

AN INVESTIGATION INTO CANADIAN STUDENT LEADERS'
CONCEPTUALIZATIONS AND PERCEPTIONS RELATED TO SUSTAINABILITY
IN HIGHER EDUCATION

by

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Dedication

I dedicate this thesis to my parents, Barb and Carl Elliott, for all of their support during the last five years; through all of the ups and downs, they have been a constant source of love and encouragement.

Table of Contents

List of Tables	vii
List of Figures	viii
Abstract.....	ix
List of Abbreviations Used.....	x
Glossary	xi
Acknowledgements	xiii
Chapter 1: Introduction	1
1.1 Background.....	1
1.2 Problem.....	3
1.3 Research Goals and Objectives	6
1.4 Research Questions.....	8
1.5 Thesis Structure	8
1.6 Bibliography	10
Chapter 2: Literature Review.....	15
2.1 Sustainable Development & Sustainability Definitions	15
2.2 History of the Terms.....	17
2.3 Current Usage	21
2.4 Criticisms of the Terms	26
2.5 Benefits of the Terms.....	27
2.6 Sustainability and Education	27
2.7 Sustainability in Higher Education.....	29
2.8 History of Sustainability in Higher Education.....	30
2.9 Sustainability in Higher Education in Canada.....	36
2.10 Barriers and Motivators to University Sustainability	38
2.10.1 Barriers.....	38
2.10.2 Motivators	41
2.11 Shared Conceptualizations.....	43
2.12 Students as a University Stakeholder	44
2.13 Student Involvement in Sustainability in Higher Education	45

2.14 Research on Students' Understandings of Sustainability and Sustainable Universities	50
2.15 Research Rationale for the Current Study	53
2.16 Bibliography	56
Chapter 3: Methods.....	69
3.1 Inspiration.....	69
3.2 Research Questions.....	69
3.3 Theoretical Framework.....	70
3.5 Participants	74
3.6 Pilot.....	76
3.7 Ethics	76
3.8 Procedures	77
3.8.1 Recruitment	77
3.8.2 Data Collection.....	77
3.9 Analysis	81
3.10 Language	83
3.11 Study Design Limitations	85
3.12 Technical Limitations	86
3.13 Role of the Researcher.....	87
3.14 Researcher's Perspective	87
3.15 Bibliography	91
Chapter 4: Sustainability and Sustainable Universities as Conceptualized by Canadian Student Leaders.....	96
4.1 Introduction	96
4.2 Methods	98
4.3 Results and Discussion	101
4.3.1 Conceptualizations of Sustainable Development	103
4.3.2 Conceptualizations of the University's Role in Achieving Sustainability	110
4.3.3 Conceptualizations of Sustainable Universities	111
4.3.4 Overarching Themes	118
4.4 Conclusion	119
4.5 Bibliography	122

Chapter 5: Barriers to sustainable universities and ways forward:

Canadian Student Leaders' Perspectives	125
5.1 Abstract.....	125
5.2 Introduction	125
5.3 Background.....	127
5.3.2. Motivators for Sustainability.....	131
5.3.3 Neoliberalism and the Academy	131
5.3.4 Students Involvement in Canadian Sustainability in Higher Education.....	132
5.4 Methods	134
5.5 Results & Discussion.....	136
5.5.1 Perceived Key Issues Facing Universities in the Next 10 Years.....	136
5.5.2 Perceived Barriers to Sustainability in Higher Education	139
5.5.3 Perceived Barriers Now vs in the Future?.....	144
5.5.4 Perceived Motivators for Sustainability in Higher Education.....	145
5.5.5 Students as Customers.....	147
5.6 Conclusion	150
5.6.1 Recommendations	152
5.7 Bibliography	156
Chapter 6: Conclusion.....	161
6.1 Summary of Research.....	161
6.2 Main Findings.....	163
6.2.1 Conceptualizations of Sustainability	163
6.2.2 Role of Universities in Striving for a More Sustainable Future	164
6.2.3 Conceptualizations of Sustainable Universities	164
6.2.4 Barriers and Incentives to University Sustainability	166
6.2.5 Commodification and Corporatization.....	167
6.3 Research Contributions.....	168
6.4 Practical Recommendations.....	172
6.4.1 Students' Unions	172
6.4.2 Future university students.....	174
6.5 Limitations.....	175
6.6 Future Research	176
6.6.1 A Comparison of Canadian University Stakeholders' Conceptualizations.....	176

6.6.2 Ongoing Snapshots and Comparisons of Canadian SU Presidents’ Conceptualizations	177
6.6.3 Investigation into and Comparison with Other Canadian Students’ Conceptualizations	177
6.6.4 International Comparisons of Conceptualizations.....	178
6.7 Concluding Comments	178
6.8 Bibliography	181
Bibliography	184
Appendix 1: Interview questions for SU Presidents	203
Appendix 2: Checklist of Sustainable Development Concepts to be used in study	204
Appendix 3: Checklist of Sustainable University Concepts to be used in study	206
Appendix 4: Recruitment E-mail.....	208
Appendix 5: Consent Form.....	209
Appendix 6: Debriefing Form.....	213
Appendix 7: Confidentiality Agreement for Transcribers.....	216
Appendix 8: Confidentiality Agreement for Additional Services	217

List of Tables

Table 1. Summary Table of important declarations and statements for SHE...	30
Table 2: Study's university size categories for participating Canadian SU presidents' universities.	79
Table 3. Interview questions.....	Error! Bookmark not defined.
Table 4: Study's university type for participating Canadian SU presidents' universities.....	103
Table 5: Study's university size categories for participating Canadian SU presidents' universities.	103
Table 6: Sustainable Development Concept Checklist results.	109
Table 7: Concepts added to the Sustainable Development Concept Checklist by participants	Error! Bookmark not defined.
Table 8: Canadian SU Presidents' Sustainable University Concept Checklist results.....	Error! Bookmark not defined.
Table 9: Concepts added by Canadian SU Presidents' to the Sustainable Universities Concept Checklist.	Error! Bookmark not defined.

List of Figures

Figure 1: Interlocking ring or Venn diagram representation of sustainability	22
Figure 2: A “mickey mouse” or distorted representation of the Venn diagram of sustainability.	23
Figure 3: A visual representation of the “three pillar” conceptualization of sustainability	23
Figure 4: Concentric ring visual representation of sustainability	26
Figure 5. Comparison of represented and non-represented universities in the study by province.	102
Figure 6. Participants’ programs of study.	102
Figure 7. Comparison of represented and non-represented universities in the study by province.	135
Figure 8: Canadian SU presidents’ responses to if and how the idea of “students as customers” affects sustainability on their campuses.....	148

Abstract

While universities have a responsibility to engage in sustainability, efforts to do so are not yet standard practice. This may be due to the limited knowledge about how university stakeholders understand sustainability. This study investigated conceptualizations of sustainability and sustainable universities by student union presidents at 27 Canadian universities; it also examined perceived barriers and motivators to sustainability in higher education (SHE). This investigation utilized thematic analysis and the amount of participant support to analyze semi-structured interviews and concept checklists. Findings indicated considerable conceptual variance regarding sustainability although there was a greater consensus of ideas regarding what constituted sustainable universities. Participants noted that while many barriers to SHE exist, including finances and attitudes, there are also many possible motivators, including finances and student pressure. This study demonstrates that a single definition of sustainability or sustainable universities is unlikely and recommends including all stakeholders in localized discussions of SHE.

List of Abbreviations Used

AASHE – Association for the Advancement of Sustainability in Higher Education
AUCC – Association of Universities and Colleges of Canada
CASA – Canadian Association of Students’ Associations
CAUBO – Canadian Association of University Business Officers
CAUT – Canadian Association of University Teachers
CCSDR – Canada Green Building Council and the Canadian Consortium for Sustainable Development Research
CFS – Canadian Federation of Students
CICIC – Canadian Information Centre for International Credentials
CSAF – Campus Sustainability Assessment Framework
DESD – Decade of Education for Sustainable Development
EE – Environmental Education
EfS – Education for Sustainability
ESD – Education for (or about) Sustainable Development
GHG - Greenhouse Gas Emissions
HEIs – Higher Education Institutions
IFPU – International Forum of Public Universities
LEED – Leadership in Energy and Environmental Design
SD – Sustainable Development
SHE – Sustainability in Higher Education
SU – Students’ Union (also sometimes called a student union, students’ federation, students’ association)
SYC-CJS – Sierra Youth Coalition – Coalition jeunesse Sierraa
ULSF – University Leaders for a Sustainable Future
UN – United Nations
UNEP – United Nations Education Programme
UNESCO – United Nations Educational, Scientific and Cultural Organization
WSCSD – The World Student Community for Sustainable Development
WSSD – World Summit on Sustainable Development
WWF – World Wildlife Fund

Glossary

While a number of definitions exist for the following terms, this is how the researcher conceptualized them.

Commercialization – A process through which a product is developed to the point that it can be made available for sale to customers. This term is often seen as positive because the creation of a new product can provide financial support for additional idea and activities. Commercialization of research is now a common activity at research universities that helps provide necessary funding for further research investment.

Commodification – A process through which something that cannot be owned or should be a public good (e.g. education) is turned into a product that can be bought and sold. There are often negative connotations associated with this term.

Corporatization – A process through which organizations or institutions assume an outlook and operations that focus on making a profit, similar to a business or corporation. This process is often associated with neoliberalism and in some circles is associated with negative connotations.

Intragenerational Equity – This is the idea that all resources should be shared in a way that all people have what they need to survive and/or prosper now. This concept includes the idea of poverty elimination.

Intergenerational Equity – The idea of all resources shared in an equitable fashion, or a way that ensures everyone has what they need to survive and/or prosper between generations (into the future).

Neoliberalism – A political economic theory that fully embraces the idea of the free market and its ability to balance itself without regulation. It has an emphasis on decreasing government expenditures for social services, an increased emphasis on the individual over the collective and a belief in the privatization of public enterprise. It also includes the belief that sustained economic growth is imperative. An example of this in practice is the decreased government funding to universities and the increasing reliance on students' tuition and fees as a revenue source.

Sustainability – This is an umbrella term that includes the ideas of sustainable development, but with recognition of how both society and the economy are dependent upon the environment. This means that the environmental is prioritized over other aspects of sustainability. It is often the preferred term of non-governmental organizations and academics instead of SD. It is also considered an ever-changing end goal. As new information is obtained, the state in which these aspects (environment, society, economy) will be balanced changes and therefore the end goal continues to change as well.

Sustainable Development (SD) – The main idea associated with this term is the need for a balance between ecological integrity, social equity and economic prosperity (the three pillars). Additional key concepts include systems thinking, limits, intergenerational and intragenerational equity. Governments and the private sector tend to prefer this term instead of sustainability. There are many definitions and criticisms of SD, including that it is often anthropocentric with an emphasis on development without acknowledging environmental limits. It can be understood as the process through which to reach the end goal of sustainability.

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Chapter 1: Introduction

1.1 Background

In recent years the world has been faced with large-scale, high impact challenges including a loss of biodiversity (World Wildlife Federation [WWF], 2012), economic turmoil with bailouts in many countries including the United States of America and Greece (Donadio, 2012; Greece News, 2012; MacEwan & Miller, 2011), social unrest in the Middle East (Blight, Pulham & Torpey, 2012) and exposure to more extreme weather events likely due to climate change (Intergovernmental Panel on Climate Change [IPCC], 2007; IPCC, 2012). In addition, studies show that humans are consuming natural resources at a rate that exceeds the planet's environmental limits (Litten & Terkla, 2007; WWF, 2012). All of these examples support the argument that humanity is living unsustainably.

Sustainability has evolved through international discussions as a way to try and balance the diverse needs of people today and over subsequent generations while staying within the environmental carrying capacity of the planet. Within this thesis sustainability will be used as an umbrella term for sustainable development (SD) and its associated ideas. The most well-known definition comes from the World Commission on Environment and Development (WCED)'s Brundtland Report which states that SD is "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987, p.4). The generally accepted view of sustainability involves making decisions that take into account the so-called "three pillars" of economy, society, and environment (Dale & Hill, 2001; Dale & Onyx,

2005; Robinson, van Bers & McLeod, 1996). Some academics call for protection of environmental capital first and foremost, as it is the basis for the other two (Adetunji, Price, Fleming & Kemp, 2003; Prescott-Allan, 2001), giving the argument that without a healthy ecosystem, the other pillars will cease to exist. Sustainability's global importance has been recognized internationally through its inclusion in Agenda 21 (United Nations General Assembly, 1992), three of the United Nations' Millennium Development Goals (The World Bank Group, 2012), the United Nations' Decade for Education for Sustainable Development (United Nations General Assembly, 2002) and the Earth Charter (The Earth Charter Initiative, 2012).

Education for and about sustainability is necessary in order to teach people the concepts of sustainability, systems thinking and how to apply them to solve complex problems. Universities are well-placed to influence the future leaders of society through their academic programming, operations and campus culture, what McMillin & Dyball (2009) called the "whole-of-university approach". Universities have been recognized as having a particular responsibility to help create a sustainable future due to their role in educating future leaders and creating knowledgeable citizens, as well as for having previously taught unsustainable practices; their role as large employers, their research capabilities and their impact in the local community are additional reasons why they should be involved (Bachiorri & Puglisi, 2007; Bartlett & Chase, 2004; Clugston, 1999; Cortese, 2003; Orr, 1992; University Leaders for a Sustainable Future [ULSF], 1990; United Nations Educational, Scientific and Cultural Organization [UNESCO], 2005). Due to their size and scope, universities can also act as role models for the surrounding

communities and form positive, engaging partnerships by sharing knowledge and best practices.

While efforts have not been universal, a number of universities worldwide have been working to implement campus sustainability through a variety of initiatives such as sustainability audits, energy efficiency measures, and academic interdisciplinary programs focused on sustainability (e.g. Buszard & Kolb, 2011; Mitchell, 2011; Sharp, 2002). This is important for the aforementioned reasons, but the wide variety of initiatives means that universities are spreading their energy in a number of directions instead of being able to fully target their resources. This broad focus is, in part, due to the diversity of sustainability definitions that may focus on a single aspect, such as minimizing negative environmental impacts, or multiple aspects, such as social equity, economic prosperity and environmental integrity. In addition, these definitions may consider all constituent aspects as equally important or rank them in terms of perceived importance.

1.2 Problem

Even though the sustainability has become rather mainstream since the Brundtland Report (WCED, 1987), there are still many different definitions and understandings associated with the concept. Over the past 30 years, many definitions and interpretations have appeared in the literature. By 1994, more than 80 definitions had been identified (Holmberg, 1994) and as many as 200 were believed to be in use by the dawn of the 21st century (Parkin, 2000). A very basic definition of sustainability according to the current study's researcher is a balance between ecological, social and economic limits and the needs of organisms on Earth in a way that does not entitle one

organism to more than another, now or in the future. Additionally, the term sustainability has come to be used sometimes interchangeably with SD. Some people argue this is done incorrectly because of concerns that SD implies continuously increasing development without ensuring it is within environmental limits (Emanuel & Adams, 2011) while sustainability recognizes ecological integrity as the key aspect. Robinson (2004) noted that governments and private sector tend to use SD while non-governmental organizations and academics prefer to use sustainability for the reason given in the previous sentence. Sustainability practitioners often differentiate between the two (Harding, 2006) with sustainability referring to a constantly evolving holistic end goal, and SD as the process of working toward sustainability (Harding, 2006; Parkin, 2000; Robèrt, 2000).

The sheer number of definitions and interpretations has led to criticisms of the concepts of sustainability. It has been criticized for being a buzzword (Wikström, 2010), a cliché (Holmberg, 1994) and an oxymoron in the case of SD specifically (Tryzna, 1995). The oft-cited Brundtland Report definition has been criticized for being vague or ambiguous (Adams, 2006; Adetunji *et al.*, 2003; Daly, 1996; Gibson, 1991; Lélé, 1991), meaningless (Adetunji *et al.*, 2003), anthropocentric (Gibson, 1991; Wackenagel & Rees, 1996; Wright, 2002) and having too many conflicting ideas attached to it (Adams, 2006). With all of the criticisms associated with sustainability, there has been some discussion about creating and implementing a new term, such as “resilience” (Zolli, 2012), although some think it should instead be included as an aspect of overall sustainability (Lélé, 1991; Magis, 2010; Milman & Short, 2008).

There are a number of benefits to continuing to work with the terms “sustainability” and “SD” although research is needed to better understand how these terms are conceptualized and used. These terms are now commonly used throughout the literature and in everyday conversation. It took years for sustainability and SD to become as well-known and applied as they are today (Adams, 2006). If a new term was chosen to replace sustainability, it would require a similar time frame to become mainstream, but change is needed now. The ability of these terms to unite divergent ideas about protection for the environment, economic development and society is considered both a strength and a weakness (Adams, 2006; Lélé, 1991). A great benefit of these terms is how they are able to bring together diverse groups including business people, social justice activists and environmentalists to discuss ways to balance these three pillars (Molnar & Morgan, 2001).

While sustainability in higher education (SHE) experts have a relatively common conceptualization of sustainability and sustainable universities (Wright, 2007), there are few studies that examine university stakeholders’ (e.g. administrators, staff, faculty, students, community members) understandings and/or knowledge of these terms. Notable exceptions include McNeil (2013), Sylvestre (2013), Wright (2010), Wright & Horst (2013) and Wright & Wilton (2012) who determined common conceptualizations of these terms held by Canadian university presidents, faculty and facilities management directors. Still, more research is required to further understand how other university stakeholders conceptualize these terms, particularly students (Carew & Mitchell, 2002).

Students represent a large and diverse university stakeholder population. Their numbers, role and significant contribution to university budgets in the form of tuition (Little, 1997; Mackenzie & Rosenfeld, 2002; Robertson, 2003) provide them with a level

of influence in university matters. In addition, they usually have at least one elected representative on the university senate, board of governors and some committees. As such, it is important to understand how they conceptualize SD and sustainable universities. Even though Canada has an active and vocal student movement for SHE (Calder & Clugston, 2003; Sierra Youth Coalition - Coalition jeunesse Sierra [SYC-CJS], 2008; SYC-CJS Atlantic, 2008; Canadian Youth Climate Coalition [CYCC], n.d.a), this thesis is the first known study to investigate their conceptualizations.

