantage point, perhaps in light of the challenges the Canadian university is facing many feel impotent in terms of national influence. Though most presidents were generally interested in or working towards sustainability measures in some capacity within their university, only 15.4% explicitly articulated that they felt it was the role of the university to do so.

What are the Barriers and Benefits to Implementing Sustainability Initiatives on Campus?

Given the financial climate (i.e. budget cuts) facing most Canadian universities, it was not surprising that 69% of participants listed financial constraints as a major barrier to implementing sustainability projects. Closely behind financial barriers was the social element of change including behavioural issues (such as remembering to turn off lights or recycle paper) and more systemic attitude changes (like an unwillingness amongst university community members to work on the issue). Interestingly, while the finances associated with implementing sustainability initiatives were one of the most oft-cited barriers, financial advantages associated with engaging in sustainability initiatives was also one of the most cited benefits. Participants noted the potential savings incurred by greater energy efficiency, particularly in aging businesses, but acknowledge that

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the investment in such projects were sometimes prohibitive even if the long-term savings were understood. Several participants also noted that because sustainability was important to the student population, they had an obligation to act and they thought it was important to have students graduating with the ability to incorporate sustainability values into their future personal and professional lives. Others noted the positive impact on the physical environment as a benefit, as well as the "feel good factor" of doing what they perceive is the right thing.

4.1.2 Objective Two: To better understand the population of Canadian universities and their presidents to contextualize participant responses to interview questions.

This section helps contextualize the above findings in the reality of university, Canadian, and global contexts. It is arguably a much richer lens to examine the data than by assessing it only according to sustainable development or SHE research, which offers more idealistic ideas of sustainability but sometimes fails to have the traction to be immediately operationalized without understanding the current regimes and restrictions that Canadian universities operate under.

Profile of Canadian Universities and their Presidents

Canada has relatively young universities compared to its international competitors. The oldest schools in Canada were established in the Atlantic provinces and Quebec, and a major boom in funding in the 1950s through the 1970s helped create more institutions across the country. Because of this boom many universities that were created or expanded during this phase are now experiencing aging infrastructure and energy-intensive expenditures.

Though the Atlantic region may have some of the oldest schools in Canada the largest proportion of schools are not in this region but rather the eastern one, (i.e. Ontario and Quebec) with 40% of the country's universities. The central region

(i.e. the Prairies) have the lowest proportion with only 9% of Canadian universities. Though no direct implications arise from this, it does highlight how regional differences can impact a university's interactions with sustainability. As an example, West coast and Atlantic schools were more likely to note competing against one another to attract students given the high proportion of schools to population. This may make them more likely to be incentivized by energy and cost savings projects.

The international Talloires Declaration, a seminal SHE proclamation from 1990, has been signed by hundreds of universities around the world; 52% of Canadian universities are signatories, and 50% of the university presidents that participated in the study represented institutions that were signatories. This had no particular bearing on the results, but demonstrates the popularity of SHE within Canadian schools, at least symbolically.

Canadian university presidents are relatively homogenous, demographically speaking. The majority of participants interviewed were male (84%) and Caucasian (99%). Because of their position they are, at least by research definitions, considered elite participants. The majority of presidents' educational backgrounds were in the arts (52%) with math or science as a distant second (24%). The remainder came from varied backgrounds. There was no particular correlation between educational background and attitude towards sustainability, though many referenced their experiences in these fields as contributing to their worldview. Most presidents had been in their position at a school for between one and ten years, and though the data were not mined for correlations between attitudes towards sustainability or barriers and years of experience, it could be an interesting inquiry in the parameters of another study.

The rationale for collecting this demographic information adheres to the practice of CBSM, which promotes understanding the particulars of a community (in this case universities and university presidents) before developing strategies towards increasing environmentally positive behaviour. It was also collected to look for

possible trends between attitude and demographic factors, though no strong correlations occurred outside of key issues and geography as described above.

Chapter One laid out major events in the history of university policy and funding as it relates to the Canadian experience. This information was based on a contemporary literature review and helped illuminate participant responses within the context of the experiences of Canadian universities and roles of their presidents. Most notably, the shift to federal funding reliance in depression-era and post-World War II era created the Tri-Council of research agencies (Natural Science and Engineering Research Council, Social Studies and Humanities Research Council, and Canadian Institute of Health Research), an arms-length trio of federal agencies that is the major funder for research in Canada. Additionally, the rapid expansion of universities in an optimistic, post-war Canada created several large facilities that are now energy-draining and requiring maintenance and revitalization.

Understanding the role (and limitations) of a university president is also key to understanding the responses given by participants. Presidents largely identified themselves as facilitators of their university's mission and vision, often joking about their work as a figurehead or bustling from meeting to meeting. Many credited university staff specifically for doing strong sustainability work, and several noted a more tenuous or careful relationship with faculty so as not to infringe on their rights of academic freedom in their research or teaching. In particular, this impaired their ability to intervene or promote sustainability as a goal for education or research on campus, noting it would be more appropriate for deans and faculty to pursue this trajectory.

This more democratic approach to management stems from the Duff-Berdahl Commission of 1966, which outlines the governance structure of the universities, as well as a culture of academic freedom. Faculty and staff contribute to university decisions more so than in the private sector, including the creation of new programs and hiring of administrators (Clark, 2003). Understanding that the power a university president wields is ultimately more

limited than their counterparts in private industry helps us understand the limitations of the work a university president can do to contribute to a holistic approach to sustainability and emphasizes the need for buy-in from the whole campus community.

What are the Key Issues facing Canadian Universities?

Canadian presidents participating in this study almost unanimously declared finances as the primary issue facing universities. Financial issues as a top concern was stated explicitly by many participants (73%) while others spoke about it in other terms, including reduced government funding and deferred maintenance requirements. Financial issues also related meaningfully to other responses – a number of participants cited meeting societal expectations as a concern, which was similar to Wright's finding of maintaining social relevance as a key issue for participants (2010). As demonstrated in Chapter Two, the idea of remaining socially relevant and a competitive option is related to securing funding from increased student populations, which increases funding from the province. Conveying relevance is a contemporary issue for Canadian universities as the role of the academy within society and how well it is meeting social expectations has been increasingly debated (Anderssen, 2012; Coates & Morrison, 2011). Attracting and retaining quality students (27%) and faculty (15.4%) was a closely related topic to finances – that is, the level of public funding is largely determined by student enrollment figures (Coates & Morrison, 2011; Paul, 2011) - and the creation of a satisfying and quality environment for them.