Understanding sustainability is seen as one of the first steps towards becoming involved with campus sustainability efforts (Emanuel & Adams, 2011) and as George Harrison wrote in “Any Road”, “If you don't know where you're going, any road will take you there”. If universities do not have a solid grasp on what being a sustainable institution means to their stakeholders, they may expend energy and resources in all directions without achieving their goal. While Wals & Jickling (2002) stated that the “messiness” of the term sustainability is useful for allowing dialogue within the universities about their goals, they also deemed it important to have a common understanding in order to assess progress. Since Keniry (1995) and Newman & Abrams (2005) demonstrated that all university stakeholders need to be involved in campus sustainability in order to ensure long-term success, this research will contribute to closing the knowledge gap about how university students conceptualize these terms and thus provide insight on how to involve them.

1.3 Research Goals and Objectives

This research was an exploratory mixed methods study that aimed to investigate Canadian student union [SU] presidents’ conceptualizations of SD and sustainable

universities, as well as the expected role for universities in moving towards a more sustainable future. As such, the main objective of the research was to create a baseline of these conceptualizations at this point in time. This will allow for a general comparison of SU presidents' conceptualizations to those of SHE researchers and potentially other university stakeholders. It will also provide insight as to which conceptualizations are shared or contested and whether a single definition is even possible or desired by Canadian student leaders.

As previously noted, SHE literature has described a variety of possible barriers and motivators to operationalizing SHE, although again, the student perspective is missing. As such, a goal of this research is to explore and create a collection of the perceived barriers and motivators perceived by student leaders. This will also provide the opportunity for comparison to those perceived by other university stakeholders and within SHE literature. By achieving this objective, it may be possible to provide some recommendations to SUs on how to further engage with sustainability on their campuses and will provide university administrators and SHE practitioners with additional perspective.

The final goal of this research is to stimulate thought and discussion concerning sustainability amongst student leaders and their university communities to allow for greater community engagement, visioning and education for sustainability (EfS). Stimulating dialogue between stakeholders is important as it allows discussion of the plurality of ideas related to sustainability (Franz-Balsen & Heinrichs, 2007) and can lead to the creation of local understandings, definitions, and shared visions (Kurland, 2011). A shared vision of sustainability amongst stakeholders is an important step to engaging buy-

in for university sustainability initiatives and their success (Djordjevic & Cotton, 2011; Kurland, 2011; Newman & Abrams, 2005). To this end, this research encouraged discussion about visions of sustainability through discussing the existing lack of shared vision with SU presidents across Canada during the interviews. It attempted to further stimulate this through the dissemination of information to interviewees, SUs and related organizations across Canada.

1.4 Research Questions

This study was guided by an overall research question – How do SU presidents in Canada understand SHE? This was broken down into four key sub-questions.

1. What are Canadian SU presidents' conceptualizations of sustainability?
2. What are Canadian SU presidents' conceptualizations of sustainable universities?
3. What do SU presidents perceive as the role of universities in striving for a more sustainable future?
4. What are the barriers or motivators to becoming a sustainable university perceived by Canadian SU presidents?

1.5 Thesis Structure

This thesis is presented in six chapters. Chapter 1 provides an overview of the problem, while Chapter 2 addresses the related literature. Chapter 3 elaborates on the research methods, while Chapters 4 and 5 are two independent manuscripts intended for publication; consequently, each includes its own introduction, literature review, methods, results, discussion and bibliography. Chapter 4 examines the resulting conceptualizations of sustainability and sustainable universities and the expected role of universities in striving for a more sustainable future. Chapter 5 examines the perceived barriers and

motivators to sustainability in Canadian universities and provides recommendations for ways in which SUs may try to address some of them. The sixth and final chapter contains an overall summary of the study and general conclusions, including reflections, research implications and suggestions for future areas of research.

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Chapter 2: Literature Review

2.1 Sustainable Development & Sustainability Definitions

The terms “sustainable development” (SD) and “sustainability” have evolved over decades (Leal Filho, 2000) with a variety of meanings (Mebratu, 1998) and have been the subject of both praise and criticism. In the past 30 years many definitions and interpretations have been created, with more than 80 being identified by 1994 (Holmberg, 1994), and as many as 200 believed in existence by 2000 (Parkin, 2000). Senge (2008) estimated 2000 different definitions could be found at the 2008 Association for the Advancement of Sustainability in Higher Education (AASHE) conference. With so many definitions, it can be easy to become confused or experience “paralysis by analysis” (Fien & Tilbury, 2002; Thomas, 2004) and have difficulty making progress towards a goal as intricate as sustainability. While some of the ideas associated with sustainability began surfacing in the 1970s (Leal Filho, 2000; United Nations [UN], 2011a), Mebratu (1998) traced related ideas (such as living in balance between people and the environment and environmental limits) through human history using religion and economic theory.

SD and sustainability are both complex and somewhat vague terms with many associated questions such as, “What are we developing and growing? Who benefits? How are these responsibilities shared?” The answers to these questions are further complicated by the context and the social group in which the terms are used (Fien & Tilbury, 2002). While there have been a variety of ideas associated with SD and sustainability, there appears to be a consensus on three concepts often included in sustainability definitions:

1. Natural resources are finite
2. Environmental, economic and social goals must be pursued within their limits

3. Inter- and intragenerational equity is necessary (Farrell & Hart, 1998).

The first concept illustrates the reality that there are limits to the materials derived from and services provided by the Earth that can be used without depleting those resources. If humanity does not live within these limits, it risks exhausting the supply of life-supporting resources. The second concept is embodied in the general view of sustainability as making decisions while trying to balance the “three pillars” – the economy, society, and the environment (Dale & Hill, 2001; Dale & Onyx, 2005; Robinson, van Bers & McLeod, 1996). Some conceptualizations of sustainability even break down the social pillar into smaller components, such as culture or politics (Global Compact Cities Programme, n.d.). Finally, intragenerational equity implies equity between the people of the world, regardless of country, race, gender, etc., while the intergenerational equity implies equity between the current and future generations of people (Adetunji, Price, Fleming & Kemp, 2003).

While SD and sustainability are somewhat similar and often used interchangeably, many practitioners still differentiate between their specifics (Harding, 2006). The former is often considered the process through which to reach the evolving goal of sustainability (Harding, 2006; Parkin, 2000; Robèrt, 2000), although Martin (2011) believed that sustainability should instead be viewed as the lens through which to approach decision-making. There is a concern that SD implies continuously increasing development without ensuring the primacy of environmental limits, thus making sustainability a better choice for a general term (Emanuel & Adams, 2011). For this reason and its use as an umbrella term, “sustainability” will primarily be used in this thesis.^{1,2}

¹ This use of sustainability as an umbrella term was not explained to participants because while the conceptualization-specific question and checklist specified SD, the other questions were more generally

2.2 History of the Terms

While there are discussions related to sustainability that can be traced to the ideas of Pythagoras in Ancient Greece, the global community began discussions about the concept of sustainability at the Intergovernmental Conference for Rational Use and Conservation of Biosphere in 1968. That idea continued to evolve through discussions at international conferences and reports such as the UN Conference on Human Environment (1972), the World Conservation Strategy (1980), the International Union for Conservation of Nature (IUCN) Conference on Environment and Development (1986), the Brundtland Report (1987), the UN Conference for the Environment and Development (1992), and the World Summit on Sustainable Development (2002). This evolution continued in 2012 with the UN Conference on Sustainable Development or Earth Summit 2012 (Stakeholder Forum for a Sustainable Future, n.d.). Each of these declarations and reports contributed to global conceptualizations of sustainability through the inclusion of various ideas.

The 1972 UN Conference on Human Environment is considered a pivotal moment in solidifying the environment as an international issue and connecting it inextricably with development (IISD, 1997; Melén-Paaso, 2007). It was at this conference that SD was first used in the international environmental community (Wright, 2002). The preamble and principles of the Declaration of the UN Conference on the Human Environment or Stockholm Declaration (UN, 1972) promote the idea of balancing the environment, quality of life and the economy to benefit all within current and future

about sustainability. Also, from my previous experience with SU presidents, they would have been more familiar with the term sustainability being used in the campus context (e.g. “Office of Sustainability” vs. “Office of SD”).

² The researcher did not alter the research instruments created by Wright (2010) that used SD, so in some cases of this thesis, the term SD will be used.

generations, promoting intra- and intergenerational equity – all ideas central to sustainability.³ This conference led to the creation of the United Nations Environment Programme (UNEP) to oversee environment initiatives of the organization (UNEP, n.d.).

Following the Stockholm Declaration, additional support for sustainability was found in the “World Conservation Strategy, Living Resource Conservation for Sustainable Development” (IUCN, 1980) and at the IUCN Conference on Environment and Development in 1986. Both included concepts related to the environment, society and the economy as key aspects of sustainability, and were concerned with intragenerational equity, although only the Strategy also included intergenerational equity. The Strategy was criticized for its focus on living resources and an inability to adequately handle sensitive or controversial issues (Khosla, 1987). It also had an anthropocentric view of sustainability as its goals were shaping the environment and finances to suit humans. The IUCN conference explicitly noted the importance of ecological integrity and maintaining cultural diversity (Jacobs, Gardner & Munro, 1987).

The next important international sustainability contribution was the Brundtland Report for the World Commission on Economic Development (WCED) in 1987. It is considered the most influential report on the topic. The report defined sustainability (then sustainable development) as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (WCED, 1987, p.4) and it is widely recognized as the starting point for discussions of the term (Holmberg, 1994; Lélé, 1991; Sneddon, Howarth & Norgaard, 2006). This conceptualization includes the key ideas of needs and limitations (Lélé, 1991; Mebratu, 1998), which help form a stronger connection between diverse areas, such as poverty

³ The Stockholm Declaration’s contributions to education will be discussed later in this chapter.

alleviation, economic development and environmental conservation. It also reaffirms the ethical concepts of inter-generational and intra-generational equity. Although short, the Brundtland definition has nine associated critical objectives, which include some new ideas such as reviving growth, reorienting technology, ensuring a sustainable population level and making development more participatory (Lélé, 1991; WCED, 1987). These objectives provide a bit more structure to the Brundtland conceptualization and many organizations in the mainstream subscribe to them, including international environment agencies or development agencies (Lélé, 1991).

Historically there have been many criticisms of the Brundtland definition. One of the primary criticisms of the definition is its anthropocentrism because it positions economic and social needs above those of the environment by focusing on the need for further development when the Earth is already over capacity (Gibson, 1991; Wackenagel & Rees, 1996; Wright, 2002). This includes supporting growth for developing and industrialized nations (Roseland, 2000) without calling on developed nations to decrease their consumption patterns. The Brundtland definition is often criticized for its vagueness or ambiguity (Adams, 2006; Adetunji *et al.*, 2003; Daly, 1996; Gibson, 1991; Lélé, 1991), having too many conflicting ideas attached to it (Adams, 2006), for being meaningless or for lacking a practical application (Adetunji *et al.*, 2003). It has also been disparaged for being only reformist instead of transformist due to its focus on improvements to the current system instead of suggesting a new and improved system (Thomas, 2004). Regardless of the aforementioned criticisms, the importance of the Brundtland definition of sustainability cannot be ignored.

A series of major conferences hosted by the UN, beginning with the Earth Summit, have provided a continued venue for international discussion, evaluation and promotion of sustainability. Officially known as the UN Conference for the Environment and Development in Rio (1992), the Earth Summit created 27 principles for sustainability (United Nations General Assembly, 1992; Drexhage & Murphy, 2010) and five major related documents. These principles included inter- and intragenerational equity; a balance between development (social and economic) and the environment; common, but differentiated responsibility⁴; the precautionary principle⁵; and the importance of peace, women, youth and indigenous people to sustainability (United Nations General Assembly, 1992). The creation of the Commission on Sustainable Development was also a direct result of this conference. This summit has been criticized for focusing too much on the environment, to the detriment of the economic and social aspects of sustainability (Drexhage & Murphy, 2010) and for focusing on the role of government to the detriment of individual responsibility and action (Leal Filho, 2011).

The World Summit on Sustainable Development (2002), also referred to as Rio+10, focused more on the importance of social and economic aspects of sustainability (Drexhage & Murphy, 2010). This included the need for partnership initiatives between governments and private enterprise or civil society (Heinrich Boll Foundation, 2003). Rio+10 drew attention to the idea of development including social development and not just standard economic development (Kates, Parris & Leiseroqitz, 2005).

⁴ The principle of common, but differentiated responsibility recognizes that nations have contributed varying amounts to global environmental degradation and that developed countries thus have a greater responsibility to remedy the situation (United Nations General Assembly, 1992).

⁵ The precautionary principle states that when there are risks of serious or irreversible damage to the environment that it is better to err on the side of caution and protect the environment (United Nations General Assembly, 1992).

The latest in this series of conferences, Earth Summit 2012, also known as Rio+20, focused on the social aspects of sustainability, such as including all stakeholders in major decisions and gender equity. It emphasized small steps to combat climate change (environment) and on enhancing the role and mandate of the UNEP (UN, 2012). A major result of the conference was the commitment to create sustainability goals to be enacted when the Millennium Development Goals expire in 2015. It did not achieve as much progress towards a stronger international sustainability movement as had been hoped due to difficulties obtaining consensus between governments (Howard, 2012, June 21; Parnell, 2012, June 26; Open Forum for CSO Development Effectiveness, 2012, June 26; Rio+20 ends with, 2012, June 23; United Nations Conference on Sustainable Development [UNCSD], 2012, June 28).

2.3 Current Usage

Although many definitions of sustainability now exist, a full review of all of these definitions is beyond the scope of this thesis.⁶ Three current conceptualizations of the term will be discussed here. These widely used conceptualizations have various orientations, often emphasizing a particular aspect of sustainability (e.g. environment) over the others. Additionally, they may be associated with a particular type of practitioner, such as governments, communities or businesspersons.

According to Drexhage & Murphy (2010), the dominant view currently held by business and government regarding sustainability is that it represents “continued economic growth made more environmentally sensitive in order to raise living standards globally and break the link between poverty and environmental degradation” (p. 10). This

⁶ For an interesting overview of sustainability definitions, read Kates *et al.* (2005).

is more in line with SD. It is often represented using a Venn diagram (see Figure 1), although the emphasis on the economy may lead to a distortion of the balance (Figure 2). While this view is one that can unite various stakeholders interested in issues as diverse as poverty, capitalism and biology, it also seems reformist and focused most on continuing economic growth. This seems to implicitly assume that either environmental limits do not exist or that technology will find a way to enable continued growth. This viewpoint also does not describe where this growth is expected, whether developed nations should scale back while developing nations ramp up their efforts, or whether continued growth is a goal for the entire globe. Particularly important is that there is no discussion of the long-term view or of intergenerational equity, which seems to imply that the perspective focuses on the here and now instead of a long-term caretaking perspective. This is a dangerous perspective as short-term goals may have serious and damaging long-term effects.



Figure 1: Interlocking ring or Venn diagram representation of sustainability (Thwink, 2012).

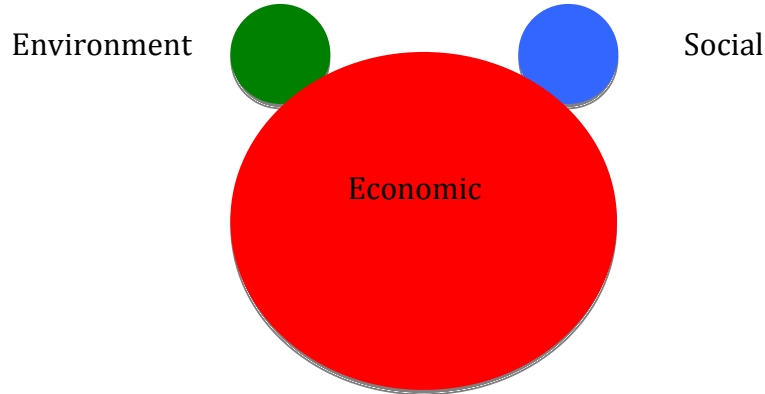


Figure 2: A “mickey mouse” or distorted representation of the Venn diagram. This representation of sustainability is based upon an overemphasis on economic aspects of the concept (Sustainable Aotearoa New Zealand Incorporated [SANZ], 2009).



Figure 3: A visual representation of the “three pillar” conceptualization of sustainability (Hecht, Fiksel & Anderson, 2011).

The “Triple Bottom Line”, also described as “People, Planet, Profits”, is a term coined by John Elkington (1997). It includes the three pillars of ecological integrity, social equity and economic prosperity (Dale & Hill, 2001; Dale & Onyx, 2005). This perspective can be represented by both Figure 1 and Figure 3. This describes a sustainability perspective that Spreckley wrote about (1981) that posited that businesses

needed to concern themselves with all three aspects instead of just financial performance. The Triple Bottom Line has been criticized for having too corporate a mindset, sometimes having a greater emphasis on the economic pillar and minimizing the social pillar (Magee *et al.*, 2013). While this may be true, it did introduce many businesses to the importance of sustainability and their businesses' impacts upon society and the environment.

One conceptualization of sustainability takes the three pillars above and ranks them based upon each pillar's importance to survival. This conceptualization recognizes the environmental limits within which society and the economy must exist (Lipp *et al.*, 2005; SANZ, 2009) and is sometimes referred to as "strong sustainability". Within this context, the economy is considered dependant upon both the environmental and social spheres, while society is dependent only on the environment (Prescott-Allen, 2001; Lipp *et al.*, 2005). The preservation of the integrity of the planet's ecological systems (their ability to recover from disturbances and re-establish stability and diversity) is essentially the key focus of this orientation of sustainability. As recognition of Earth's environmental limits has increased, so has the belief that this conceptualization of sustainability is the most appropriate (Lipp *et al.*, 2005). This is because the current economic system considers economic growth to be limitless and inherently good, ignores natural services provided by environmental systems (e.g. water purification) and regards humans as outside of the environment (SANZ, 2009).

There are various principles associated with this vision of sustainability: inter- and intra-generational equity, living within the planet's carrying and absorptive capacities, the precautionary principle (p.19), the internalization of negative externalities, considering

quantitative and qualitative integrity, and addressing problems from both the supply and demand side (Lipp *et al.*, 2005; SANZ, 2009, The Natural Step, n.d.). These principles represent the key elements of interdependence between people and between people and the environment. This interdependence is why systems thinking is often associated with sustainability (The Natural Step, n.d.).

Some alternative conceptualizations of sustainability include aspects beyond the three pillars of sustainability. One, the Circles of Sustainability (Global Compact Cities Cities Programme, n.d.; Scerri & James, 2010), reframes sustainability as a social construct and breaks the “social pillar” into politics and culture, and includes them with economics and ecology as its four domains. The domains are further dissected into subdomains, such as health & wellbeing or engagement & identity for culture (Circles of Sustainability, n.d.). This approach provides an integrated and participatory method for working towards sustainability and resiliency. It has been praised for including the importance of relationships between domain issues and indicators and for being more relevant to communities and governments than the Triple Bottom Line (Magee *et al.*, 2013).

There are three commonly used visual representations of sustainability. A concentric ring model based upon Prescott-Allen’s “egg of well-being” (2001) represents strong sustainability and is considered most appropriate by the researcher because the layering and size differential visually represents the importance of each topic to survival (Figure 4) (Adetunji *et al.*, 2003; Lipp *et al.*, 2005; Wright, personal communication, November 2009). Other visual representations include three actual pillars (Figure 3) and the easily recognized interlocking rings model (Figure 1), which was adopted by the

IUCN in 2005 (Allen, 2000). They both represent the idea of the triple bottom line. The interlocking ring model is likely the best-known visual model, but neither it, nor the three pillars, demonstrates the primacy of the environment (Adetunji *et al.*, 2003) that the concentric ring model promotes.

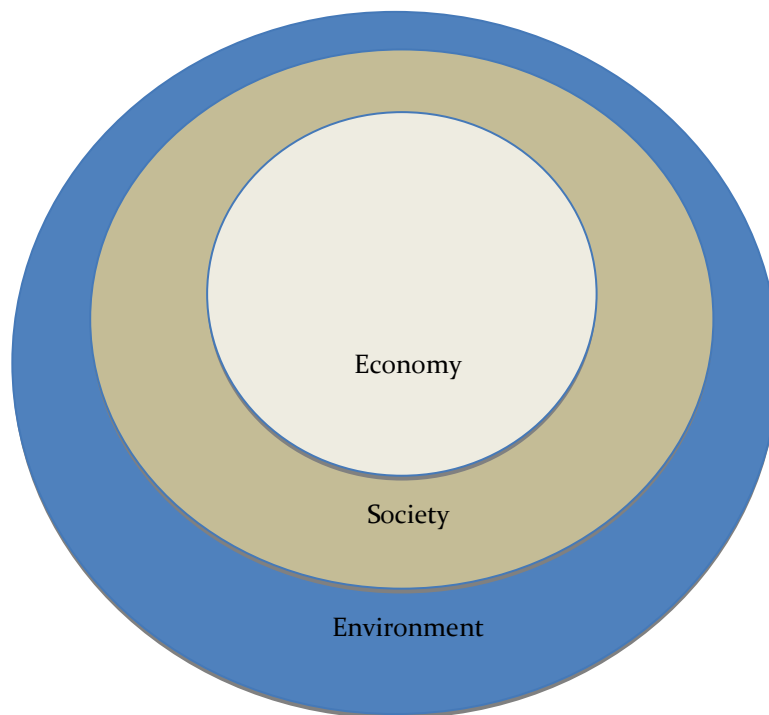


Figure 4: Concentric ring visual representation of sustainability adapted from Prescott-Allen's (2001) "egg of well-being."

2.4 Criticisms of the Terms

A number of criticisms have been levelled at the terms sustainability; criticisms specific to the Brundtland definition were noted earlier. General complaints include calling sustainability a buzzword (Leal Filho, 2011; Wikström, 2010) or a cliché (Holmberg, 1994). SD specifically has been called an "oxymoron" (Tryzna, 1995). Due to its broad scope, sustainability can be argued to mean everything and nothing all at once (Adams, 2006) and it makes the creation of shared understandings difficult. This has led

to concerns of “greenwashing” or using public relations to market something as environmentally-friendly or sustainable when it is not completely true (Martin, 2011). All of these concerns about “baggage” associated with the terms have led to the discussion of creating a new term, although no replacement has caught on.

2.5 Benefits of the Terms

There are a variety of benefits associated with continuing to use the terms sustainability and SD. They are now widely used and discussed, a major achievement that took decades to reach (Adams, 2006). This means that more people and organizations are aware of the need to reach a balance and that innovation is ongoing. Any attempt to introduce a new term would likely require similar efforts and time to become well-known. While some consider the lack of a single definition of sustainability to be a weakness (Lélé, 1991), there are many who believe that this is one of the terms’ greatest strengths in that they are able to bring together people of divergent attitudes and opinions by linking care for the environment with economic development and poverty reduction (Adams, 2006; Lélé, 1991). It is through this greater collaboration and participation that society may progress. These discussions challenge and expand the thinking and understanding of sustainability (Kates *et al.*, 2005), which is why stimulating such conversations between stakeholders is important.

2.6 Sustainability and Education

Education is seen as paramount to creating a sustainable society (McKeown & Hopkins, 2003; United Nations General Assembly, 2012) and discussion of how best to educate people has been ongoing. While environmental education (EE) was already being taught before sustainability made its debut, EE focuses mainly on the need to preserve the

Earth, reduce human impact and create an appreciation of the value of the environment. Education for (or about) Sustainable Development (ESD) and Education for Sustainability (EfS) differ from EE in that they require holistic systems thinking (Mckeown & Hopkins, 2003; United Nations Educational, Scientific and Cultural Organization [UNESCO], 2012). Some make a distinction between ESD and EfS, believing the former is to raise awareness of SD and that the latter is to educate people to implement sustainability, while others use them interchangeably (Mckeown & Hopkins, 2003). Some also make a distinction between Education *about* SD and Education *for* SD because they argue that the “for” demonstrates indoctrination about a poorly defined concept (Jickling, 1992; McClaren, 1993), while Mckeown & Hopkins (2003) note that “for” can also just refer to the purpose of the education.

This thesis will use EfS to refer to education about and for sustainability, backed by the assertion that one cannot learn how to implement or criticize something without first learning about it. While ESD is more often used within the international community (Mckeown & Hopkins, 2003) and in major declarations (e.g. Agenda 21, United Nations Decade of Education for Sustainable Development), as previously asserted, the researcher believes that sustainability is a more appropriate term and for consistency within this thesis will use EfS.

The international community has affirmed the need for EfS. The first instance of international commitment to it was Agenda 21 (1992), which stated “education is critical for promoting SD and improving the capacity of all people to address environment and development issues” (United Nations General Assembly, Chapter 36, 36.3, 1992). Chapter 36 of Agenda 21 focused on education and called on informal and formal

education to enable EfS (United Nations General Assembly, 1992) at all levels of education. Other international declarations that followed which echoed the call for EfS include the Declaration of Thessaloniki (UNESCO, 1997), the Johannesburg Declaration (World Summit on Sustainable Development [WSSD], 2002) and The Future We Want (United Nations General Assembly, 2012).

In order to promote and emphasize the importance of EfS around the world, the UN declared 2005-2014 the Decade of Education for Sustainable Development (DESD) (United Nations General Assembly, 2002). During this time period, EfS efforts have definitely increased, but much still remains to be done. According to many indicators, the world is still far from reaching sustainability and in some cases is even moving backwards (World Wildlife Foundation [WWF], 2012).

2.7 Sustainability in Higher Education

As the higher education sector and universities in particular have been implicated as having a responsibility to engage in sustainability (Bachiorri & Puglisi, 2007; Cortese, 2003; Orr, 1992; University Leaders for a Sustainable Future [ULSF], 1990; United Nations General Assembly, 1992) a new academic field, sustainability in higher education (SHE), emerged. It is a subset of education (Fien, 2002) and a specialization within sustainability scholarship (Leal Filho, 2005) that covers aspects of teaching, research, operations and partnerships in higher education related to sustainability. Universities educate many of the world's future leaders and with their large size and scope, they also can and sometimes do act as role models for the surrounding communities and form positive, engaging partnerships with communities by sharing

knowledge and best practices. Thus, it is particularly important to ensure sustainability is recognized and implemented in higher education.

2.8 History of Sustainability in Higher Education

The evolution of SHE can be traced through a number of significant declarations that commit higher education institutions (HEIs) to participating in EfS through informal and formal methods (Table 1). More than 1000 post-secondary education institutions have signed international SHE declarations (Wright, 2003; Bartlett & Chase, 2004).

Prior to SHE specific declarations, there were international commitments that addressed the education of various aspects of sustainability - this includes calls for EE. The previously mentioned Stockholm Declaration (UN, 1972) was the first to call for EE for every person throughout his or her lifetime. Five years later the UNESCO/UNEP Intergovernmental Conference on Environmental Education resulted in the Tbilisi Declaration. This declaration echoed the call for EE in all forms for everyone and called for universities specifically to become involved in teaching and training about environmental issues and conducting related research (UNESCO/UNEP, 1978). Its particular suggestions for universities included developing environmental curricula, engaging the campus community members in developing environmental awareness, creating regional and international co-operative projects educating the public on environmental issues (UNESCO/UNEP, 1978).

Table 1. Summary Table of important declarations and statements for SHE.

Name	# of Signatories	Year	Summary & Relevance
Stockholm Declaration		1972	- First declaration to call for EE for everyone throughout their lifetimes

Name	# of Signatories	Year	Summary & Relevance
Tbilisi Declaration		1977	<ul style="list-style-type: none"> - Called for preservation and improvement of the environment for the benefit of people now and in the future (intergenerational equity) - Also called for EE for everyone - Requested universities to teach and training about environmental issues and conduct related research
Talloires Declaration & 10 Point Plan	468	1990	<ul style="list-style-type: none"> - First official commitment to include environmental literacy and sustainability in education, research, policy formation and information exchange (ULSF, 2001) - Unfortunately there was minimal discussion of more sustainable social and economic policies on campuses - Focused on the links between world's production & consumption patterns and related environmental problems and poverty
Halifax Declaration and Action Plan	33 universities	1991	<ul style="list-style-type: none"> - Focused on concern for environmental sustainability & how universities can be involved in SD - Suggestions for universities' actions at the internal, regional, national and international levels; actions mainly focused on education & partnerships, including more interdisciplinary research
Agenda 21, Chapter 36	United Nations	1992	<ul style="list-style-type: none"> - Document that solidified the importance of SHE on the world stage to those outside of higher education - Called for SD to be incorporated into all disciplines and for all people to be taught - Specific to universities, it called for support of networks, inter-disciplinary courses for students and increased partnerships
Swansea Declaration	400+ *Does not look for more signatories	1993	<ul style="list-style-type: none"> - Members of the Association of Commonwealth Universities - First declaration to explicitly mention the interconnectedness of the environment, society and the economy - Urges universities to be role models for sustainability and create educational partnerships in their communities - Urges universities to create a clearer understanding of SD than the Brundtland definition

Name	# of Signatories	Year	Summary & Relevance
University and College Presidents' Climate Change Statement of Action for Canada	22	2008	<ul style="list-style-type: none"> - Included the idea of intragenerational equity specifically between countries - The first national Canadian SHE statement - Focused primarily on climate change - Explicitly mentions students as a stakeholder for the planning committee
2009 G8 University Summit Torino Declaration on Education and Research for Sustainable and Responsible Development (Turin Declaration)	Delegates representing 26 institutions from 19 countries	2009	<ul style="list-style-type: none"> - Prepared in advance of the G8 leaders' summit. - Focused on the role of research and education for a sustainable future - Described the need for new approaches, a focus on the 4 E's (ethics, economics, ecology and energy policy) - First SHE declaration to explicitly call for students' inclusion in discussions
G8 University Summit Statement of Action 2010	Delegates who were expected to be 50 university leaders from 14 countries	2010	<ul style="list-style-type: none"> - Prepared in advance of the G8 world leaders' summit, though no recommendations for leaders - Focused on sustainable energy, sustainable health and sustainable higher education were addressed, with equity being a key issue - Adds to discussions of SHE the aspect of universities being able to continue sustaining themselves in the long-term
People's Sustainability Treaty on Higher Education towards Sustainable Development	100+	2012	<ul style="list-style-type: none"> - One of 14 People's Sustainability Treaties at Rio+20 - Student organizations involved in its formation - Commitment to increase sustainable development links with culture, campus, curriculum, community engagement and connecting the system - There are 4 kinds of deliverables (immediate to long-term actions) being monitored
Rio+20: Statement by the Higher Education Sustainability Initiative	13 organizing partners	2012	<ul style="list-style-type: none"> - Believes universities should be leading the efforts towards SD (Tertiary Ed Rio+20 Handout)

The first official commitment by universities themselves to sustainability was the Talloires Declaration of 1990. Since then, a number of institutions have signed on, including 34 of approximately 143 public universities in Canada (The Canadian Information Centre for International Credentials [CICIC], 2015; ULSF, 2015). The declaration is seen as symbolic, as no enforcement of implementation efforts exists and it is non-binding. This first SHE commitment focused on the links between the world's production and consumption patterns and a multitude of environmental devastations and concerns, as well as poverty. While an ecological focus is important, there is a lack of discussion concerning modelling positive social or economic decisions on campuses with the exception of interdisciplinary education and partnerships. The points are quite general with no examples of actions that would support their implementation. It called on universities to be publicly accountable (Zilahy, Huisingh, Melanen, Phillips, & Sheffy, 2009), to mobilize for sustainability in education, research, policy formation and information exchange (ULSF, 1990). Many of these same ideas were later put forward in Chapter 36 of Agenda 21 at the Earth Summit (United Nations General Assembly, 1992).

The next SHE commitment was the Halifax Declaration and Action Plan (1991), which developed from a gathering that saw senior university representatives, as well as a number of representatives from the business and banking communities, government and non-governmental organizations, discuss the role of universities in regards to mainly environmental development. The strategic plan suggested actions focused mainly on education and partnerships, as included in the previous declaration, but also mentioned increasing interdisciplinary research (Halifax Declaration, 1991). The declaration and

action plan were not effective in creating the major changes for which it called (Wright, 2003).

The following year, 1993, the Swansea Declaration continued the evolution of SHE. Over 400 universities from 47 countries were involved in its creation and drew upon their knowledge and experience to discuss how universities and their members could engage in balancing the needs of people and the environment (Johnston, n.d.). It built upon the Halifax Declaration and noted universities' major responsibility to the public to help create a sustainable future (Association of Commonwealth Universities, 1993). This was the first SHE declaration to specifically mention the interconnectedness of environmental, social and economic factors, and called upon universities to create a clearer understanding of sustainable development than the Brundtland definition; the vagueness of the Brundtland definition was already a concern. The Swansea Declaration called on universities to be role models and create educational partnerships in their communities. A final major contribution from this declaration to SHE discussions was the inclusion of the idea of equity between all countries, suggesting that institutions in richer countries support SHE efforts in less fortunate ones (Wright, 2003).

While a number of SHE statements were created following the Swansea Declaration, the 2009 G8 University Summit Torino Declaration on Education and Research for Sustainable and Responsible Development (Turin Declaration) is interesting for its part in further elaborating on the concept of sustainability. It was created prior to the 2009 G8 Summit of world leaders and included recommendations for both the academic community and heads of state attending the subsequent summit. This declaration focused on the importance of research and education in attaining a sustainable

future. It discussed the need for new approaches, a focus on the 4 E's (ethics, economics, ecology and energy policy), and reiterated points in previous SHE conceptualizations such as the need for holism, interdisciplinarity, role modelling (by universities) and the creation of networks (Turino Declaration, 2009). Most germane to the current study, it was the first SHE declaration to explicitly call for the inclusion of students in discussions of SHE and the adoption their recommendations (the Palermo Declaration).

The G8 University Summit Statement of Action (2010) was the resulting document from the "Universities and Communities: Transition to a Sustainable Future" international conference. Three subtopics, sustainable energy, sustainable health and SHE were addressed, with equity being a key issue. Again, there was a focus on partnerships, role modelling, research, and interdisciplinarity. This statement contributes to SHE through its emphasis on universities being able to continue sustaining themselves into the future and its focus on ensuring that students become global citizens. It still employs the Brundtland definition of sustainability, but expands upon it with its explicit mention of health inequities.

The major ideas resulting from this evolution of SHE were recently reconfirmed in documents related to the United Nations Conference on Environment and Development (Rio+20) in 2012. The first was the official "Rio+20: Statement by the Higher Education Sustainability Initiative" (UN, 2011a). It reiterates and supports ideas described in various former SHE declarations including teaching EfS across all disciplines, encouraging SD research, greening campuses, supporting the local community and being involved at the international level. The other declaration is the "People's Sustainability Treaty on Higher Education" (COPERNICUS Alliance, 2011).

This treaty was created in collaboration with higher education organizations, student organizations, civil society and experts on higher education and sustainability.

Signatories committed to increasing the understanding of sustainability as an integral part of higher education, practicing sustainable campus management, using participatory processes, engaging with their local communities, ensuring that the higher education system and curriculum aligns with sustainability and increasing access to education (UN, 2011b).

2.9 SHE in Canada

SHE has emerged as a significant topic of interest and discussion among members of the Canadian university sector since the Talloires and Halifax Declarations. Since those discussions began, universities have implemented a variety of tools, technologies and plans on their own campuses and increased their presence within the larger SHE frameworks.

As the SHE field involves a lot of innovation in applying new technologies and ideas to the physical campus and the classroom, there is a lot of technique and information sharing between countries and institutions. Within the Canadian context some of the key organizations include the Association for the Advancement of Sustainability in Higher Education (AASHE), the Sierra Youth Coalition (SYC-CJS), the Canada Green Building Council and the Canadian Consortium for Sustainable Development Research (CCSDR). Currently, 18 Canadian universities have one or more campus groups (e.g. programs, centres, departments) participating in said consortium (CCSDR, n.d.). There are also regional sustainability networks that facilitate regular

interactions focused primarily on sustainable operations (R. Owen, personal communication, June 24, 2014). Of these organizations, AASHE appears to be the most prominent, although only 33 Canadian four-year public universities (~52%) are members (AASHE, n.d.a), of which 14 institutions (42%) are participating in the STARS sustainability assessment program (AASHE, n.d.b). Like academics in other jurisdictions, Canadian academics often publish in the *International Journal on Sustainability in Higher Education* (Wright & Pullen, 2007).