Certainly this emphasis on financial issues was evident in sustainability discussions. Top-cited barriers and benefits to participating in sustainability work were financial considerations, and conceptualizations of a sustainable university included sustaining the university itself in the given fiscal and competitive climate. The significance of funding issues to SHE in a Canadian context cannot be overlooked if practical recommendations are to be taken seriously by universities and administrators.

4.2 Recommendations for Practice

Based on the analysis and key findings in relation to the literature review, the following eight recommendations were developed from this study, organized by cohort of administrators, SHE practitioners and advocates, and government policy makers.

4.2.1 For Administrators

Research suggests that sustainable development is best implemented with a localized definition (Kates, Parris & Lesierowitz, 2005) and that the values of an organization need to be aligned with said definition in order to be successful (Burnes & Jackson, 2011). Thus, a first important step to creating a sustainable university is for each institution to develop their own definition that aligns with their campus-wide short, medium, and long-term vision.

Presidents are in the position to take the lead in the creation of a sustainability vision for their institutions, using the democratic organization of the university to gain input and community buy-in. These definitions may not be as holistic as a SHE scholar's, but likely have a higher chance of being successfully implemented. The creation of this vision may come from a multi-stakeholder council on sustainability or from a campus community event. The president can then work with senior administration and deans to incorporate this vision into the mandate and strategies of faculties, facilities management, research, teaching, and governance. Rather than emphasizing external declarations on SHE, making concrete commitments in internal university documents like a strategic academic plan seems more significant in ensuring follow-through on sustainability goals.

Universities could make excellent advocates for sustainability to both communities and government in Canada. As places of education and research,

universities help facilitate knowledge creation and promotion and its stakeholders could do more to advocate for their visions of sustainability and guide Canada to stronger environmental commitments. The strong ethical and moral obligations university presidents demonstrated in their feelings of sustainability demonstrate that they believe strongly in their convictions on acting on environmental priorities. Advocacy has often been connected with universities, due to their active student populations and critical thinking through research and teaching. University presidents could take a lead on this by advocating for better environmental decision-making from government and business, two bodies it shares close ties to.

4.2.2 SHE Practitioners and Advocates

Given the above research findings of a localized and organizationally-aligned definition of sustainability being best-suited for follow-through, sustainability practitioners and advocates should help presidents facilitate the creation of a localized SHE definition and strategy rather than advocating for "best" practices. These practitioners may include formal employees within a sustainability office, students from an organization promoting SHE or other invested stakeholders. From this initial interpretation universities can collectively aspire to a more holistic interpretation once initial progress has been made on issues that naturally align with the existing values and vision of the institution. Understanding the limitations of a university president and recognizing which stakeholders can influence different elements of sustainability will also help a holistic vision come into fruition (e.g. working with deans and faculty on curriculum and research goals, and physical operations with administrators).

Creating measurable, specific and localized goals will help universities become more accountable and trust-worthy in their sustainability declarations and claims and will help highlight existing barriers. Advocates can ask the university to make these goals public commitments. For their part, advocating for sustainability projects that emphasize cost-savings or will likely attract students and faculty will inevitably align this work with the priorities of the university. If

SHE can be seen as a mechanism for reaching other institutional priorities is will have a greater likelihood of succeeding.

The emphasis on financial constraints throughout the interviews also demonstrates a need to make strong and university-specific cases for sustainability projects. In general, it is understood that there are financial gains to be made by reducing emissions and decreasing energy and resource use, which creates better cases to put forward to administrators in terms of getting their commitment to supporting sustainability projects.

4.2.3 For Government Policy Makers

Given the financial strains on the university, provincial and federal leaders should emphasize funding and policies that allow universities to progress on deferred maintenance for aging buildings that require retrofits to make them more energy-efficient projects. These will have a direct impact on the environment, showcase the university's commitment to sustainability projects, and cultivate energy savings that can be re-invested in future SHE projects. Provincial leaders could adjust policies that discourage or prohibit universities from investing in SHE initiatives (such as provinces where green energy must be sold back to the grid instead of used on campus), and invest in energy saving initiatives through grants and other capital investments. A more thorough review of policies that impede SHE, including university funding models (in particular the per-student funding regimen), green energy policies, etc. should be a long-term goal for policy-makers to help schools reach their sustainability targets, particularly reducing their energy budgets.

Federal and provincial governments should support and recognize the university's role in society, working with them to achieve global competitiveness in research and teaching. If our universities continue to struggle with day-to-day operations, leading to an overall reduction in time, focus and money for other initiatives, they can hardly take on the task of addressing sustainable development or any other major societal issue. While research from

faculty and students contributes meaningfully to sustainability in higher education, the issue is complex and serious enough that it requires attention from the whole university community. Additionally, utilizing the best and latest research that our universities produce on sustainability demonstrates internal recognition of the university's contributions and excellence in this area.

4.3 Research Contributions

Beyond practical recommendations, this study helped fill two gaps in the scholarly literature and offered a modest demonstration on how the lens of environmental psychology, social marketing and framing can be applied as a framework for SHE.

The first gap in the literature was a lack of understanding about how university presidents conceptualize sustainability. Research shows that for sustainability initiatives to be successful in higher education, it is essential to have the support of high-level administrators (Filho, 1999; Michell, 2011; Hammond Creighton, 2001), making it particularly significant to document and understand senior administrator's understanding and conceptualizations of this concept; however, this cohort's perspectives are rarely captured in SHE literature (Emanuel & Adams, 2011; Wright, 2010) and understanding their perspectives on the university and sustainability offers insight into the barriers to and motivation for SHE.