In terms of Canada's participation in SHE declarations, institutions have signed many of the key international SHE statements and have engaged at the national and sometimes provincial level. In 2008, six university presidents in British Columbia created a national SHE declaration, "University and College Presidents' Climate Change Statement of Action for Canada." This statement now has 22 signatories with the majority being from western provinces (Toope *et al.*, 2008). More recently, 21 post-secondary institutions in Ontario signed the "Ontario Universities: Statement on Creating a Sustainable Environment." This declaration commits the institutions to working together for sustainability on topics such as policy, best practices, procurement, construction and waste, and publishing an annual report (Council of Ontario Universities, 2009). These two statements are examples of the kinds of statements being created in the Canadian context, but are not the only ones.

Like their international counterparts, Canadian universities have implemented SHE initiatives in areas such as administration and operations, teaching and curriculum, community involvement, and student engagement. Examples of such efforts can be found in Beringer, Wright & Malone (2007), the Sustainable Endowments Institute (SEI)'s

archived Green Report Cards and the AASHE database. Baseline data from CAUBO (2010) as reported in Mitchell (2011) found that 70% of the then 37 Association of Universities and Colleges Canada member universities had formal sustainability policies with almost three-quarters of them including environmental, social and economic aspects of sustainability. The University of British Columbia (UBC) has been recognized as particularly committed to SHE efforts by AASHE twice (AASHE, n.d.c), a fact supported by AASHE newsletter submissions (as calculated by the researcher). Dalhousie University, the University of Calgary, York University and UBC are leading the country in terms of reporting their efforts through this medium.⁷ Relatively recent major SHE undertakings include the formation of the College of Sustainability at Dalhousie University (Buszard & Kolb, 2011), bottled water bans at five universities between 2009 to present and major green building or LEED certifications at many Canadian universities and colleges (AASHE newsletter data).

2.10 Barriers and Motivators to University Sustainability

2.10.1 Barriers

In order to help universities move forward with their sustainability goals, administrators, advocates and university stakeholders need to understand what, if any, barriers are blocking their progress and find ways to address them. SHE literature is filled with a wide variety of institutional, cultural and financial barriers to implementing sustainability (e.g. Dahle & Neumayer, 2001; Velazquez, Munguia, & Sanchez, 2005). As the student perspective on barriers to university sustainability has rarely been

⁷ It must be noted that this does not mean that other institutions are not as active in SHE, but that they do not submit to the newsletter for one reason or another.

investigated⁸, this research includes two questions specifically concerning the current and future existence of barriers to sustainability on participants' campuses and one regarding anticipated issues for their universities.

Previous research has identified a multitude of barriers to sustainability within higher education institutions. Some of the major barrier themes identified by research include finances (Leal Filho & Wright, 2002; Newman & Abrams, 2005; Richardson & Lynes, 2007; Sammalisto & Arvidsson, 2005; Velazquez *et al.*, 2005; Wright, 2010), communication (Bartlett & Chase, 2004; Jacobson *et al.*, 2006; Leal Filho, 2000; Leal Filho & Wright, 2002; Martin, 2011; Nicolaides, 2006; Richardson & Lynes, 2007; Wright, 2010), disciplinary silos and organizational ethos (Bartlett & Chase, 2004; Kurland, 2011; Moore *et al.*, 2005; Nicolaides, 2006; Thomas, 2004), and attitudes (Djordjevic & Cotton, 2011; Franz, 1998; Kurland, 2011; Martin, 2011). The reason for this variety of barriers is that each situation is affected by a number of factors and each campus is its own microcosm.

One of the main kinds of barriers that this project investigates is misconceptions and misunderstanding of sustainability (Dahle & Neumayer, 2001; Leal Filho, 2000; Moore *et al.*, 2005; Thompson & Green, 2005; Velazquez *et al.*, 2005). As there are a number of definitions of the term, it leaves much room for misunderstandings. There may be failures to communicate clearly, often influenced by different conceptualizations or errors in information processing (Dahle & Neumayer, 2001; Leal Filho, 2000). Campus community members may not know or understand the impacts that institutional choices have upon the environment, society or the economy at a local or global scale. They may

⁸ Some researchers included students as participants in their research that involved barriers to SHE, but did not discuss their responses as specific results (Velazquez *et al.*, 2006; Kurland, 2011; Moore *et al.*, 2005). Martin (2011) only sometimes discussed students' responses separately.

not have the place-based knowledge to know how their university has affected the local environment (Thompson & Green, 2005) since it was built. Kahn (1999) created the term “generational environmental amnesia” to describe how people who have no previous knowledge of their environment pre-degradation believe that it is healthy because they have never known it in a better state.

Cultural models or norms affect all people, whether they are aware of it or not. They are simplified ways of how one views the world and its components. These models can make it more difficult to change behaviour or beliefs, as people tend to hang on to these images (McKenzie-Mohr & Smith, 1999; Thompson & Green, 2005), such as the idea that all university campuses should have an expansive cut green lawn instead of fields of native plants. An additional example is someone thinking that everyone needs a vehicle in order to live in a city. Those may be identified as faulty cultural models in the sense that they do not incorporate the consequences and may lead to a negative impact upon the environment. In the case of urban car owners, this may lead to less support for public transit or active transportation, as well as increased greenhouse gas emissions. Faculty cultural models may provide resistance on campus as sustainability challenges the ways that things have always been done (Thompson & Green, 2005).

Resources of all kinds, from time to finances and from natural resources to peoplepower, can be limited. All of these can impact whether or not a SHE project or SHE in general can move forward. Time and finances are two of the major resources that have often been in short supply at universities (Bartlett & Chase, 2004; Kurland, 2011; Leal Filho & Wright, 2002; Newman & Abrams, 2005; Richardson & Lynes, 2007; Sammalisto & Arvidsson, 2005; Thompson & Green, 2005; Velazquez *et al.*, 2005;

Wright, 2010). Faculty and staff have a multitude of official and unofficial commitments, which can leave little time for additional projects. Finances can be difficult at the departmental or institutional level because there are constantly competing issues such as such as balancing the books, dealing with deferred maintenance or introducing sustainability criteria to building projects.

2.10.2 Motivators

Various factors have been identified that can facilitate or motivate SHE. These include sustainability champions (Bekessy, Burgman, Wright, Leal Filho, & Smith, 2003; Carpenter & Meehan, 2002; Orr, 2004; Richardson & Lynes, 2007; Sharp, 2002; Thompson & Green, 2005), stakeholder pressure (Richardson & Lynes, 2007; Shriberg, 2002), financial savings (Barnes & Jerman, 2002; Kurland, 2011; Richardson & Lynes, 2007), and lower environmental impact (Richardson & Lynes, 2007). Other identified motivators include good communication (Bartlett & Chase, 2004; Djordjevic & Cotton, 2011; Kurland, 2011), improved work environment and related returns including increased productivity (Richardson & Lynes, 2007), pride in shared accomplishments and shared vision (Kurland, 2011), as well as competition (Richardson & Lynes, 2007).

One of the main positive influences on SHE is the existence of a sustainability champion or change agent, someone who promotes SHE, has strong connections, and is trusted by members of the community (Bekessy *et al.*, 2003; Carpenter & Meehan, 2002; Evangelinos & Jones, 2009; Kuhtz, 2007; Richardson & Lynes, 2007; Sharp, 2002; Thompson & Green, 2005). It has often been noted that having a change agent in the senior university administration facilitates sustainability projects as they have

connections, can influence university direction and can signal the importance of sustainability to the rest of the campus community (Orr, 2004). While this offers top-down direction, it is also important to have grassroots support, which allows a greater number of stakeholders to be involved and to suggest initiatives.

Just as poor communication can be considered a barrier to sustainability, good communication can promote sustainability on campus (Bartlett & Chase, 2004; Kurland, 2011). The use of clear and coherent communication reduces confusion and misunderstandings (Djordjevic & Cotton, 2011), which can be barriers to the implementation of SHE (Dahle & Neumayer, 2001; Leal Filho, 2000; Velazquez *et al.*, 2005). Good communication allows for dialogue and feedback between campus community members, allowing the creation of shared visions (Kurland, 2011).

External influences can also act as motivators for universities to implement sustainability. As competition for students and funding increases, more universities are increasing their recruitment efforts. This means that they are sensitive to factors that will make them more competitive, like enhancing a positive reputation or keeping up with other universities (competitors) who are on the cutting edge of SHE implementation (Richardson & Lynes 2007). They are also attuned to issues that current students are invested in (Richardson & Lynes, 2007), as it signals possible trends for potential students' interests.

Finances are a powerful motivator for most institutions. Universities may be motivated to engage with campus sustainability through competitive grant competitions (Kurland, 2011) for sustainability projects or through financial savings (Barnes & Jerman, 2002; Kurland, 2011; Richardson & Lynes, 2007). Money can be saved by operational

decisions, such as more efficient use of heat, or through technological fixes, such as occupancy sensors to decrease the amount of wasted energy for lighting. Some universities have implemented revolving green loan funds to capitalize on the savings and use it to fund further campus sustainability projects (e.g. Harvard).

2.11 Shared Conceptualizations

As mentioned, the development of shared conceptualizations or understandings is a particularly difficult, but critical, step when facing an ambiguous term such as sustainability. Their importance has been discussed in a variety of contexts, such as the effectiveness and efficiency of working in a virtual team (Hinds & Weisband, 2003), in organizational culture (Mohan, 1993) and sustainability (Kurland, 2011; White, 2013). A lack of shared conceptualizations can form a barrier to teamwork and goal attainment due to poor communication.

Although the difficulties are great, the benefits of striving for and achieving common conceptualizations are worth the effort. As Hinds & Weisband (2003) said, “It is important not only to share a common goal, but also to have a common understanding of it.” Its existence allows the opportunity for stakeholders to more efficiently use resources and problem solve, and improves motivation and teamwork (Hinds & Weisband, 2003). This provides a certain amount of independence for stakeholders to move forward with initiatives, as they know others will support them.

In terms of SHE, shared understandings are important for engaging buy-in from the numerous and distinct stakeholders in order for initiatives to move forward (Djordjevic & Cotton, 2011; Kurland, 2011; Newman & Abrams, 2005). This is particularly necessary for initiatives that some stakeholders might feel are outside of the

most articulated missions of the institutions - research, teaching and service - such as edible campus gardens or farms. While there is an inherent “messiness” to sustainability (Wals & Jickling, 2002), its ability to bring diverse participants together combined with dialogue about the pluralism of conceptualizations can lead to the creation of local shared visions and conceptualizations (Kurland, 2011). As Mohan (1993) noted regarding the importance of construct conceptualization for organizational culture, this process of engaging with stakeholders of various disciplines and experiences may lead to richer and more holistic understandings of sustainability. While SHE experts have relatively shared understandings of sustainability and sustainable universities (Wright, 2007), there are limited studies regarding university stakeholders’ conceptualizations of these ideas and their related experiences and knowledge. This points to a knowledge gap and the need to discover their conceptualizations of sustainability and how universities can be involved with sustainability efforts.

2.12 Students as a University Stakeholder

Of the many different university stakeholders in SHE, students are unique due to their population size and their relationships with the institution and the community. Their demographics, politics and interests affect everything from university finances to operations, curriculum to athletics and campus community (Altbach, 1991). As noted by Earl, Lawrence, Harris & Stiller (2003) “...university students provide a critical mandate for change at their institutions” (p.91). This influence is visible at both a global and Canadian scale. Students are freer to criticize the institution’s practices than any employee (Dahle & Neumayer, 2001), hold power as the university’s target group (Dahle & Neumayer, 2001; Nicolaides, 2006) and can act as advocates or catalysts for change

(Richardson & Lynes, 2007; Thomas, 2004). They represent the largest and most dynamic stakeholder population as students are constantly joining and leaving the university community. Since students are transient in nature, their support for different programs may ebb and flow, but committed student groups may exert great influence upon their institutions (Moore *et al.*, 2005) and provide peoplepower to implement pilot projects or achieve campus sustainability victories (Bekessy, Samson & Clarkson, 2007; Helferty & Clarke, 2009; SYC-CJS, 2009; SYC-CJS Atlantic, 2008; SYC-CJS Québec, 2009).

2.13 Student Involvement in SHE

One of the major focuses of EfS is the need to empower students to become capable change agents (Reunamo & Pipere, 2010) and the recognized goals of EfS are the ability to influence systems and participate in decision-making (UNESCO, 2009). This points to the need to engage students whenever possible and appropriate in sustainability. By engaging them on campus, they have the opportunity to see sustainable actions modelled in a space that they care about, learn the benefits, and see how to apply similar actions in their own lives.

Historically, students have been involved in social change movements such as the anti-war, civil rights and anti-apartheid movements (Earl *et al.*, 2003). They have been increasingly involved with sustainability and SHE in recent years (Canadian Youth Climate Coalition [CYCC], n.d.a; Lipka, 2006; Krizek, Newport, White & Townsend, 2012). Calder & Clugston (2003) traced the formation of the SHE movement in Holland to university students' efforts beginning in the 1990s and noted Canada's already active student sustainability movement. British students have also acted as sustainability leaders

through the Community Environmental Educational Developments program (CEED) beginning back in the 1990s (ULSF, 1996). Among other initiatives, they hosted a conference in 1995 that produced a national environmental declaration for students (IISD, n.d.).

The most recent large-scale show of student support for SHE involved the Rio+20 conference. Many students attended and four national and international student organizations, the French Student Network for Sustainable Development (FSNSD), Students' European Network for Sustainable Development (SENSD), oikos (sic) and The World Student Community for Sustainable Development (WSCSD) officially endorsed the Higher Education Sustainability Initiative for Rio+20 (Rio+20, 2012).

Students have previously been active in international SHE through the G8 University Students' Summits beginning in 2009. These summits have allowed students to come together and create a document to influence the discussions at the World University Summits, which often attempt to create a vision for higher education and to influence the G8 summits. The first conference resulted in the Palermo Declaration on Education for Sustainable Development, Culture of Lawfulness and Heritage of Peace (Palermo Declaration, 2009), which called on universities to take a leading role in sustainability, increase interdisciplinarity in curriculum, and support off-campus community efforts through partnerships and research. It also called for sustainability and the economy to be given equal importance and EfS to be available for all. Subsequent summits have been hosted in Banff, Alberta (Jobbins, 2010), Besançon, France (Sommet mondial des universités, 2011) and the United States of America (2012). The 2010 summit proposed annual university sustainability reports with an "ultimate goal of net

zero” and the use of institutions as living laboratories (Jobbins, 2010). The 2012 World Student Summit for Sustainability hosted in Nairobi provided another opportunity for students to engage with SHE. It documented and prioritized youth actions regarding sustainability and the Green Economy, as well as developed activities to integrate sustainability into university curricula (WSCSD, 2012).

Canadian university students have also been active proponents of sustainability on their campuses and through various networks. Fonseca, Macdonald, Dandy & Valenti (2011) pointed to efforts by students and sustainability offices as the drivers for sustainability reporting by Canadian universities, while CAUBO (2010) found that students, senior administrators and presidents had the greatest influence (as reported in Mitchell, 2011). Student networks such as the Sierra Youth Coalition (SYC-CJS), the Canadian Youth Climate Coalition (CYCC) and the Canadian Federation of Students (CFS) have contributed to SHE initiatives, the latter through its national “Students for Sustainability” campaign.

The main student sustainability network, the Sierra Youth Coalition (SYC-CJS) was founded in 1996 and began its Sustainable Campuses campaign in 1999. It has regional coordinators for the Atlantic Provinces, the Prairies, British Columbia and the North, Ontario, and Quebec (SYC-CJS, n.d.). Students are offered administrative support, networking opportunities and are invited to attend both national and regional conferences to discuss efforts and to learn skills related to making campuses more sustainable (environmentally and socially), empowering youth and anti-oppression activism. The main focus of the Sustainable Campuses campaign is on establishing a multi-stakeholder process to affect change at universities, conducting research using tools such as the

Campus Sustainability Assessment Framework (CSAF) and the Greenhouse Gas Emissions (GHG) Inventory Calculator, and planning further activities or campaigns. As of 2009, 72 Canadian university campuses were involved in Sustainable Campuses (SYC-CJS, 2009). SYC-CJS is also one of the founding project partners of goBEYOND in British Columbia, another youth-driven organization focusing solely on SHE in that province (goBEYOND, 2010).

More recently, the Canadian Youth Coalition of Canada has been very active through their PowerShift movement and fossil fuel divestment campaigns. The Powershift movement is about bringing youth together learn and mobilize for positive change. It recently expanded from a national gathering to regional ones, with one being hosted in British Columbia and one in Nova Scotia so far (CYCC, n.d.b). Fossil Free Canada is a partnership between CYCC and 350.org to inspire organizations and institutions to divest from fossil fuels (CYCC, n.d.a). There are currently at least twenty divestment campaigns on Canadian campuses thanks to this partnership (CYCC, n.d.a)

The enthusiasm, energy and volunteer efforts of students have helped universities tackle operational issues of all kinds. Initiative shown by students at the University of Buffalo led to a campus environmental audit in 1995 and then an internship-style audit of Buffalo's City Hall (Kohn, Simpson, Barrett O'Neill & Gardella, Jr., 2002). Students successfully pushed for recycled paper and waste paper collection at the Technical University of Catalonia (Ferrer-Balas, 2003), while those in Colorado implemented an increase in student fees in order to purchase wind power for the University of Colorado (Levenstein, 2001).

In Canada, student SHE operational initiatives include a wide variety of areas. In Quebec, Bishop's University students adopted paper consumption reduction measures and students at Université du Québec à Chicoutimi created an online portal for carpooling (SYC-CJS Québec, 2009). The student-union owned restaurant at the University of Guelph is run on wind-power thanks to a student levy and makes a profit selling its renewable energy back to the Ontario grid (SYC-CJS, 2008). Student efforts helped encourage the Vice-Presidents at the University of Waterloo to create a \$25,000 campus sustainability initiatives fund and the ratification of a No Sweat/Fair Trade policy by the University of Ottawa Board of Governors (SYC-CJS, 2008). Students in Atlantic Canada were influential in the addition of solar panels at Saint Francis Xavier University, a bike share and compact fluorescent light bulb giveaway at Memorial University of Newfoundland, as well as the creation of campus gardens or farms at four campuses (SYC-CJS Atlantic, 2008). The creation of a sustainable purchasing policy for all Atlantic universities was the result of students' efforts to reduce paper consumption and increase post-consumer recycled material in paper through the SYC-CJS Papercut Campaign (SYC-CJS Atlantic, 2008).

Students have impacted education as well as operations. Mero (2011) provided a roundup of student-influenced curriculum changes and initiatives, while Hamilton & Spalding (2012) detailed students' involvement with curriculum development at Portland State University in the United States of America. In the latter, students designed sustainability curriculum which included formal, co-curricular and extracurricular programs. The student group ABDETS at École de technologie supérieure in Quebec offered 12 hours of LEED training to students (SYC-CJS Québec, 2009).

2.14 Research on Students' Understandings of Sustainability and Sustainable Universities

Although students have demonstrated their interest and support for sustainability and sustainable universities, limited research into their conceptualizations of such ideas has been completed. Available studies appear to have been completed only within the past decade, with the majority occurring in the last five years. This may be related to knowledge that students are increasingly interested in institutions that have a reputation for caring about sustainability (The Princeton Review, 2012). Of the research on student knowledge, attitudes or perceptions of sustainability or sustainable universities, a number of studies have concentrated on students in a particular discipline, such as engineering (Azapagic, Perdan & Shallcross, 2005; Carew & Mitchell, 2002; Segalàs, Ferrer-Balas & Mulder, 2010; Sheikh, Aziz, & Yusof, 2012), apparel and textiles (Connell & Kozar, 2012) or design (Ruff & Olson, 2009). The majority also focused on students from a single institution, with the exception of Azapagic *et al.* (2005), Emanuel & Adams (2011) and Nejati & Nejati (2012). All three of these exceptions employed different scopes. Azapagic *et al.* (2005)'s study was worldwide, while Emanuel & Adams (2011) compared and contrasted students from two universities in different states of the United States of America. Nejati & Nejati (2012) tested their sustainable university scale with students at an international sustainability conference hosted by the Association of Southeast Asian Nations (ASEAN). National studies of students' sustainability conceptualizations are severely lacking, as are studies of any Canadian students' conceptualizations.

Efforts to investigate these conceptualizations of sustainability and/or sustainable universities have used a variety of methods, although the majority of research has

employed surveys (Azapagic, *et al.*, 2005; Barth & Timm, 2011; Carew & Mitchell, 2002; Earl *et al.*, 2003; Emanuel & Adams, 2011; Farner, 2011; Kagawa, 2007; Nejati & Nejati, 2012; Stir, 2006; Summers, Corney & Childs, 2004; Tuncer, 2008; Yuan & Zuo, 2012). Sheikh *et al.* (2012) recently used semi-structured interviews and observations to investigate first year undergraduate engineering students' perceptions of sustainability and Bezbatchenko (2011) also utilized semi-structured interviews to investigate undergraduate students' conceptions, attitudes and behaviours regarding sustainability. Additionally, Segalàs *et al.* (2010) employed concept maps to investigate students' conceptualizations of sustainability in order to determine how different pedagogies affected understandings of the concept and Martin (2011) held a focus group with students to engage them in discussions of SHE. Finally, in the newest related research Zeegers & Clark (2014) analyzed both a survey and entries in a reflective journal.

The over-representation of surveys as a method to investigate a topic as complex as sustainability conceptualizations indicates a possible lack of in-depth responses. Few of the surveys included open-ended questions to capture students' understandings. Of those that did (Carew & Mitchell, 2002; Kagawa, 2007; Stir, 2006; Summers *et al.*, 2004), one reduced the results down solely to reporting frequencies (Summers *et al.*, 2004), again losing the possible depth of the results. Summers *et al.* (2004) was one of the few survey studies to ask participants to provide their full definition or understanding of sustainability. The other was Carew & Mitchell (2002), who then analyzed the responses according to the Structure of Observed Learning Outcomes (SOLO) taxonomy. Research that combines in-depth responses and an opportunity to compare participants'

conceptualizations to current related concepts would be helpful in providing a richer understanding of how students' conceptualize sustainability.

While information on university students' conceptualizations of sustainability is limited by the methods and small number of studies, it is important to understand what little is currently known. A number of studies found that students appeared to have limited knowledge or understanding of sustainability (Azapagic, *et al.*, 2005; Earl *et al.*, 2003; Sheikh *et al.*, 2012; Stir, 2006; Zeegers & Clark, 2014). In at least two cases, a small number of students admitted that they were not familiar with or were unsure what sustainability meant (Bezbatchenko, 2011; Earl *et al.*, 2003). While some studies have reported conceptual variance (Bezbatchenko, 2011; Carew & Mitchell, 2002; Reid, Petocz & Taylor, 2009; Summers *et al.*, 2004), the literature has usually demonstrated that students associate sustainability most strongly with environmental concepts (Barth & Timm, 2011; Bezbatchenko, 2011; Kagawa, 2007; Ruff & Olson, 2009; Sheikh *et al.*, 2012; Summers *et al.*, 2004; Tuncer, 2008; Yuan & Zuo, 2012; Zeegers & Clark, 2014). This does not mean that there are not cases in which students recognized additional aspects of sustainability such as intergenerational equity (Barth & Timm, 2011; Carew & Mitchell, 2002; Reid *et al.*, 2009), environmental limits (Carew & Mitchell, 2002) or one of the other aspects (social, economic) in general (Barth & Timm, 2011; Summers *et al.*, 2004). Within the various sustainability conceptualizations that Carew & Mitchell (2002) found, there was a heavy emphasis on the immediate and the applied. Another interesting focus drawn out students' conceptualizations was that of an anthropocentric view of sustainability (Bezbatchenko, 2011). While this was the only study to specifically note this, perhaps a different approach to analyzing some of the other studies might find a

similar theme due to the worldview associated with the relatively well-known triple bottom line conceptualization. Although understandings of sustainability may be limited, it is heartening that of those studies that asked (Azapagic *et al.*, 2005; Kagawa, 2007), sustainability was seen as a good and important concept.

In terms of students' conceptualizations of sustainable universities, the information is even more meagre. Nejati & Nejati (2012) reported that students believed 4 factors were important to sustainable universities: community outreach, a sustainability commitment and monitoring, waste and energy, and finally land use and campus planning. Much of this echoed research by Emanuel & Adams (2011) that revealed that campus planning, development and operations were the areas in which students believed universities should make sustainability a priority. Although SHE has become an area of specialization all its own in the last two decades, Yuan & Zuo (2012) reported that students at one Chinese university had a low level of understanding of it. Of the educational, environmental and social aspects participants could prioritize (the economic aspects were not included in the study), students highlighted the environmental ones most often. This emphasis is similar to the strong association noted in the previous paragraph between the environment and sustainability. It is encouraging that 90% of the students in Yuan & Zuo (2012) were willing to learn more about and supported SHE activities.

2.15 Research Rationale for the Current Study

Since shared conceptualizations are important for communication and engagement (Hinds & Weisband, 2003) and progress towards SHE (Wals & Jickling, 2002), a better understanding of how university stakeholders conceptualize the complex ideas of sustainability and sustainable universities is necessary. As one of the major

focuses of EfS is to empower students to become capable change agents (Reunamo & Pipere, 2010) and students' conceptualizations of SHE are under-researched (Carew & Mitchell, 2002; Kagawa, 2007), this study will investigate students' conceptualizations of sustainability and sustainable universities, as well as the role universities have to play in moving towards a more sustainable future.

While some limited research into students' understandings of sustainability exists, this study will address additional aspects of the problem. Previous studies were often limited to students of particular disciplines or institutions, while this study will include participants from across Canada and from a variety of disciplines, as well as both French and English speakers. It will utilize a mixed method approach with semi-structured interviews and concept checklists in order to provide a richer dataset. Finally, it will investigate questions surrounding sustainable universities and the university's role in progressing towards a more sustainable future.

This study will provide an opportunity to address a known knowledge gap by determining if students' conceptualizations are similar to those of SHE experts (Wright, 2007) and/or those of other Canadian university stakeholders (McNeil, 2013; Sylvestre, Wright, & Sherren, 2013; Wright, 2010; Wright & Horst, 2013; Wright & Wilton, 2012). It will also provide a baseline of conceptualizations that could be helpful to Canadian universities and future SHE research. Even if a single definition of sustainability is impossible, as White (2013) noted, providing a picture of how people understand sustainability provides a starting point for stakeholders to engage in conversation and determine their shared vision as a group; such a vision and understanding could contribute to better engagement with campus sustainability (Emanuel & Adams, 2011).

In addition, this research will investigate the perceived barriers and motivators to SHE of Canadian SU presidents. This is important for determining whether students perceive similar issues as other university stakeholders and for determining possible ways that students can address them. Since Canadian students are already known to be interested in engaging in SHE (Calder & Clugston, 2003; CYCC, n.d.a), by understanding the perceived motivators and barriers to SHE, this research may be able to recommend possible ways for SUs to facilitate SHE on their campuses.

2.16 Bibliography

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Chapter 3: Methods

The theoretical framework, study design and rationale for this thesis are addressed below, as are the participant selection process, instruments and procedures used. A discussion of the limitations of the study is also included.

3.1 Inspiration

This thesis is part of a larger research program funded by the Social Sciences and Humanities Research Council of Canada (Primary Investigator: Dr. Tarah Wright, Dalhousie University) that investigates different university stakeholder's understandings of sustainability and sustainable universities. This particular study's research questions and methods are informed by Wright (2008) and Wright (2010). Other studies that are part of the larger research program and have influenced the chosen methods for this study include McNeil (2013) who looked at university presidents, Sylvestre (2013) who examined faculty within a single university case study, Wright & Horst (2013) who studied Faculty leaders, and Wright & Wilton (2012) who investigated Facilities Management Directors.

3.2 Research Questions

This study was guided by four key questions:

1. What are Canadian student union (SU) presidents' conceptualizations of sustainability?
2. What are Canadian SU presidents' conceptualizations of sustainable universities?
3. What do SU presidents' perceive as the role of universities in striving for a more sustainable future?

4. What are the barriers or motivators to becoming a sustainable university perceived by Canadian SU presidents?

3.3 Theoretical Framework

This study utilized a pragmatic approach to investigate the research questions. The pragmatic worldview focuses on selecting the research method(s) that will best answer the research question(s) instead of focusing on specific research paradigms (Creswell & Plano Clark, 2011; Feilzer, 2010) and is often associated with the use of mixed methods (Denscombe, 2008; Johnson, Onwuegbuzie & Turner, 2007; Tashakkori & Teddlie, 2003). It assumes that the question is of the utmost importance and can adopt either single or multiple realities as assumed by postpositivist and constructivist worldviews when analyzing results. As this was an inductive study, the collection of a rich dataset was key.

Mixed methods research is a relatively new research paradigm. While the beginnings of this melding of multiple methods is attributed to Campbell & Fisk (1959) and expanded through triangulation of data via quantitative and qualitative research (Jick, 1979), it was in the 1990s that the use of different methods became more prevalent (Denscombe, 2008; Johnson, Onwuegbuzie, & Turner, 2007). It is a paradigm in which both quantitative and qualitative approaches, with distinct designs and data formats that may involve theoretical frameworks, are used to investigate the research subject (Creswell, 2014). The following section describes the specific approaches utilized in this study.

3.4 Study Design

This study utilized a mixed methods convergent design variation in which a quantitative method was used to support the qualitative method and greater emphasis was given to the latter. Due to this design's success with investigating sustainability conceptualizations held by other university stakeholders (faculty leaders, facilities management directors, university presidents), it seemed an appropriate method to use with students.

Mixed methods designs are often used to obtain broad perspectives (Creswell, 2003). A convergent design is an approach in which data can be collected concurrently and analyzed using techniques traditionally associated with each individual qualitative or quantitative method (Creswell & Plano Clark, 2011). This allows all of the data to be collected in one sitting, which is important when working with participants who have limited time available. This study involved the administration of two quantitative concept checklists and a qualitative face-to-face interview that employed both open- and closed-ended questions. This approach offered greater data capture (completeness), the potential to triangulate between methods and enhance results from the multiple methods selected, as well as the ability to offset any negative aspects of individual methods (Bryman, 2007; Creswell & Plano Clark, 2011).

While the convergent design usually gives equal weight to both methods (Creswell & Plano Clark, 2011), this variant placed greater emphasis on the qualitative research method (the interview). The quantitative concept checklists were nested within the qualitative semi-structured interview and collected concurrently from the same participants. The emphasis of importance was unequally distributed to the qualitative method, with the checklists used to validate or compare with the interview results. This

emphasis was chosen to reflect the importance of delving deeply into participants' subjective conceptualizations using their own words and allowing for the inclusion of previously unexamined ideas.

In addition to increased richness of responses, the use of mixed methods to investigate student conceptualizations of sustainability or sustainable universities is a relatively novel approach. Previous research has utilized surveys (Azapagic, Perdan & Shallcross, 2005; Carew & Mitchell, 2002; Connell & Kozar, 2012; Earl, Lawrence, Harris & Stiller, 2003; Emanuel & Adams, 2011; Farner, 2011; Kagawa, 2007; Ruff & Olsen, 2009; Summers, Corney & Childs, 2004) and instrumental case studies (Bezbatchenko, 2011). With the exception of Walshe (2008), who utilized concept-mapping and semi-structured interviews to investigate high school students' conceptions, and Norbaini Syed Sheikh, Abdul Aziz & Mohd Yusof (2012), who utilized semi-structured interviews and observations on undergraduates, studies in current literature rely upon a single method. Further, in the case of surveys, the quantitative measures may miss the context and specifics of the conceptualizations in favour of the ability to generalize (Creswell & Plano Clark, 2011).

The qualitative methods used in this research included face-to-face interviews and field notes. The face-to-face semi-structured interviews allowed the researcher to ask greater in-depth or probing questions of participants (Whiting, 2008) and clarify any confusion or answer questions (Phellas, Block & Seale, 2012). Additionally, the interviewer was better able to ensure the proper participant answered without being immediately influenced by outside information, (e.g. without researching existing definitions of sustainable universities online prior to responding). Fielding (1994)

suggested face-to-face interviews allow participants to feel more at ease and build a relationship with the interviewer, particularly when the interviewer was of a similar age, as in this case. The field notes provided additional information regarding interview location and comments such as participants' body language or the researcher's initial thoughts.

The interviews consisted of three demographic questions (age, gender, program of study) and eight semi-structured, scheduled research questions focusing on sustainability, sustainable universities, related barriers and motivators, and the university role in sustainability (Appendix 1). Seven of the interview questions were originally designed by Wright (2010). An eighth question, "Do you believe that the recent trend of universities viewing students as "customers" influences sustainability on your campus? If so, in what way?" was added to better investigate how neoliberal corporatization may impact SHE efforts.

Recent work (Bok, 2003; Côté & Allahar, 2011, Grineski, 2000; Hardy, 2008) suggests that there are increasing concerns about the corporatization of universities and its impact upon higher education and university operations. With the possibility of neo-classical economics as a barrier to sustainability raised in the past (Newman & Abrams, 2005), this study investigated its potential impact on sustainability in Canadian universities using the additional question described above. The usage of "students as customers" was developed from literature investigating the new market-led orientation of universities (Levin, 2005; Glaser-Segura, Mudge, Brătianu, Jianu & Vâlcea, 2007; Molesworth, Nixon & Scullion, 2009; Ng & Forbes, 2009; Sharrock, 2000) and the researcher's experience with that perspective while working for and with university

students in New Brunswick. The question's placement in the interview was deliberate to ensure that it could not influence participants' responses to the existing questions regarding sustainable university barriers, nor affect the ability to compare the study's results for these questions with the related conceptualization research.

The concept checklists designed by Wright (2010) (Appendices 2 and 3) were employed as quantitative instruments to further investigate participants' conceptualizations of sustainability and sustainable universities. As these instruments utilized SD, changes were not made to the wording in case it affected their validity or reliability. Wright (2010) developed the checklists following a review of the academic literature and popular media regarding the topics; included within the checklists were concepts generally associated with SD at the time and some common misconceptions. In addition to providing the opportunity for triangulation with interview results, the checklists provided a way to prompt participants about concepts they may not have mentioned during the interviews and provided easily analyzable data.

3.5 Participants

As students are such a large and diverse group, a subpopulation – SU presidents - was chosen as the population for this study. In their role as student leaders, SU presidents are expected to stay informed of student society efforts and student concerns on campus, as well as ensure student participation within administrative decisions. They are the spokespersons for students and their primary lobbyists. As a result, they are in a position to be exposed to discussions of sustainability from both a student and administrative perspective. In addition, SU presidents are of interest due to the increasing number of SUs that are creating student sustainability positions (SYC-CJS Québec, 2009).

Purposeful criterion sampling⁹ was chosen to determine potential participants, who then self-selected to participate. The population for this research was limited to the presidents¹⁰ of SUs representing undergraduate students on the main campuses of Canadian public universities that belong to the Association of Universities and Colleges of Canada (AUCC).

The choice of this subpopulation was based on the following:

- (a) It produced a manageable participant pool;
- (b) Delimiting to members of the AUCC ensured that the institutions had similar goals and beliefs in the Canadian higher education sector, as the AUCC is an advocacy organization that requires all members to endorse their principles of quality assurance in Canadian post-secondary education (AUCC, 2011). It also requires members to have an independent Board of Governors and give academic staff the authority over academic programming (Charbonneau, 2007);
- (c) Public universities are expected to be more accountable to society, due to the government funding they receive, and to play a greater role in the development of society due to the combination of research and knowledge transfer in which they engage (International Forum of Public Universities [IFPU], 2009); and
- (d) SUs representing undergraduate students were selected as undergraduates represent the largest population on campuses (Statistics Canada, 2010) and provide a significant amount of the university budget (Little, 1997; Mackenzie & Rosenfeld, 2002; Robertson, 2003), sometimes as much as 43.5% (Canadian

⁹ Criterion sampling refers to using specific criteria or factors to determine who fits within the potential sample population (Creswell & Plano Clark, 2011).

¹⁰ Some SUs have a non-hierarchical executive, so their constitutions or online portfolios were reviewed to determine which executive best matched the general role of president, operationally defined for this study as the union's official spokesperson.

Alliance of University Teachers [CAUT], 2012), and thus they may harness the greatest leverage on each campus.

These criteria limited the potential participant pool to 65 SU presidents or equivalents.