The second gap was a lack of understanding about SHE in the Canadian context. Although some studies to date have included an examination of SHE in a Canadian context (see, for example, Dahms et al, 2008; Helferty & Clarke, 2009; Wright, 2010), the majority of publications use American or other European universities as case studies (Levy and Marans, 2012; James & Card, 2012). Given the unique governance and funding models of Canadian universities and challenges and opportunities facing them explored in chapter one, documenting the Canadian experience offers a unique contribution to the literature.

Finally, this thesis draws from fields outside of SHE and sustainability studies to offer a new conceptual lens for analysis. Instead of comparing participants' responses to promising practices in SHE or other sustainability literature, this study used environmental psychology, CBSM and framing to examine responses and suggest recommendations. Many of these fields, CBSM in particular, have been applied for straightforward environmental projects. For example, increasing recycling or reducing littering. In other cases, such as the linguistic and framing work, these concepts have been used in political spheres but not directly in sustainability studies. Applying non-traditional lenses that have potential to offer new insight and practical solutions for SHE was a unique though modest attempt to use the research products from our academic institutions to help it become more sustainable. Any fields that are oriented towards change-management have potential for SHE.

The findings of this research have been disseminated to the academic community via this thesis and conference presentations. In addition, a letter for interview participants inviting them to read the results of the study will be sent out promptly (Appendix 11), and the results will also be shared with practitioners and government officials in relevant positions.

4.4 Study Limitations and Recommendations for Future Research

The objectives for this study were met through the analysis of interviews with Canadian university presidents. As all studies do, there were parameters to the research questions and the analysis and interviews that make up the limitations of the study and also suggest potential lines of future research and inquiry.

4.4.1 Study Limitations

Some of the reasons new questions emerged from this study are because, like any research endeavor, there were limitations to what it could cover. Study limitations included time and money, which were major factors for choosing phone interviews over in-person interviews (Canada is a geographically vast country and reaching each president in their own schools would have been extremely expensive and time consuming). Rather than limit the potential participants to a smaller sample, it was deemed more appropriate to include as many of the presidents who showed interest in participating. As noted in Chapter One, phone interviews are sometimes treated with skepticism by researchers but are proven to be a reliable method (Sturges & Hanrahan, 2010), particularly for elite populations like university presidents (Mikecz, 2012).

Due to the time restrictions on a masters thesis (two years), there were limitations to the amount of literature that could be applied as a conceptual lens. Though an appropriate amount of literature was engaged to inform and design this work, much of it concentrated on research methods and methodological approaches. From there, two areas were prioritized for a literature review, a contemporary review of SHE materials and a primer in Canadian university policy and issues. If time had permitted, a full review of conceptual lenses and approaches from environmental psychology fields could have been applied more fully. Instead, they were modestly addressed as potential ways to view the results or apply them in future research or application.

4.4.2 Recommendations for Future Research

This study unearthed new lines of inquiry that would be best explored in further research. Five recommendations for future research are outlined below.

1. A comparison of various university stakeholders' conceptualizations of sustainable   development,

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sustainable universities and their role in creating a sustainable future.

This thesis focused on university administrators as a part of a larger study supported by a Standard Research Grant from the Social Sciences and Humanities Research Council of Canada (Principal Investigator - Dr. Tarah Wright, Dalhousie University) that involved collected data from three other stakeholder groups: staff, faculty and students. Understanding how these conceptualizations interact will be an interesting step to see how sustainability is envisioned by different stakeholders, examine which elements are best addressed by each group, and identify any gaps or opportunities to work together.

2.   Examine ways to reduce barriers and increase benefits to SHE.

Now that the barriers that prevent engagement in sustainability and the benefits that presidents see from sustainability initiatives are understood, we can try to reduce these barriers and increase benefits. Since funding and finances were of particular interest, research that links any sustainability projects to financial savings (of which some already exist) will be significant for motivating greater practice. In particular, any studies that unearth what sustainability projects are most likely to attract faculty and students to a university (which presidents articulated as a priority) would be helpful.

3.   Investigate novel conceptual lenses for analyzing SHE.

As demonstrated in this study, environmental psychology, social marketing, linguistic framing, and change management are all relevant fields of study to draw on in order to understand how to articulate messages around sustainability and operationalize a vision and strategy. To date, little research from these fields has been applied to SHE, or only for straightforward changes. Research on how to optimize knowledge from these fields into practice for SHE could offer new insight and help progress projects and cultivate a culture of environmentalism in the academy.

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4.   Envision a role for the Canadian university.

Finally, though there is literature articulating the history and policies of Canadian universities and media questioning the role of academia, little literature exists exploring what the role of a university is and ought to be in a Canadian context. With a hazy understanding of this, universities, and their presidents, often struggle to articulate and balance institutional goals and visions, let alone be able to effectively address questions of sustainability. Further, more research exploring the potential of SHE to help strengthen a Canadian commitment to environmental practices would be of great help to portray campus sustainability as more than a practice of greening operations and demonstrate potential cultural diffusion and impact.

5.   Perform follow-up interviews to measure the impact of original participation

This study was preceded by a pilot study by Wright (2010) and it would be worthwhile to continue this line of inquiry for several purposes. Since it was one of the objectives of this study to be catalytic, hoping that participation in the interviews would give participants an opportunity to reflect on SHE and how it relates to their work, measuring the potential impact of this study by conducting this work would give insight into whether or not this objective was met. Additionally, pursuit of sustainability and the concepts around them are not static, nor are universities and their priorities. Thus, performing this study periodically could help researchers and practitioners understand the continuing challenges, opportunities and discourses surrounding SHE in Canadian universities from the perspective of presidents.

4.5 Concluding Comments

This group of 26 Canadian university presidents demonstrated considerable knowledge and depth of thought regarding sustainable development. When trying to articulate a conceptualization of a sustainable university, most presidents concentrated on physical operations, suggesting that they think other elements of SHE, such as research and education, fall outside of their jurisdiction. They made it clear that finances are currently the major issue facing Canadian universities, and that the major barriers and benefits of sustainability within the university are financially related, though each university had its own unique budgetary limitations and opportunities based on size, debt, population, deferred maintenance projects, private donors, to name a few. As such, any SHE projects that align with financial priorities, either through energy-reduction strategies or the attraction of students, which increases funding received from the provinces, will increase the likelihood of buy-in from administrators.