3.6 Pilot

A pilot or trial run of the interview protocol and concept checklists was conducted with an environmental studies graduate student prior to commencing participant interviews. This was done to ensure that the researcher was comfortable with the protocol, to verify wording or concepts that might have need clarification (Phellas, Bloch & Seale, 2012), and to determine if the researcher was able to respond to potential questions. The graduate student was selected for convenience, but also because she had just begun her graduate studies and had an undergraduate degree in biology. The lack of formal exposure to sustainability or sustainable universities concepts was important in determining the appropriateness of language in the protocol and checklists. Using actual members of the target population was undesirable as the population was already somewhat small and pilot members would have to have been excluded from the actual research (Phellas, Bloch & Seale, 2012). This pilot test did not result in any suggested changes.

3.7 Ethics

Prior to engaging in recruitment or interviews, ethical approval was obtained from the Dalhousie University's Social Sciences and Humanities Research Ethics Board. The application included a project description, consent processes and forms, a risk analysis for participants, and confidentiality and anonymity assessments.

3.8 Procedures

3.8.1 Recruitment

Potential participants were contacted via e-mail (Appendix 4) during the fall semester of 2010. A second round of e-mails followed by a phone call was conducted at the beginning of the second semester for those who had not yet responded. Printed copies of the recruitment e-mail were distributed at a conference of SU presidents and vice-president externals in November of 2010 that the primary researcher attended in her capacity as the Dalhousie Association of Graduate Students vice-president external. These copies, with contact information, were left on a table in the conference room and mentioned to attendees by the National Director of the Canadian Alliance of Student Associations (CASA), the organizer of the conference, while the researcher was absent. No interviews occurred at the conference, although some SU presidents informed the researcher of their intent to participate subsequently.

Twenty-eight SU presidents chose to participate in this research. After data collection, one interview was discarded, as the participant did not return the checklists, which were considered essential for complete participation. Rudestam & Newton (2007) suggest that an appropriate range for data-rich interview research is between 5-30 participants. Due to this known research standard and the emphasis this study puts on qualitative analyses, statistical power was not considered an important determining factor in sample size for this study. Due in part to time constraints and the appearance of data saturation, the final group of 27 was considered an adequate cohort for this study.

3.8.2 Data Collection

All interviews occurred between September 2010 and March 2011. This time period allowed for all potential participants to have been in office for a minimum of four months to ensure they had some experience with the portfolios and their universities. Many SU executives in Canada take office on May 1, but may not be immersed in the role until September. In addition, the interview period took into account the busy September schedules (when presidents are involved with orientation and council training) and the long December exam and holiday season.

Consent was obtained through both written and oral forms. Official consent forms (Appendix 5) were e-mailed to all confirmed participants prior to their interviews to allow for advanced review. All interviews began with the researcher confirming oral consent and collecting the forms. The entirety of each interview was recorded using an audio digital recorder (for in-person interviews) or Call Recorder software (Ecomm Network, LLC) (for videoconferencing interviews). Field notes were also recorded for many interviews regarding interview location, any disruptions, some comments and any questions or concerns. These notes also included participants' attitudes, if deemed significant (e.g. nervous, relaxed). These notes were used mainly to remind the researcher of context when performing analysis of the corresponding interview since the notes were minimal. While not officially coded in N'Vivo 9, the field notes were sometimes used to triangulate participants' attitudes uncovered during interview analysis.

Demographic information was collected from each of the participants in two ways. Interview questions collected participant demographics, while Internet searches were used to determine university demographics from institutional websites and rankings for categorization. Categories for university size (Table 2 – page 94) and type were inspired

by the Globe and Mail’s globecampus online NAVIGATOR and MacLean’s university type categories (Globe and Mail, 2013; Dwyer, 2009) due to their extensive use in the Canada. The university type categories were divided into comprehensive, undergraduate, research and specialized:

Undergraduate – universities at which the focus was primarily undergraduate education with few graduate programs

Comprehensive – universities that provided varied undergraduate, graduate and some professional education

Research – universities that provide undergraduate and graduate education with a major focus on research, operationally identified as members of the Group of Thirteen¹¹

Specialized – universities that provide specialized training for a small number of disciplines (e.g. art) or target training to a specialized subset of students such as part-time students or working professionals.

Table 2: Study’s university size categories for participating Canadian SU presidents’ universities.

Enrolment data was gathered from the Globe and Mail’s globecampus online NAVIGATOR and universities’ websites in 2010 (Globe and Mail, 2013).

Size Category	Reported Enrolment
Tiny	<5,000
Small	5,001-10,000
Medium	10,001-20,000
Large	>20,000

Interviews were conducted at a location of the participants’ choosing, usually his or her office, as has been suggested by Clarke (2006). (One interview occurred in a coffee

¹¹ The Group of Thirteen or G13 became the U15 some time in February 2011 (U15, n.d.). This would have changed the classification of one participant’s institution, but the researcher chose to stay with the original classification, as she did not learn of the change until after presenting preliminary results of this research.

shop and three videoconferencing interviews occurred while the participant was at home.) Of interviews planned for videoconferencing, one occurred over speakerphone due to the participant's strong desire to participate, but lack of necessary equipment (webcam and microphone), while another had to be completed over speakerphone due to last minute technical difficulties on the participant's end. In both cases the participants were in their offices. In all videoconferencing interviews the researcher was at home, seated at a table with a blank wall behind her.

The researcher followed the interview script for all interviews, which included the appropriate questions for the two checklists. Having the researcher present while the checklists were completed helped speed up response times and removed the possibility of interviewees forgetting to complete the checklists. In addition, by requiring participants to complete the checklist during the interview, the possibility of participants searching out resources to influence their answers was decreased. This allowed better access to participants' personal opinions. For interviews completed via videoconferencing or telephone, the checklists were e-mailed 10 minutes prior to the appointment. These checklists and consent forms were e-mailed or faxed back at the end of the interview. For in-person interviews, everything was exchanged and completed during the interview.

Interviews took between 15 minutes to 123 minutes with $\bar{x} = 35:18$ minutes. The median was 28:32 minutes. The difference in interview length was due to differences in what participants felt they had to contribute, as interviews allowed participants to exhaust their thoughts on each question. Upon completion of the interview, participants received a debriefing form (Appendix 6) to provide them with more information about the research, additional sources of information and the researcher's contact information.

Transcripts of the interviews were made verbatim following the completion of all interviews. They included coding for strong emphasis by the participants (bolding), whispering/speaking to themselves (italics), pauses and vocalized pauses or filler words (E.g. um, ah, you know). While the principal researcher transcribed the majority of interviews, due to time constraints some interviews were transcribed by other graduate students. The primary researcher trained each transcriptionist and reviewed the transcripts to ensure accuracy and reliability between transcripts. Each transcriptionist signed a confidentiality agreement (Appendix 7).

Participants were contacted in April to request personal e-mail addresses to ensure that all participants would have the opportunity to review their transcripts. This ensured that confidentiality would be maintained by guaranteeing that their replacements would not receive the transcripts in error when they gained control of the official e-mail accounts. All participants complied except one. Additional efforts were made to contact said participant so she could review her transcript, but she did not respond.

Technical member-checks (Cho & Trent, 2006) of transcripts were included to determine accuracy (Torrance, 2012). Participants had one week to offer any clarification before coding began. Only three participants offered clarifications, of which most were grammatical errors. One participant requested a sentence of her transcript be removed as she felt that it detracted from the point she was trying to make. The researcher obliged and did not code this selection.

3.9 Analysis

During analysis, each data set was handled separately and then integrated by comparing and contrasting the results as a way to enhance and triangulate the data

obtained through the interview. For the checklists, an Excel (Microsoft Inc.) spreadsheet tracked total support for each concept and support by participant (yes/no). Participants were able to add any concepts that they felt were missing from the checklists, which were analyzed in a more qualitative fashion by grouping according to theme (e.g. food). The mixing of these results with the qualitative ones occurred when aggregate quantitative results were compared to the thematic analysis of the interview transcripts to determine if there appeared to be agreement or discrepancies when comparing Question 2 of the Sustainable Development Checklist and Question 4 of the Sustainable Universities Checklist.

Data coding and qualitative analysis was completed using N'VIVO 9 (QSR International). The data were analyzed using thematic analysis, in which the language of the respondent is used to generate codes. The French interviews were analysed using the English codes. This allowed for all interviews to use the same codes and still keep the data in its original language. During the first round of coding each transcript was read and coded in its entirety. Once all transcripts were coded, a review of the codes and examples was conducted. Although a separate codebook was not created, information such as name, description and sometimes an example, similar to Decuir-Gunby, Marshall & McCulloch (2011) was entered into the N'VIVO file. While some possible codes and themes did emerge during the interview and transcription process, all of the codes used in analysis were *a posteriori*. The data were then analyzed by question, and codes were grouped into categories. The categories were later combined into major themes for each question (McCracken, 1988).

The following were the explicit steps used to create the major themes by question. This part of the analysis was done by hand. All codes from each participant's individual response were recorded and those heavily emphasized were starred using an asterisk. For each question, all of the starred codes and the number of participants who used that code were recorded. Then connections between potentially major codes were identified and combined into major themes, based upon the overall emphasis within the question responses and individual support. Starred codes that had support from few participants were sometimes found to be a major or minor code depending on their importance to addressing the question and the emphasis used when they were mentioned.

Some of the interview data were reported as unattributed quotations, while the aggregate statistics were used also. French quotes were given in French with translation provided if necessary for publication. (For further details, see section 3.10.) Finally, comparative analysis was used to perform a partial evaluation of the codes or themes by participants from different sizes and types of universities, by participant demographics, by geographic region and by student lobbying organization affiliation. Due to time constraints, a full analysis by demographics was not completed and therefore no related results were included in this thesis.

3.10 Language

As interviews were offered in both English and French, all materials were translated into French. Materials were first translated by an upper year Quebecois Francophone translation student from the Université du Québec – Chicoutimi. This translator was selected to ensure that other undergraduate Francophone students would understand the language used and in order to provide an opportunity for a student to

directly benefit from this research. Kapborga & Bertero (2002) noted that the use of a translator from the targeted cultural arena increases the validity of a translation. Upon receiving the translation, the researcher reviewed it and requested another Quebecois Francophone student review it due to some misunderstandings in the first translation. A dialogue continued between the second translator and the researcher (Temple, 1997) until a final translation was approved as having conceptual equivalence, as outlined by Temple (1997). As this is a master's project, there was not sufficient time or resources available to complete an independent back translation analysis (Birbili, 2000).

The researcher conducted the French interviews alone. The consent form for these interviews included a checkbox to consent to translation help (if required) using recordings with all identifying information removed. A translator was not chosen to participate in the interviews as the primary investigator had experience working with Francophone university student leaders. The use of a Quebecois research assistant was not ideal in this research design because the relationship between the primary researcher and participants is very important. The introduction of a research assistant into this relationship creates a potentially confounding variable, as well as increased complexity and increased research costs (Smith, Chen & Liu, 2008). It is important to also note that Francophone SU presidents may not only be Quebecois, so the investigator's experience with Acadian and Quebecois French, as well as experience with international Francophone speakers, was an asset.

Translation of the data was avoided as much as possible to ensure that the participants' thoughts were presented as accurate as possible (Birbili, 2000; Kapborga & Bertero, 2002; Mohanty, 1995; Smith, Chen & Liu, 2008; Twinn, 1997). A mixture of

literal¹² and free translation¹³ was used for quotations from French interviews (Birbili, 2000). Literal translation avoids concerns of accidentally misrepresenting participants and free translation allows the translator to make the quote flow better in the translated language (Rubin & Rubin, 1995). While Maclean (2007) argued that “functional” translation with a comparative deconstruction of terms is the best way to address translation issue, functional translation is not appropriate for conceptual research as it requires the translator to imagine what a native speaker would say in a similar situation. It is important to note that different languages create and express different realities because language is a way people organize the world (Patton 1990; Spradley, 1979), hence it may be difficult to find a perfect translation, even impossible (Birbili, 2000).

3.11 Study Design Limitations

All research is subject to various limitations, this study included. Some potential challenges with the mixed methods study design included: the time requirements, expertise of the researcher, differing sample sizes, difficulty integrating the data and resolving differences between datasets (Creswell & Plano Clark, 2011). Time and sample size concerns were addressed by collecting both quantitative and qualitative data from each participant during a single session. The researcher had prior experience working with both quantitative and qualitative research. This allowed for an increased focus on training to further improve qualitative skills. While the last two potential challenges are ones the researcher considered the greatest, by employing a variant similar to the data-

¹² A literal translation is when text is translated word-by-word (Birbili, 2000).

¹³ Free translation takes the message from a text and translates it into a quote that reads well in the language into which it is being translated (Birbili, 2000).

validation variant¹⁴, the researcher was better able to integrate the results. In addition, the researcher was able to draw upon Wright's (2010) prior experience with this design.

Additional limitations were related to the use of face-to-face interviews, including those that utilized SkypeTM. One of the drawbacks of the face-to-face interview approach is the potential for a perceived loss of anonymity during the interview (Sturges & Hanrahan, 2004). Genuine attempts to mitigate this by building a relationship with the individual were made. Other potential challenges for this method include cost (Sturges & Hanrahan, 2004), and the personal biases of the interviewer (Phellas, Block & Seale, 2012). The use of Skype was selected as opposed to telephone interviews as it allowed the participants and the researcher to see each other and converse in real time, negating potential confounding variables related to the inability to see nonverbal cues (Phellas, Bloch & Seale, 2012) and was free for all to use. Standardized questions and neutral language were employed to reduce the personal perspective of the interviewer (Phellas, Bloch & Seale, 2012).

3.12 Technical Limitations

During some of the videoconferencing interviews, dropped connections were an issue. In these cases, participants were immediately called back and interviews continued. Whenever connections dropped, the researcher and participants were still in contact via text chat. If the break was more than a few seconds, a quick recap was often made of the recent discussion to ensure that participants did not lose their train of thought. During transcripts, the breaks were listed by length and at which point in overall interview.

¹⁴ The data validation variant was described by Creswell & Plano Clark (2011) as a variant on the convergent design in which a qualitative method is used to validate the primary quantitative method. In that design, the weighting is unequally distributed towards the quantitative method, while in this method it was distributed towards the qualitative method.

As there were occasionally issues with the audio recordings due to background noise or change in volume of the speaker, an audio technician was asked to enhance the files. This technician also signed a confidentiality form (Appendix 8). Unfortunately, it was determined that the compression on the audio recordings from the Skype™ interviews was already so great that little could be done to improve upon them. For such interviews, notations were made in the transcripts that listed the amount of time when words were unintelligible. This demonstrated a second minor limitation of using online videoconferencing software because it was difficult and sometimes impossible to determine if and when audio problems occurred during the midst of interview.

3.13 Role of the Researcher

The role of the researcher in this study was to build a rapport with participants and interview them about their current conceptualizations of the research topics. It was also to reassure participants that they and their responses were free from judgement as some participants became embarrassed about their uncertainty when responding. This was aided by the fact that the researcher was similar in age and position (student) as participants often respond better to interviewers who are similar to them (Fielding, 1994). In addition, as there was a focus on qualitative analysis of the interviews, the researcher herself acted as a tool in the analysis.

3.14 Researcher's Perspective

As noted in the previous section, the researcher is key to analyzing the interviews. For this reason, it is important to be aware of how the researcher's perspective can influence qualitative research.

The researcher has a background in primarily quantitative research with some experience in qualitative research. She was involved with a variety of research projects during her Bachelor of Science (Hon.) in Biology and Bachelor of Arts (Hon.) in Psychology, including a thesis project in the latter that included minor qualitative diary data, quantitative instruments (surveys) and a focus group. All of her qualitative coding for this research was completed by hand. In order to address this minimal qualitative experience, the researcher attended a two-day workshop on how to use N'VIVO 9 and read additional material about the process (e.g. McCracken, 1988). She also discussed her process with her colleagues and supervisor.

In regards to sustainability, the researcher adopts the strong sustainability or “egg of well-being” approach that denotes the ecological integrity of the planet as having primary importance, followed by social justice and finally economic systems. She has been involved in environmental activism and outdoor activities since she was a small child, which influenced her understanding of the interdependence between people and the environment. She has also been involved with social justice activism for over a decade. All of these involvements have lead to a confusion about how the current economic system can ignore environmental limits. Due to the prevalence of this system, it has lead her to become more intrigued with how others view and value aspects of sustainability. By being aware of her bias, the researcher was able to consciously look for perspectives that were both similar and different from her own.

While the researcher has never been elected to student government, she was officially involved with SUs at the executive level for three years and volunteered with SU activities for another four years. Following her concurrent undergraduate degrees, she

was the executive director of the New Brunswick Student Alliance/L'Alliance étudiante du Nouveau-Brunswick, a provincial lobbying organization representing over 16,000 university students. She worked with SU executives lobbying for accessibility and affordability of post-secondary education in both English and French, and wrote a number of research and policy briefs for members, the provincial government, the federal government and the media. She was also loosely involved with other student lobbying organizations across Canada focused on similar goals. This experience with the Alliance provided her with a better understanding of how intersectionality impacts access and the experience of post-secondary education and the need for improved social justice. In her second year at Dalhousie University she was chosen by the Dalhousie Association of Graduate Students as the Vice-President External, responsible for all of the Association's relationships outside of the university and lobbying efforts. This meant that the researcher met occasionally at meetings or conferences with a number of SU executives in Nova Scotia and across Canada (those involved with CASA). Although there was (and likely remains) a lot of friction between SU leaders involved with CASA and CFS, the researcher had a history of engaging in positive relationships with CFS members during her time with the Alliance and worked hard to recruit SU leaders associated with both CFS and CASA to this study, in addition to those who were nationally unaffiliated.

An additional key aspect touched upon in Section 3.10 is the researcher's experience with French. The researcher is from northwestern New Brunswick in an area of primarily English speakers, but less than 20 minutes from a part of the province that is primarily Francophone. She began taking French in school during elementary school and

chose to be in the first “late immersion”¹⁵ class in her middle school. This meant that the majority of her classes were in French for the next three years with a number of courses in French throughout high school. Prior to graduation, the researcher was certified as bilingual by a provincial assessor. During her undergraduate degrees, the researcher took some French courses and after graduation was chosen to work for the Alliance following a multi-part interview process in both English and French that assessed her spoken and written French. While working for the Alliance, she performed all internal translations, wrote first drafts of French reports, corresponded in both French and English with SU leaders from Haiti, New Brunswick, Newfoundland and Quebec, and read constantly in French. She also completed a Certificate of French Proficiency at the University of New Brunswick. As the researcher felt she had limited experience with Quebecois slang, she enrolled in and completed a five-week immersion program through Explore in Chicoutimi, Quebec. During this time she lived with a Francophone family, after which she traveled through Eastern Quebec. This exposure to various dialects of French and her continued efforts to read and practice French helped make the researcher more comfortable in her second language. As the researcher was aware that even with this background that her understandings might be different from a native Francophone in that area, she also consulted with Francophone speakers on the creation of her instruments and during analysis¹⁶.