The benefits, barriers and motivating factors surrounding SHE programming is particular to each institution, though there were some broad findings that effected many universities. The culture of each individual institution seems to contribute greatly to their interpreted vision of sustainability and sustainable universities, as well as perceived barriers and benefits. It is, therefore, highly recommended that institutions create and articulate their own definitions, creating tangible goals to work towards drawing from the existing fundamentals and literature that exists. Many institutions have done so with physical operations but will need buy-in from faculty and deans to address research and education.

Using CBSM, combined with environmental psychology and linguistic framing, as a conceptual model for SHE breaks the mold of using this approach for straightforward behavioural changes like increased recycling, and expands it into more complex sustainable behaviours. Though the same rate of measurable success may not be possible, applying tactics from social change theory to complex applications of sustainability still shows potential to increase pro-environmental behaviour and gives insight for policy makers, practitioners and advocates on how to cultivate a stronger commitment to sustainability. SHE

literature has rarely applied conceptual lenses from these fields, instead typically measuring participant responses and experiences to "best practices" from SHE or sustainability literature.

In general, more attention has been paid to American or Commonwealth countries' university experiences with SHE than Canadian universities, and the history, policies and contemporary challenges facing these academic institutions relate directly to SHE. This study has been a modest attempt to work towards addressing some of these gaps in the literature as well as illuminating potential areas of research and recommendations for practice that could be emphasized within a new understanding of sustainability in higher education.

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Appendices

Appendix 1: List of English-Language AUCC Accredited Universities

1. Acadia University
2. Cape Breton University
3. Dalhousie University
4. University of King's College
5. Mount Saint Vincent University
6. Nova Scotia Agricultural College
7. Nova Scotia College of Art and Design (NSCAD) University
8. St. Francis Xavier University
9. Saint Mary's University
10. Memorial University of Newfoundland
11. Mount Allison University
12. University of New Brunswick
13. St. Thomas University
14. University of Prince Edward Island
15. Bishop's University
16. Concordia University
17. McGill University
18. Algoma University
19. Brock University
20. Carleton University
21. University of Guelph
22. Lakehead University
23. Laurentian University of Sudbury
24. McMaster University
25. Nipissing University
26. Ontario College of Art and Design University
27. University of Ontario Institute of Technology
28. University of Ottawa
29. Queen's University
30. Redeemer University College
31. Ryerson University
32. St. Jerome's University
33. University of Sudbury
34. University of Toronto
35. Trent University
36. University of Waterloo
37. University of Western Ontario
38. Wilfrid Laurier University
39. University of Windsor
40. York University
41. The University of British Columbia
42. Emily Carr University of Art and Design
43. University of the Fraser Valley
44. University of Northern British Columbia
45. Royal Roads University
46. Simon Fraser University
47. Thompson Rivers University

48. Trinity Western University
49. Vancouver Island University
50. University of Victoria
51. University of Alberta
52. Athabasca University
53. University of Calgary
54. Concordia University College of Alberta
55. The King's University College
56. University of Lethbridge
57. Mount Royal University
58. First Nations University of Canada
59. University of Regina
60. University of Saskatchewan
61. Brandon University
62. Canadian Mennonite University
63. University of Manitoba
64. University of Winnipeg

Appendix 2: Background Information on Canadian Universities, Total Population vs. Participants

Geographic Representation of Canadian Universities (All Schools vs. Participants)

Geographic Area	All Universities (%)	Study Participants (%)
West	27	28
Central	10	12
East	41	28
Atlantic	22	32
N/A	2	0
Total	**100**	**100**

Year of Establishment of Canadian Universities (All Schools vs. Participants)

Year Established	All Universities (%)	Study Participants (%)
1785-1799	3	8
1800-1899	30	36
1900-1949	23	16
1950-present	30	28
N/A	14	12
Total	**100**	**100**

Talloires Signatory	All Universities (%)	Study Participants (%)
Yes	52	50
No	48	50
Total	**100**	**100**

Talloires Declaration Signatories (All Schools vs. Participants)

Appendix 3: Background Information on Participating Canadian University Presidents

Gender of Participating Canadian University Presidents

Gender	Study Participants (%)
Male	84
Female	16
Total	**100**

Academic Background of Participating University Presidents

Academic Background	Study Participants (%)
Law and Policy	8
Religious Studies	8
Math and Science	24
Health Studies	4
Arts	52
Finance	4
Total	**100**

Number of Years as President at Current School, Participating Presidents

Years as President	Participants (%)
Less than 1	8
1 to < 3	24
3 to < 5	28
5 to < 10	24
10 +	16
Total	100

Appendix 4: Recruitment Letter of Introduction from Dr. Tom Traves

Dear _____

I am writing to inform you of an interesting and innovative SSHRC-sponsored project initiated by one of our faculty members at Dalhousie University. Dr. Tarah Wright is a sought-after expert in the emerging field of sustainability in higher education and brings a passion for the environment, a belief in the power of collaboration, and tremendous enthusiasm and energy to her role as lead researcher in a study on conceptualizations of sustainability in higher education.

Dr. Wright is exploring how four university stakeholder groups (administration, staff, faculty and students) conceptualize sustainability. The purpose of the study is to examine how a cohort of university presidents in Canadian universities conceptualize sustainable development, sustainable universities, the role universities play in achieving a sustainable future, key issues facing the university and barriers to implementing sustainability initiatives on campus. A pilot study from 2006 helped unearth some meaningful results and this study aims to further illuminate the subject.

In order to understand conceptualizations of administration, Dr. Wright is focusing on university Presidents, and hoping to achieve a sizable sample from the AUCC-registered universities to extract some meaningful results. Dr. Wright's research assistant, Rebecca McNeil, will be following up with you shortly in order to engage you in a phone interview at your convenience, and I encourage you to consider participating in this study. In the meantime, should you have any questions, please feel free to contact me or Dr. Wright directly (tarah.wright@dal.ca or 902.494.3683).

Sincerely,

Tom Traves, Ph.D.

President

Dalhousie University

Appendix 5: Interview Guide

1. What are the key issues facing this university over the next 10 years?
2. What steps would you say your institution has taken to incorporate sustainability into its mandate?
3. When you hear the term sustainable development, what does this mean to you? (followed by administration of Checklist #1)
4. What role, if any, do you feel universities in general should play in achieving sustainability?
5. When you hear the term "sustainable university" what does this mean to you? (followed by administration of Checklist #2)
6. What, if any, barriers to you see preventing your university from engaging in sustainability initiatives?
7. Do you foresee different barriers and challenges in the future?
8. What benefits do you see from engaging in sustainability initiatives?
9. What factors do you think would make becoming a model of sustainability the top priority for your university?
10. Has your institution signed any sustainability declarations?
11. Do you see any value in general in such declarations?
12. What would you say is the defining feature of your leadership style?
13. What legacy do you hope to leave at your institution through your tenure as President?

Appendix 6: Sustainable Development and Sustainable University Checklists

Checklist #1: Sustainable Development Concepts

Please check off which of the following you feel are the essential aspects of sustainable development:

☐   Conservation of species diversity

☐   Conservation of species that benefit the human race

☐   Conservation of genetic diversity within species

☐   Conservation of biodiversity

☐   Acceptance of species extinction provided there is no impact on the human world

☐   Equity among present generations

☐   Equity among those of future generations

☐   Development and preservation of natural capital

☐   Increase in global GDP

☐   Appropriate economic development

☐   Increasing economic growth

☐   Halting the depletion of the non-renewable resource base at a manageable level

☐   Conservation and enhancement of the resource base

☐   Maintenance of appropriate human population level

☐   Prevent populations from exceeding their carrying capacity

☐   Ensure a continual level of consumption

☐   Increase average quality of life standards

☐   Increase longevity of human life

☐   Equality among various age groups

☐ Gender equality

☐ Greater regional self reliance

☐ Greater individual self reliance

☐ Shift from a national government to a global government

☐ Integration of environment, social concerns, and economics into decision-making

☐ Inherent valuing of the nonhuman world

☐ Favouring aspects of the nonhuman world that have benefit to the human race

☐ Sacrifice of nonhuman species to provide humans with the essentials for survival

☐ Determining the carrying capacity of earth

☐ Species growth is limited by carrying capacity

☐ Equitable provision of basic needs

☐ Balance high CO_2 levels with an increase in the number of trees planted

☐ Maintaining and enhancing cultural diversity

☐ Political diversity

☐ Satisfy vital human needs

☐ Other: _____

☐ Other: _____

Checklist #2: Sustainable University Concepts

Please check off which of the following you feel are the essential aspects of sustainable universities:

☐ The university makes sustainability issues a top priority in campus land-use

- ☐ The university makes sustainability issues a top priority in campus transportation

- ☐ The university makes sustainability issues a top priority in campus building planning

- ☐ Installs solar panels on campus buildings

- ☐ Incorporates environmental knowledge into all relevant disciplines at all levels of study

- ☐ Research done on campus must include a summary of potential environmental issues that may be faced during the course of the experiment

- ☐ Arranges opportunities for students to study campus and local sustainability issues

- ☐ Consults students on their opinions of sustainability

- ☐ Provides incentives for students to participate in environmentally friendly activities

- ☐ Performs regular sustainability audits on campus

- ☐ Performs sustainability audits on the surrounding community

- ☐ Establishes environmentally and socially responsible purchasing practices

- ☐ Provides support for individuals who seek environmentally and socially responsible careers

- ☐ Encourages students to participate in various volunteer activities around the community

- ☐ Creates a written statement of their commitment to sustainability

- ☐ Each department within the university must create their own written statement of their commitment to sustainability

- ☐ Encourages critical thinking about sustainability issues

- ☐ Provides monetary reimbursement for individuals taking environmental courses

☐ Establishes policies that allow for the hiring, promoting, and granting tenure to faculty based on their knowledge of and work in sustainability

☐ Establishes policies allowing for the termination of faculty if they fail to incorporate environmental strategies into their course material and research

☐ Reduces the ecological footprint of the university

☐ Reuses campus waste

☐ Uses renewable and safe energy sources

☐ Emphasizes sustainability through support services

☐ Engages in community outreach programs that benefit the local environment

☐ Creation of green community centers to benefit the local environment

☐ Creates partnerships with government, non-governmental organizations, and industry working toward sustainability

☐ Greater self reliance within the university

☐ Other: _____

☐ Other: _____

Appendix 7: Summary of Results from Open, Axial and Selective Coding Phases

Phase one, open coding: list of condensed themes extracted from original codebook

The content below reflects themes found in the open coding phase. In the first round of open coding the list was longer, less refined and not grouped in any particular order. This list represents the final phase of open coding where patterns begin to emerge and content is grouped such. There are also niche themes that appear in brackets next to larger themes.

- Cultural influence on sustainable development conceptions
- Politics and policies surrounding sustainable development
- Sustainable development and ethics (old ways of thinking, emergent ideas)
- Priorities for sustainable development (evolution of ideas, intergenerational equity, global equity)
- Sustainable universities and education (formal – cross-disciplinary, community outreach through curriculum and coursework)
- Sustainable universities and education (informal – internal communities, imparting of values, preparation for inheritance of environmental problems, diffusion of education to communities)
- Sustainable universities and ethics (green washing)
- Sustainable universities and technology
- Sustainable universities and facilities (aging infrastructure, energy, waste reduction, water, green spaces)
- Finances (for sustainability initiatives, as a key issue, as a barrier, as a benefit, policy restrictions, national issue, fiscal responsibility – as an ethical imperative for universities)
- Politics and policies (internal – the policies of the university surrounding sustainability, hiring/firing of faculty, procurement)
- Politics and policies (external – funding policies from provincial/federal bodies, restrictive in sustainability work)
- Key issues (priorities, strategic planning, stakeholders, finances, facilities)
- Geography (social/cultural influence, reflecting the choices of the university in sustainability)
- Role of the university (ethical imperatives, education, research, leadership, values)
- Cultural influence
- Research (faculty, priorities, community outreach/influence)
- Sustainable universities (examples)
- Stakeholders (internal and external)
- Barriers (finances, stakeholders, facilities, policies and politics, habits and behaviours, organizational structure)
- Benefits (role of the university, financial incentives, stakeholders, priorities, self perception and legacy)