¹⁵ At the time, French Immersion programs in the province began when Anglophone students were in Grade 1 or Grade 6. Immersion programs were not offered in the researcher’s area until 1995.

¹⁶ In all cases of consultation during analysis, the researcher’s understanding of the meaning of the transcript was confirmed.

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Chapter 4: Sustainability and Sustainable Universities as Conceptualized by Canadian Student Leaders

4.1 Introduction

While the world is always in a state of flux, the current impacts of climate change, poverty, civil unrest and financial recessions point to the need for greater balance.

Climate change has been linked with increasing extreme weather events (Intergovernmental Panel on Climate Change [IPCC], 2012) and is caused in part by human activities, such as fossil fuel usage (IPCC, 2007; Wuebbles & Jain, 2001). The major financial crises around the world have negatively impacted the progress of some of the United Nations Millennium Development Goals including that of halving the number of the hungry and poor, while high consumption rates have hurt world biodiversity (The World Bank Group, 2012). All of these issues demonstrate the interconnectedness on Earth and the need to better integrate competing priorities and use a holistic lens when addressing concerns.

One way to examine and respond to current problems is through the lens of sustainability. The role of education cannot be understated in the implementation of sustainability. Universities have a special role in preparing students and society for sustainability. Like all higher education institutions (HEIs), they have been recognized as having a special responsibility to contribute to a sustainable future (Bachiorri & Puglisi, 2007; Cortese, 2003; Orr, 1992; United Nations Educational, Scientific and Cultural Organization [UNESCO], 2005). Their teaching and research roles, as well as their campus environment, are all ways that sustainability can be introduced to the “leaders of tomorrow”. Universities are also well placed to act as role models for organizations and

communities, as their size can be comparable to small cities. There are a wide variety of Education for Sustainability (EfS) initiatives through which universities in Canada and around the world are currently engaging in sustainability.

While various sustainability efforts are ongoing at universities across Canada, there is little knowledge about how university stakeholders conceptualize sustainability and its place in HEIs. McMillin & Dyball (2009) determined that all university stakeholders must be engaged in sustainability for it to be realized at an institution, which is more difficult if a shared understanding of the term is lacking (Wals & Jickling, 2002). This is a serious problem as universities are expending resources on a number of programs without knowing if they are moving closer to their goal. While recent research has studied the conceptualizations of university presidents' (McNeil, 2013; Wright, 2010), facilities management directors' (Wright & Wilton, 2012), faculty leaders' (Wright & Horst, 2013), and faculty (Sylvestre, Wright & Sherren, 2013) of sustainability and the role the university can play in achieving a sustainable future, students' thoughts are still under-researched (Kagawa, 2007). What little has been completed points to a variety of conceptualizations from simplistic to complex with the greatest emphasis on environmental aspects (Bezbatchenko, 2011; Kagawa, 2007; Summers, Corney & Childs, 2004; Zeegers & Clark, 2014). In order to address this knowledge gap, this article presents the results of an investigation into Canadian student union (SU) presidents' conceptualizations of sustainability and sustainable universities, as students represent the largest and one of the most influential university campus stakeholder groups.

4.2 Methods

The population for this study was presidents of SUs representing undergraduate students on the main campuses of public Canadian universities belonging to the Association of Universities and Colleges of Canada (AUCC) (N=65). Participants were recruited via email and telephone.

Using a concurrent, nested mixed method design based upon Wright's (2010) investigation into Canadian universities' presidents' conceptualizations of sustainability, participants in this study took part in semi-structured interviews about sustainability, sustainable development (SD) and sustainable universities (Table 3), and were asked to complete two checklists. In this article, the results of Questions 2, 3 and 4 will be discussed together as this article specifically addresses the knowledge gap regarding Canadian university student leaders' conceptualizations of these terms. Each checklist included discrete concepts related to SD 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. The concept checklists were unaltered from Wright (2010), while Question 8 (Table 3) was added to the original set of questions in order to better investigate the possible perceived impacts that neo-classical economics and neoliberal policies might have on campus sustainability decisions (Newman & Abrams, 2005). Interviews took place in person or via video-conferencing in the language (English or French) that the participant preferred. Additionally, demographic data were collected about the participants (age, self-identified gender and program of study) during the interviews and about their institutions

(geographic location, size and type) according to the Globe and Mail's globecampus online NAVIGATOR and institutional websites.

Table 3. Interview questions

Bolded questions are those whose results will be presented and discussed in this article.

Interview Questions
1. What are the key issues facing this university over the next 10 years?
2. When you hear the term sustainable development, what does this mean to you? Please examine this checklist of concepts and check off which items that you feel are essential elements of sustainable development.
3. What role, if any, do you feel universities in general should play in achieving sustainability?
4. When you hear the term "sustainable university" what does this mean to you? Please examine this checklist of concepts and check off which items that you feel are essential elements of a sustainable university.
5. What, if any, barriers do you see preventing your university from engaging in sustainability initiatives?
6. Do you foresee different barriers and challenges in the future?
7. What factors do you think would make becoming a leader in sustainability the top priority for your university?
8. Do you believe that the recent trend of universities viewing students as "customers" influences sustainability on your campus? If so, in what way?

This mixed method design was selected for triangulation, enhancement, completeness and offset (Bryman, 2007). The two types of data sources enabled triangulation by comparing results to determine similarities and differences and allowed enhancement and completeness of results through an increased range and depth of data captured. The use of two methods provided the ability to offset limitations associated with using only interviews or concept checklists. As an exploratory study, greater emphasis was given to the qualitative results.

Interviews were transcribed verbatim from audio recordings and member-checked. Qualitative data coding and analysis of the interviews was completed using N'VIVO 9

(QSR International). The language of the English respondents was used to generate codes and categories for all interviews that were then combined in major and minor themes (McCracken, 1998) and analyzed by question using thematic analysis. Major themes were operationally defined as those that were heavily emphasized in individual interviews and repeated by multiple participants. Themes that were mentioned less strongly in multiple interviews or were strongly emphasized by a single participant were considered minor themes, although occasionally such a theme could be important enough to be considered a major code due to its perceived importance to addressing the question and the amount of emphasis it received.

Quantitative analyses were completed on demographic and checklist data. Basic descriptive statistics were used on participant data, including institution type and size using categories based primarily on the Globe and Mail's globecampus NAVIGATOR categories. A spreadsheet tracked aggregate and individual checklist data. Concept responses were registered as yes/no and then ranked by the number of yes votes. Each participant-added topic was handled qualitatively with similarly themed items grouped and key themes noted.

Each method (quantitative and qualitative) was dealt with separately and then integrated in the final stages of analysis. The general checklist results were compared and contrasted with the thematic analysis of the interview transcripts to determine similarities and differences, particularly for Questions 2 and 4. The words "strong", "weak" and "none" were used to classify the amount of support for checklist concepts found in the interviews. The amount was determined by number of participants and the amount of emphasis placed upon a concept. "None" demonstrates that the checklist concept was not

discussed by any participants during the interviews. “Weak” signifies that only one or two participants mentioned the concept during their interviews and without significant emphasis. “Strong” indicates that more than two participants mentioned the concept during their interviews; it may also indicate cases in which only a couple of participants mentioned the concept in interviews, but with very strong emphasis on the concept.

4.3 Results and Discussion

A total of 27 of the 65 potential participants were interviewed (45.7% participation rate) with representatives from 9/10 Canadian provinces (Figure 5). Institutional characteristics are offered in Table 4 and Table 5. Compared to Canadian universities in 2015, participants from universities focused on undergraduate education were over-represented in this study, while those from comprehensive or specialized universities were somewhat under-represented. Perspectives of SU presidents from and medium-sized universities were also over-represented compared to 2015, although some difference may be due to enrolment increases at some universities since the time of the research. Of these interviews, only two were held in French and 25 were held in English. This meant that the French sample was not large enough to determine whether there was any difference between English and French SU presidents’ responses. The participants’ ages were between 19-26 with a median age of 21. Fifteen participants self-identified as male and 12 as female. The majority of SU presidents were studying in a Bachelor of Arts program, though eight different disciplines were represented in total (Figure 6).

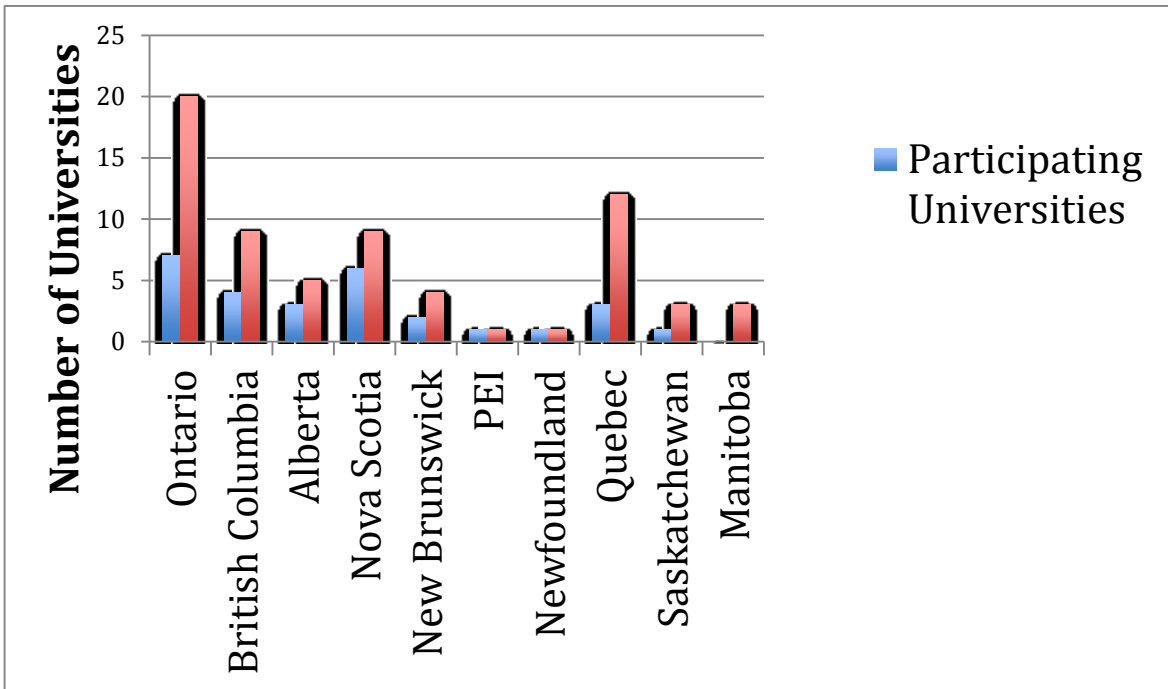


Figure 5. Comparison of represented and non-represented universities in the study by province.

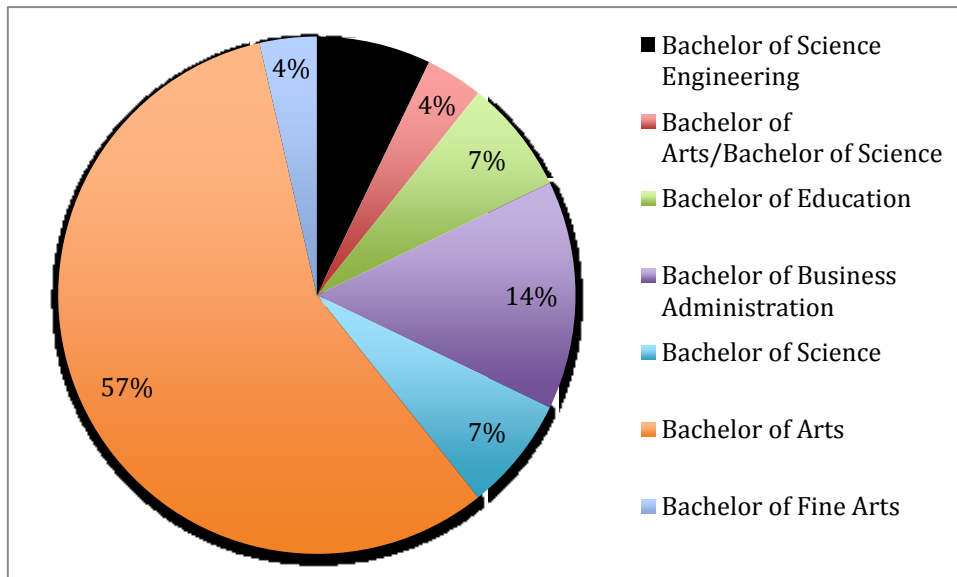


Figure 6. Participants' programs of study.

Table 4: Study’s university type for participating Canadian SU presidents’ universities and approximate makeup of Canadian universities in 2015.

University Type	Undergraduate	Comprehensive	Research	Specialized
Percentage of this research’s participants	37%	22%	26%	15%
Canadian Universities in 2015	15.5%	31.0%	21.1%	32.4%

Table 5: Study’s university size categories for participating Canadian SU presidents’ universities.

Size Category (Based upon reported enrolment)	Very Small (<5,000)	Small (5,001-10,000)	Medium (10,001-20,000)	Large (>20,000)
Percentage of this research’s participants	37%	19%	22%	22%
Canadian Universities in 2015	26.8%	26.8%	14.1%	32.4%

4.3.1 When you hear the term sustainable development, what does this mean to you?

Continuity, the environment and holism were the most supported concepts when participants discussed SD. In this context, continuity referred to lasting over time or being able to continue a practice into the future.

*« So I think that **that**’s maybe the biggest idea of sustainable development for me, this idea of perpetual motion. Yeah, so the way that you operate will enable you to do so for as long as you can conceive. » (Participant 13)*

In addition, major themes that emerged included references to existing definitions of SD (i.e. Brundtland [WCED, 1987]), criticisms of the term, as well as concepts related to growth, physical operations, finances, decision-making and the commodification of the term. Themes of uncertainty and embarrassment were also noted due to some participants being embarrassed when demonstrating hesitation and uncertainty while trying to define SD because they felt like did not know it as well as they thought they should.

Participants offered a number of criticisms when discussing SDt. The most cited were that it was too abstract or theoretical, a lack of agreement about or multiple definitions of the term, that it was too vague or that it was an oxymoron. One participant even stated that he believed research was required to determine “where is the largest degree of consensus of what sustainability is” (Participant 10). While these criticisms were offered, only a few participants expressed that the term was no longer useful. Similar criticisms of SD were also found by Wright (2010), Wright & Wilton (2012) and Wright & Horst (2013), although they appeared to be more varied and numerous within this sample of the student leader population.

The responses to the SD Concept Checklist demonstrated a lot of variance in participants’ conceptualizations and levels of support for the term as discussed in interviews (Table 6). While no concept received support from all participants, six received support from more than 75% of participants. These focused on environmental, decision-making and social aspects of sustainability. The concept most supported by participants, “Integration of environment, social concerns, and economics into decision-making,” was also the top choice of university administrators (Wright, 2010) and second choice for faculty leaders (Wright & Horst, 2013). SU presidents held more similar

conceptualizations of SD to facilities management directors (Wright & Wilton, 2012) and faculty leaders (Wright & Horst, 2013) than university presidents (Wright, 2010). None of the solely economic concepts received support from more than 75% of participants. More concepts (n=14) were in the 50%-74.9% support range than any other. While one economic idea was included in this group, concepts tended to again focus on environmental and social aspects of sustainability. Multiple participants chose to add ideas to the concept checklist (Table 7), many of which appeared to have more practical or applied approach. Of the 13 additional ideas, three were similar, focusing on aspects of food systems, another topic discussed during interviews.

Table 6: Sustainable Development Concept Checklist Results.

Concepts are ranked by checklist support and then colour coded into quartiles; the upper two quartiles are provided here.

Concepts	Selected by Participants	Support in Interview Responses
Integration of environment, social concerns, and economics into decision-making	N=24 (88.9%)	Strong
Conservation and enhancement of the resource base	N=22 (81.5%)	Strong
Equity among those of future generations	N=22 (81.5%)	Weak
Halting the depletion of the non-renewable resource base at a manageable level	N=21 (77.8%)	Weak
Conservation of species diversity	N=21 (77.8%)	None
Equitable provision of basic needs	N=21 (77.8%)	None
Conservation of genetic diversity within species	N=20 (74.1%)	None
Conservation of biodiversity	N=20 (74.1%)	None
Development and preservation of natural capital	N=20 (74.1%)	None
Equity among present generations	N=19 (70.4%)	None
Balance high CO ₂ levels with an increase in the number of trees planted	N=19 (70.4%)	None
Appropriate economic development	N=18 (66.7%)	None
Inherent valuing of the nonhuman world	N=18 (66.7%)	Strong
Greater regional self-reliance	N=17 (63.0%)	Strong
Increase average quality of life standards	N=17 (63.0%)	None
Gender equality	N=17 (63.0%)	None
Satisfy vital human needs	N=17 (63.0%)	None
Maintaining and enhancing cultural diversity	N=16 (59.0%)	None
Determining the carrying capacity of earth	N=15 (55.6%)	None
Prevent populations from exceeding their carrying capacity	N=14 (51.9%)	None

Table 7: Concepts added to the Sustainable Development Concept Checklist by participants

Each of the concepts was added by one participant and concept themes were noted during analysis.