Phase two, axial coding: themes categorized, based on research objectives and conceptual frameworks

Sustainable Development:
- Cultural Influence
- Politics & Policies
- Ethics
- Priorities

Sustainable Universities:
- Education (Cross-disciplinarity, Habits & Behaviours, Research)
- Ethics (Green Washing)
- Facilities (Technology)
- Finances
- Politics and Policies (Organizational Structure)
- Key Issues (Priorities, Strategic Planning, Stakeholders)
- Geography (Cultural Influence)

Role of the University:
- Cultural Influence (Ethics)
- Education
- Research
- Sustainable Universities
- Key Issues (Priorities)

Key Issues Facing the University:
- Priorities (Strategic Planning)
- Facilities
- Finances (Strategic Planning)
- Politics and Policies
- Stakeholders

Barriers:
- Ethics
- Finances (Facilities, Politics & Policies)
- Stakeholders (Habits & Behaviours, Organizational Structure)
- Priorities (Role of the University, Strategic Planning)

Benefits:
- Cultural Influence (Role of the University)
- Finances (Politics & Policies)
- Stakeholders (Key Issues, Priorities)
- Self Perception & Legacy

Phase three, selective coding: a brief analytical description of core categories and of relationships between categories

Sustainable Development: The most well defined concept in terms of "eco literacy," which participants described accurately (yet broadly) using the Brundtland definition (without direct reference to the document).

Major Subcategories: cultural influence, politics and policies, ethics, emergent/evolutionary ideas, intergenerational equity, global equity.

Connecting Themes: Relevant most to the category of "Sustainable Universities" as participants shifted a broad definition to a more operationalized one.

Sustainable Universities: More vast description from participants, found in the direct question of what the term "sustainable university" meant to participants as well as throughout interview content. Can be seen as a localized or operationalized definition of the concept of "sustainable development."

Major Subcategories: Education (formal and informal), curriculum, community, values, preparation for addressing environmental problems, ethics, green washing, technology, facilities, infrastructure, energy, waste, water, green spaces

Connecting Themes: How participants conceived of a sustainable university had bearing on how they interpreted benefits and barriers associated with becoming a sustainable institution.

Role of the University: Not a directly-asked question, the theme emerged naturally from participant suggestions and responses about the appropriateness of their actions related to activities surrounding sustainability initiatives and the university itself).

Major Subcategories: Cultural influence, ethics, education, research, leadership.

Connecting Themes: Like "sustainable university" how a participant conceived of the role of the university related to the benefits perceived about becoming sustainable, but also what the key issues/priorities of the institution might be).

Key Issues Facing the University: The first question participants were asked, this category fleshed out the major priorities for universities and contextualized much of the remaining interview content.

Major Subcategories: Finances, facilities, education, stakeholders, priorities, strategic planning.

Connecting Themes: This category had bearing on almost all subsequent categories.

Barriers to Sustainability Initiatives: This category outlined the major issues restricting the uptake of sustainability initiatives. Importantly, these are from the

perceptions of the participants, some having more or less basis in reality (meriting further research).

Major Subcategories: Finances, aging infrastructure, facilities, stakeholders, behaviours, habits, priorities, strategic planning).

Connecting Themes: Related to benefits of sustainability initiatives (sometimes in contrast, sometimes an issue was deemed both a barrier and benefit).

Benefits of Sustainability Initiatives: This category outlined the major motivations behind pursuing sustainability initiatives. Again, these are perceptions, which merits further research into the substance of each documented benefit.

Major Subcategories: Role of the university in society, key issues, priorities and strategic planning, financial incentives, public perception, self perception, legacy.

Connecting Themes: Relates to barriers to implementing sustainability work.

Appendix 8: Participants Reactions to "Sustainable Development" Concepts

Checklist #1: Sustainable Development Concepts (Areas of Deviation)

Concept	% Disagree	% Agree	Consensus Reached
Conservation of genetic diversity within species	43	57	N
Equity among present generations	48	52	N
Equity among those of future generations	57	43	N
Development and preservation of natural capital	57	43	N
Appropriate economic development	35	65	N
Halting the depletion of the non-renewable resource base at a manageable level	65	35	N
Conservation and enhancement of the resource base	48	52	N
Maintenance of appropriate human population level	52	48	N
Prevent populations from exceeding their carrying capacity	78	22	N
Increase average quality of life standards	57	43	N
Equity among various age groups	65	35	N
Gender equality	39	61	N
Greater regional self reliance	57	43	N
Greater individual self reliance	57	43	N
Inherent valuing of the nonhuman world	35	65	N
Determining the carrying capacity of	57	43	N

	% Disagree	% Agree	Consensus Reached
earth			
Species growth is limited by carrying capacity	74	26	N
Equitable provision of basic needs	35	65	N
Balance high CO2 levels with an increase in the number of trees planted	61	39	N
Maintaining and enhancing cultural diversity	35	65	N
Political diversity	61	39	N
Satisfy vital human needs	57	43	N
Maintaining and enhancing cultural diversity	35	65	N
Political diversity	61	39	N
Satisfy vital human needs	57	43	N

Checklist #1 Sustainable Development Concepts (Areas of Consensus)

Concept	% Disagree	% Agree	Consensus Reached
Conservation of species diversity	13	87	Y
Conservation of species that benefit the human race	87	13	Y
Conservation of biodiversity	17	83	Y
Acceptance of species extinction provided there is no impact on the human world	100	0	Y
Increase in global GDP	91	9	Y
Increasing economic growth	83	17	Y
Ensure a continual level of consumption	96	4	Y
Increase longevity of human life	87	13	Y
Shift from a national government to a global government	96	4	Y
Integration of environment, social concerns, and economics into decision	13	87	Y

making			
Favouring aspects of the nonhuman world that have benefit to the human race	91	9	Y
Sacrifice of nonhuman species to provide humans with the essentials for survival	96	4	Y

Appendix 9: Participants Reactions to "Sustainable University" Concepts

Checklist #2: Sustainable University Concepts (Areas of Consensus)

Concept	% Disagree	% Agree	Consensus Reached
The university makes sustainability issues a top priority in campus building and planning	13	87	Y
Arranges opportunities for students to study campus and local sustainability issues	9	91	Y
Consults students on their opinions of sustainability	17	83	Y
Performs regular sustainability audits on campus	17	83	Y
Establishes environmentally and socially responsible purchasing practices	17	83	Y
Encourages students to participate in various volunteer activities around the community	13	87	Y
Each department within the university must create their own written statement of their commitment to sustainability	91	9	Y
Encourages critical thinking about sustainability issues	13	87	Y
Provides monetary reimbursement for individuals taking environmental courses	100	0	Y
Establishes policies that allow for the hiring, promoting, and granting tenure to faculty based on their knowledge of and	96	4	Y

	% Disagree	% Agree	Consensus Reached
work in sustainability			
Establishes policies allowing for the termination of faculty if they fail to incorporate environmental strategies into their course material and research	100	0	Y
Reduces the ecological footprint of the university	9	91	Y
Reuses campus waste	17	83	Y

Checklist #2: Sustainable University Concepts (Areas of Deviation)

Concept	% Disagree	% Agree	Consensus Reached
The university makes sustainability issues a top priority in campus transportation	43	57	N
Installs solar panels on campus buildings	74	26	N
Incorporates environmental knowledge into all relevant disciplines at all levels of study	43	57	N
Research done on campus must include a summary of potential environmental issues that my be faced during the course of the experiment	61	39	N
Provides incentives for students to participate in environmentally friendly activities	52	48	N
Performs sustainability audits on the surrounding community	78	22	N
Provides support for individuals who seek environmentally and socially responsible careers	52	48	N
Creates a written statement of their commitment to sustainability	26	74	N

Uses renewable and safe energy sources	30	78	N
Emphasizes sustainability through support services	22	78	N
Engages in community outreach programs that benefit the local environment	30	65	N
Creation of green community centers to benefit the local environment	70	30	N
Creates partnerships with government, non-governmental organizations, and industry working toward sustainability	22	78	N
Greater self reliance within the university	52	48	N

Appendix 10: Participants' Examples of Sustainability Activities, Categorized

Example given by participant:	Category	Subcategory
Committee for a green campus (faculty, staff and students) as ongoing auditors or monitors.	Auditing	Auditing and Monitoring
Energy audit.	Auditing	Measurement
Any field of study can achieve a minor in sustainability.	Education	Curriculum
Addition of faculty position on environmental programming.	Education	Curriculum
Student learning opportunity on recycling, organics and reuse.	Education	Education and Awareness
Sustainability education project (with sustainability mascot).	Education	Education and Awareness
Reduce, reuse recycle ethos among student body and student associations.	Education	Education and Awareness
Campus educational initiatives (wacky sweater day to promote turning down the thermostat).	Education	Education and Awareness
Individual energy conservation (turning off lights, computers)	Education	Education and Awareness
Trayless cafeteria (as a modeling tool).	Education	Education and Awareness
Using paper on both sides, re-using waste paper.	Education	Education and Awareness
Green roofs.	Education	Education and Awareness
Sustainability coordinator.	Misc.	Organizational Structure
Grounds keeping (recycling or reusing	Operations	Technical (Design)

organics).		
Campus transportation (parking lots vs. public transportation).	Operations	Technical (Design)
Planning of water fountains.	Operations	Technical (Design)
Grounds keeping (watering, layout, species, etc.).	Operations	Technical (Design)
Removal of toxic materials (asbestos).	Operations	Technical (Design)
Reduction of GHG emissions (setting targets).	Operations	Technical (Energy)
Replacing energy systems.	Operations	Technical (Energy)
Biomass gasification system.	Operations	Technical (Energy)
Updating HVAC system.	Operations	Technical (Energy)
Co2 reduction.	Operations	Technical (Energy)
Campus-grown biomass for fuel.	Operations	Technical (Energy)
Geothermal heating for new residence.	Operations	Technical (Energy)
Integrated systems using wind, solar, geo-thermal and mine water.	Operations	Technical (Energy)
Low-flow toilets.	Operations	Technical (Energy)
Professors engaging students in the renovation of a building.	Operations	Technical (Energy)
Shifting from oil to gas.	Operations	Technical (Energy)
Fuel conversion or in conversion to water, water savings, equipment, toilets and so on.	Operations	Technical (Energy)
Airtight windows.	Operations	Technical (Energy)
Green building.	Operations	Technical (Energy)
Retrofitting to create energy efficiency and power consumption, heating and air conditioning.	Operations	Technical (Energy)
LEED buildings.	Operations	Technical (Energy)
Geothermal energy.	Operations	Technical (Energy)
Heat transfer from thermal pipes as a	Operations	Technical (Energy)

primary means of heating and cooling buildings.		
Passive energy, or passive conservation design in buildings.	Operations	Technical (Energy)
Energy retrofits.	Operations	Technical (Energy)
LEED certification.	Operations	Technical (Energy)
Energy audit.	Operations	Technical (Energy)
LEED certification for all new buildings.	Operations	Technical (Energy)
Energy conservation.	Operations	Technical (Energy)
Renewable energy (solar panels, wind mills, co-generators).	Operations	Technical (Energy)
LEED buildings.	Operations	Technical (Energy)
Co-generation model of heating.	Operations	Technical (Energy)
Helping the local community develop a retirement home using the benefits of mine water.	Operations	Technical (Energy)
LEED certification for all new buildings.	Operations	Technical (Energy)
Reduction of Co2 emissions.	Operations	Technical (Energy)
LEED certification for all new buildings.	Operations	Technical (Energy)
Green roofs.	Operations	Technical (Energy)
Energy audit.	Operations	Technical (Energy)
Energy efficient buildings through faculty research.	Operations	Technical (Energy)
Individual energy conservation (turning off lights, computers)	Operations	Technical (Energy)
Food services.	Operations	Technical (Waste)
Trayless cafeteria.	Operations	Technical (Waste)
Trayless cafeteria.	Operations	Technical (Waste)
Rooftop water collection (for use on grounds).	Operations	Technical (Waste)
Reusing wastewater.	Operations	Technical (Waste)
Trayless cafeteria.	Operations	Technical (Waste)

You know using paper on both sides, re-using waste paper.	Operations	Technical (Waste)
Banning bottled water.	Policy	Policy
Institutional sustainability policy.	Policy	Policy
Board of Governors sustainability policy.	Policy	Policy
Anti-idling policy.	Policy	Policy
Bottled water ban.	Policy	Policy
Public transportation.	Policy	Policy
Campus transportation (parking lots vs. public transportation).	Policy	Policy
Joint purchasing network for more sustainable and socially just purchasing.	Policy	Policy
Green purchasing policy.	Policy	Policy
Environmental research centers.	Research	Research
Environmental and social justice research group.	Research	Research
Helping the local community develop a retirement home using the benefits of mine water.	Stakeholder Engagement	Stakeholder Engagement
Student-run farm, produce used in cafeteria.	Stakeholder Engagement	Stakeholder Engagement
Engaging students on sustainability policies.	Stakeholder Engagement	Stakeholder Engagement
Encouraging students to participate in various volunteer activities around the community.	Stakeholder Engagement	Stakeholder Engagement
Sustainability plan driven by students, faculty and staff.	Stakeholder Engagement	Stakeholder Engagement
Committee for a green campus (faculty, staff and students) as ongoing auditors or monitors.	Stakeholder Engagement	Stakeholder Engagement
Addition of faculty position on environmental programming.	Stakeholder Engagement	Stakeholder Engagement

Reduce, reuse recycle ethos among student body and student associations.	Stakeholder Engagement	Stakeholder Engagement
Campus educational initiatives (wacky sweater day to promote turning down the thermostat).	Stakeholder Engagement	Stakeholder Engagement
Energy efficient buildings through faculty research.	Stakeholder Engagement	Stakeholder Engagement
Individual energy conservation (turning off lights, computers)	Stakeholder Engagement	Stakeholder Engagement
Environmental Sustainability Committee (with faculty, staff and student representation).	Stakeholder Engagement	Stakeholder Engagement
Professors engaging students in the renovation of a building.	Stakeholder Engagement	Stakeholder Engagement

Appendix 11: Letter to Canadian University Presidents Disseminating Results

President _____ ,

Last year you and 25 other Canadian university presidents participated in an interview to share your thoughts on sustainable development and sustainability in higher education. You and your colleagues shared visions, concepts and ideas, as well as the barriers to implementing environmental sustainability initiatives and, of course, the motivations that lead you aspire to work towards being a more sustainable institution.

I would like to share some of these findings, which I have developed into a full manuscript for this SSHRC-funded study.

Major Findings:

- There was general consensus on the concept of sustainable development, while more nuanced ideas of what constituted a "sustainable university." Research suggests, however, that localized definitions are more likely to be implemented.

- Most of the conversations focused on the physical operations of the school, rather than other facets such as teaching or research —not surprising given the extent to which participants also discussed financial constraints facing Canadian universities.

- Though participants consistently discussed financial restrictions, they also discussed extensively the pervasiveness of behaviours and attitudes that make it difficult to foster sustainability (i.e. the difficulty of change for some university stakeholders). Another noted barrier was existing provincial or federal policies restricting the university to invest in "green" initiatives.

- Motivations for working towards a sustainable university were largely from a moral or ethical drive, the desire to create a culture on campus that reflects student's concerns, and because participants felt it aligned with existing university values.

The valuable insight from these discussions helped create several recommendations for various stakeholders invested in helping Canadian universities become more sustainable when analyzed in the context of a Canadian university experience.

Recommendations:

- *De-bunking the myth of "best practices":*
  Sustainable practices are most likely to be adopted when they are aligned with the existing vision of the university, as well as their mission and goals. The idea of sustainability should be narrowed to a localized vision created by the stakeholders at each institution as each school is unique in their ability.

- *Provincial and Federal Policy and Budget Reviews:*
  Provinces should review existing policies and budgets for areas that allow universities to maximize investments in "greening" deferred maintenance on aging structures (of which there is much of in Canada) to reduce unnecessary energy and budgetary waste.

- *Fewer Declaration, Greater Measurable Commitments:*
  Rather than declarative initiatives, universities seem more likely to follow through with commitments that mirror their own institutional processes, by creating smart and measurable commitments that they share with the public and come from their shared visioning exercises.

- *Becoming a strong leader in the Canadian Sustainability Story:*

Universities tend to have positive and highly literate concepts of sustainability and are powerful stakeholders in Canadian communities. Becoming leaders on the major societal and ecological issues of our time demonstrate the essential social services universities provide through their teaching, research and community contributions at a time of their continued questioning.

This brief summary of high-level findings and recommendations is the tip of the iceberg for this study. It is one part of a four-part series studying four university stakeholders' conceptualizations of sustainability (staff, faculty, students and administrators). The forthcoming results from this meta-study should further illuminate misconceptions and barriers amongst stakeholders that impede progress.

Additionally, the findings and recommendations from this study show potential for sharing with administrators, working groups, practitioners, policy-makers and others who can contribute to Canada's universities leading our nation to greater understanding and implementation of sustainable practices.

And finally, your interview can be the beginning of a larger conversation. Should you be interested, I would love to share my full findings, summarized in two publishable manuscripts, as well as supplementary findings about the current profile of Canadian universities and their presidential leaders.

Thank you once again for participating so earnestly in this study. You may contact me at any time at rebecca.mcneil@dal.ca or (902) 401-8621 for further information.

Rebecca McNeil
Masters of Environmental Studies Candidate, 2013, Dalhousie University