Concepts	Support in Interview Responses
Encouraging support of local and organic farming and food consumption	Strong
Sustainable agriculture, more of an emphasis on local consumption	Strong
Agricultural sustainability	Strong
Elimination of tying economic growth to environmental impact (ie. Economic growth should not trump environmental sustainability)	Strong
Minimiser les impacts humaines sur l'environnement (consommation et pollution) [Minimize human impacts on the environment (consumption & pollution)]	Strong
Decreasing pollution on a global level	None
Decreasing the global carbon footprint	None
Globally recognizing basic human rights as they pertain to physical and environmental factors (ie. Water as a human right or education as a human right...)	None
Reusing things that already exist over creating new products or things	None
Long term economic viewing of natural capital/environment	None
Maintaining an appropriate level of human consumption of resources to decrease non-biodegradable waste	None
Investigating new forms of renewable energy	Not during this question; but often mentioned during talk of sustainable universities

The resultant themes from the qualitative interviews and the quantitative results of the checklist were compared and contrasted to explore the data further. The vast majority of the checklist concepts were not mentioned during the interviews. For example, participants strongly supported equity and species diversity in the checklist, but failed to

mention such ideas during the interviews. Of the 34 original checklist concepts, only 8 were mentioned during participants' interviews, with five receiving strong support and three receiving weak support. The concepts with the most support across both methods included integrating holistic sustainability into decision-making, conserving and enhancing resources, the inherent valuing of the nonhuman world, greater regional self-reliance and ensuring appropriate growth. Three of the ideas added to the SD checklist also received support in the interview responses; these dealt with human impact reduction, food sustainability and keeping economic growth from trumping the environment. While participants did not mention the importance of "Investigating new forms of renewable energy" in the checklist, a number of them expressed their support for or the inclusion of renewable energy use in their interview conceptualizations of sustainable universities.

While prompting was required before participants included certain concepts as essential parts of SD, this does not necessarily mean that such checklist concepts were not as important as the interview results. It may mean that participants were thinking more in terms of broad conceptualizations (like "environmentally-friendly") instead of specific concepts. It may also mean that participants were more familiar with the concept themes discussed in the interviews. In an overall comparison of this checklist's and the interview's results, it was noted that interviews had a much greater emphasis on continuity and holism, although both methods resulted in a major emphasis on environmental issues compared to economic or social ones.

Of note, it was interesting how participants described the form of their conceptualizations of SD or sustainability or chose to differentiate between the terms. One participant viewed it as a process through which things move from unsustainable to

more sustainable, while another viewed it as a strategy. Additionally, some participants viewed it as a mindset. The latter refers to how SD can be viewed at an individual level, like the lens through which one examines problems or the world; the former refers to how SD can be applied to a greater system. Three participants also differentiated slightly between sustainability and SD, but they did not provide details. One Francophone participant mentioned that he considered sustainability (*durabilité*) as just long lasting while he considered SD (*le développement durable*) as multi-faceted.

While the majority of participants were familiar with the terms, conceptual variation remained and continues to make a single definition of sustainability difficult. Some students expressed hesitation, uncertainty and a lack of knowledge when asked to define the terms. As with previous research (Azapagic, Perdan & Shallcross, 2005; Kagawa, 2007; Summers, Corney & Childs, 2004), participants most often described environmental aspects of sustainability. This focus on the environment mirrors the results of university presidents (Wright, 2010), faculty leaders (Wright & Horst, 2013) and facilities management directors (Wright & Wilton, 2012) although in this study there was a much broader emphasis on continuity in terms of processes or actions being able to continue indefinitely into the future with some participants feeling that it was the only essential component of SD. This environmental focus was also found in other research on student conceptualizations of sustainability (Bezbatchenko, 2011; Kagawa, 2007; Zeeger & Clark, 2014). A disparity existed between the checklist and interview results with social aspects selected more often in the former and greater emphasis given to financial concerns in the latter. This illustrates that participants may not strongly consider the social aspects of sustainability without prompting. While they do think social

sustainability is important (according to the checklists), the results showed that participants think first of the environmental and financial aspects. Finances were often mentioned in interviews as part of the major continuity theme (e.g. needing to ensure adequate funds to continue a practice); perhaps there is a stronger association between finances and continuity than between social sustainability and continuity. While a number of participants still appeared to lack a deep understanding of sustainability (they did not recognize the complexity and interconnectedness of the three pillars), similar to the findings of Carew & Mitchell (2002), Azapagic *et al.* (2005), and Earl, Lawrence, Harris & Stiller (2003), most participants' appeared to hold a more holistic conceptualization of sustainability. While a number of criticisms were offered, participants still felt overall that sustainability was positive a positive goal.

4.3.2 What role, if any, do you feel universities in general should play in achieving sustainability?

Universities were seen to have a number of roles to play in achieving a sustainable future. Participants thought universities should be leaders and educators. The majority of themes that emerged from the analyses – culture, research, operations, governance - could be related to leadership by using university culture to empower and educate others about sustainability, to provide useful research on related subjects and to implement sustainable physical and administrative operations, including university governance policies. Participants felt universities had a responsibility to society to be leaders in sustainability and work towards a sustainable future. They believed universities were well-placed in society to influence conversations and actions for a sustainable future

and mentioned the sector's history as a thought incubator and leader of progressive social movements.

« I think they can be...leaders in the community, I guess. Universities [are] traditionally thought of as ground-breaking, thought-provoking institutions or areas. So, places where things tend to happen...ahead of the curve. So if universities adopt a sustainable, living kind of mandate or, sense of being or whatever, then they can lead by example, I guess, for the rest of the community. » (Participant 16)

Participants thought the roles that universities should play in striving for a sustainable future included many of those previously discussed in SHE research and declarations. The idea of universities having a responsibility to be leaders in sustainability (Bachiorri & Puglisi, 2007; Cortese, 2003; Orr, 1992) is one that these student leaders overwhelmingly endorsed. These results echoed the thoughts of faculty leaders (Wright & Horst, 2013), facilities management directors (Wright & Wilton, 2012) and university presidents (Wright, 2010), although the latter did not strongly identify research as a part of the university's role for a sustainable future.

4.3.3 When you hear the term "sustainable university" what does this mean to you?

The respondent themes that arose from this question exhibited some similarities to those from conceptualizing SD. Again, a few participants expressing uncertainty regarding what the concept might mean. Other themes similar to the SD

conceptualization results were continuity, environmental sustainability, holism and finances. In this case though, continuity and finances were often related to institutional sustainability, the idea of the university being able to continue to function in the long term.

« A sustainable university...that's an interesting concept. Umm, I mean, on one hand I think [a] sustainable university, we think about, like, just being able to sustain, I think, possibly has either financial practices or, or visioning such that they will be able to, like, last a long time, and weather through, um, you know, any sort of political...recession or, um, you know, adapt and evolve to face the demands of society. » (Participant 2)

In addition, physical operations, administrative operations, academics & education, partnerships and campus culture were major themes in the responses. These additional major themes were often associated with ways of implementing environmental or holistic sustainability.

*« I think...a sustainable university would be...a university that is committed to those priorities in their operations, and endowment investments. Um, practicing those policies on good, sustainable administration projects; climate change energy; again, the food, waste and recycling; building green buildings; and being a **leader** across Canadian universities in environmental sustainability. » (Participant 11)*

Partnerships between universities and outside organizations or stakeholders were also considered key for sustainable universities. Minor themes included discussions of research, sustainability standards, the importance of the individuals on campus and the commodification of the concept of a sustainable university. The discussion regarding the commodification of “sustainable university” included concerns about universities using the term as a marketing ploy without ensuring that sustainability was truly embedded within the institution.

Participants’ responses to the Sustainable Universities Concept Checklist demonstrated consensus on a number of topics (Table 8). There was a greater consensus among participants regarding sustainable universities than SD, with 12 (42.9%) of these 28 concepts selected by more than 75% of participants and 17 (61%) of concepts selected by more than half of participants. Of these selected concepts, the majority are related to aspects of campus operations and environmental issues, although the concept with the most support was academic – it related to sustainability-related curriculum opportunities. While other university stakeholders also believe sustainability-related curriculum opportunities are important (Wright, 2010; Wright & Horst, 2013; Wright & Wilton, 2012), only student leaders selected it as the most important concept. As with the SD Concept Checklist, no concept received unanimous support. Participants truly wanted to see sustainability considered a priority in terms of campus planning and purchasing policies. These concepts were also very highly supported by faculty members, university presidents and facilities management directors (Wright, 2010; Wright & Horst, 2013; Wright & Wilton, 2012). Partnerships with outside organizations and local impacts were

also considered important by all stakeholders. While there was a lot of support for the use of renewable energy (85%) by sustainable universities, SU presidents did not choose to support specific renewable energy concepts as strongly (37%). This could be due to a number of reasons including that participants wanted universities to be able to utilize whatever renewable energies best addressed their situation. Concepts directly affecting university human resources (contracts, employment) or departments received little to no support (0%-14.8%). Participants added six distinct ideas to the checklist (Table 9); the emphasis on food systems and regional development also echoed Question 2.

Table 8: Canadian SU Presidents' Sustainable University Concept Checklist Results. Results were ranked by concept checklist support and colour-coded into quartiles; the upper two quartiles are provided.

Concepts	Selected by Participants	Support in Interview Responses
Arranges opportunities for students to study campus and local sustainability issues	N=25 (92.6%)	None
Uses renewable and safe energy sources	N=24 (88.9%)	Strong
The university makes sustainability issues a top priority in campus land-use	N=24 (88.9%)	Strong
The university makes sustainability issues a top priority in campus transportation	N=24 (88.9%)	Strong
The university makes sustainability issues a top priority in campus building planning	N=23 (85.2%)	Strong
Reduces the ecological footprint of the university	N=23 (85.2%)	Strong
Reuses campus waste	N=23 (85.2%)	Strong
Consults students on their opinions of sustainability	N=22 (81.5%)	None
Performs regular sustainability audits on campus	N=22 (81.5%)	None
Establishes environmentally and socially responsible purchasing practices	N=22 (81.5%)	Strong
Encourages critical thinking about sustainability issues	N=22 (81.5%)	Weak
Creates partnerships with government, non-governmental organizations, and industry working toward sustainability	N=21 (77.8%)	Strong
Engages in community outreach programs that benefit the local environment	N=18 (66.7%)	Weak
Greater self-reliance within the university	N=17 (63.0%)	Weak
Incorporates environmental knowledge into all relevant disciplines at all levels of study	N=17 (63.0%)	Weak
Creates a written statement of their commitment to sustainability	N=17 (63.0%)	None
Provides incentives for students to participate in environmentally friendly activities	N=17 (63.0%)	None

Table 9: Concepts added by Canadian SU Presidents' to the Sustainable Universities Concept Checklist.

Each of the concepts was added by one participant and concept themes were noted during analysis.

Concepts	Support in Interview Responses
Includes sustainable eating options on campus (e.g. local, organic)	Strong
Incorporates environmental knowledge into academia and administration when effective.	Strong
Elle s'implique dans le développement socio-économique de la région où elle est implantée [It involves itself in the socio-economic development of its local region]	Strong
Linking gym equipment to campus generators – capture kinetic from students to self-generate campus energy needs	None
Creates policy which sets out a road map/set of goals for achieving targets	None
A sober focus of cost benefit analysis placed on decision-making, with value placed into encouraging creative solutions (in the context of sustainability).	None

The results of the interviews were compared and contrasted with the results of the Sustainable Universities Concept Checklist to further examine this dataset (Table 8).

Unlike with the conceptualizations of SD, there was a greater conceptual agreement within and between interview and checklist responses regarding sustainable universities.

Participants believed that in order to be a sustainable university that an institution must prioritize sustainability in operations and administrative decision-making, work to decrease their environmental impact, arrange opportunities for students to study campus and local sustainability issues and to work towards sustainability with other stakeholders.

Other university stakeholders, presidents, faculty leaders and directors of facilities management (Wright, 2010; Wright & Horst, 2013; Wright & Wilton, 2012) also strongly supported these concepts, particularly decreasing environmental impact and

prioritizing sustainability within university operations and administration. In particular, student leaders again used sustainable food sourcing as a positive example of sustainable university operations. Like a number of university stakeholders (Sylvestre, Wright, & Sherren, 2013; Wright, 2010; Wright & Horst, 2013; Wright & Wilton, 2012), SU presidents believed that the continuity of the university (institutional sustainability) was a key aspect of this conceptualization and that finances play a key role in its achievement.

That three concepts with greater than 75% support were not mentioned in the interview results was surprising for a number of reasons, not the least of which was that almost 93% of participants believed that sustainability-related curriculum opportunities were essential to a sustainable university. Perhaps this concept was not included because of how specific it was as student leaders did mention the importance of academic programming and sustainability in general. It was also surprising that student leaders, those responsible for ensuring that students' needs and concerns were heard, did not discuss the importance of students' voices being heard as part of a sustainable university. While they mentioned the importance of the student voice in other interview questions, it was missing during this interview question. Finally, one might also have expected SU presidents to mention sustainability audits or commitments given their prominence in SHE (Bekessy, Samson & Clarkson, 2007; Beringer, 2005; Fonseca, Macdonald, Dandy & Valenti, 2011; Mitchell, 2011; Velazquez, Munguia, Platt & Taddei, 2004; Wright, 2003) and voiced concerns about greenwashing. It must be noted though that signing a sustainability declaration does not ensure that universities follow through on that commitment given Wright's (2010) findings.

4.3.4 Overarching Themes

While the results were analyzed on a question-by-question basis, some overall themes emerged in the analyses. Participants discussed the environmental aspects of sustainability more than the social or economic, although finances were also a major theme. Finances were discussed in terms of being a barrier, a motivator, a key issue, an institutional concern, and specifically in terms of sustainability. For example:

*« What prevents my university from engaging in initiatives? Funding. »
(Participant 19)*

« I think if the economy continues to kind of have this downward spiral it's going in, it'll make it more and more difficult to make the environment a priority or sustainability. I personally believe/think there's an inverse relationship between the health of the economy and the political will to achieve sustainability. You know, just look at public opinion polls every time the economy tanks, ah, sustainability drops down to almost the last thing. When the economy's doing good, sustainability and the environment tends to come up as a top issue. » (Participant 10)

Another major theme was that of the commodification of sustainability. A number of these SU presidents seemed quite concerned with the commodification of sustainability and corporatization of universities, even before the question designed to target this possible issue was asked. Participants were concerned that sustainability or the

idea of SHE was becoming more of a buzzword and marketing tool instead of being applied in an in-depth and effective fashion. The concerns actually related to a fear of universities addressing sustainability in a superficial manner and focusing on finances above all else. Concerns of corporatization have been broached elsewhere in more depth (Bok, 2003; Côté & Allahar, 2011; Naidoo & Jamieson, 2005). Corporatization of universities was also a key issue and a barrier to sustainability according to Canadian faculty leaders (Wright & Horst, 2013).

Finally, participants often used practical examples to illustrate their conceptualizations of both sustainability and sustainable universities during interviews and the checklists. Specific examples of this emphasis on the concrete could be seen in the types of items added to the SD checklist. Perhaps students are better able to understand or more familiar with the application of sustainability than with its theoretical underpinnings. This might also explain why there was greater consensus regarding conceptualizations of sustainable universities as many Canadian campuses have begun to engage in SHE and specific types campaigns are relatively well-known (e.g. bottle water-free campuses). This practical focus appears similar to Carew & Mitchell's (2002) finding that students' conceptualizations of sustainability contained a heavy emphasis on the immediate and applied. This emphasis has not appeared in other studies, but the lack of open questions about students' conceptualizations on the subject may be part of the reason.

4.4 Conclusion

This study provided student leaders with the opportunity to share their perspectives regarding a known barrier to sustainability, its contested definition. While

students have a lot of influence due to their numbers and financial contributions, thus far there have been few attempts to understand their thoughts on sustainability and sustainable universities. One of the goals of this research was to engage SU presidents in more dialogue about these topics; a number of participants mentioned that they appreciated the opportunity to reflect and believed this research needed to be done.

The creation of a baseline of Canadian university SU presidents' conceptualizations of sustainable universities and sustainability is important in helping advocates and researchers determine their current and future progress. It is useful to learn that while greater consensus exists between Canadian student leaders regarding the conceptualization of a sustainable university that there remains quite a bit of conceptual variance regarding sustainability. This agrees with previous research by Bezbatchenko (2011), Carew & Mitchell (2002), and Summers *et al.* (2004) that reported students' conceptual variance regarding sustainability. When engaging with students, it might be helpful to begin with the aspect of sustainability that is most commonly recognized (the environment) and to pair it with a specific focus that is generating a lot of interest, such as food. It is also important to recognize the scepticism that students may have regarding the university's engagement with sustainability and to work to ensure that genuine a commitment is made to avoid greenwashing. Campus advocates will be able to use this research and that of McNeil (2013), Sylvestre, Wright & Sherren (2013), Wright (2010), Wright & Wilton (2012) and Wright & Horst (2013) to stimulate discussion on campus as to what principles the local definition of sustainability should include or to stimulate a larger national dialogue.

This study opens up a variety of possibilities for future research. To begin, this study could be repeated every five to ten years to determine if conceptualizations change over time. Another study could investigate how the SU presidents' conceptualizations from this study compare to those of students heavily involved in campus sustainability efforts, such as active members of the Sierra Youth Coalition. In addition, comparison research could be performed in other countries to determine which sustainability ideas are shared amongst student leaders globally. This could be useful both for global discussions of SHE and for universities involved in international recruitment. Finally, a study could be completed to determine if there is an appetite from SU executives to learn more about university sustainability initiatives, how to act as change agents, and what formats would be most accessible.

While the information from this research demonstrates that there is no single understanding of SD between Canadian universities' SU presidents, it does support linking a number of topics with it. Many of these topics also overlapped with what participants considered a sustainable university and pointed to a growing holistic view of sustainability. Moving forward, universities and sustainability advocates should look to engaging with their students about these results, educating about the importance of holistic and social sustainability, and creating a dialogue about local definitions.

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Chapter 5: Barriers to sustainable universities and ways forward: Canadian Student Leaders' Perspectives

5.1 Abstract

While efforts to integrate Education for Sustainability (EfS) at universities have been increasing, this integration is not yet standard. While a number of studies have delved into the possible barriers slowing this progress and ideas for speeding it up from different perspectives, rarely have these studies included students' points of view. This knowledge gap was addressed as part of a study that utilized semi-structured interviews and concept checklists with 27 Canadian university student union (SU) presidents to investigate their conceptualizations of sustainability and sustainable universities. Thematic analysis utilizing an inductive approach was employed to discover key themes. While a number of themes emerged, one that was overarching as a general concern and both a barrier and motivator to a more sustainable university was university finances. Institutional finances are connected to students through enrolment and recruitment efforts as tuition represents a large proportion of university budgets. Participants believed students hold the greatest ability of all university stakeholders to promote sustainability on their campuses and when combined with their ability to impact university finances, the possible impact of empowered students to initiate change for more sustainable campuses is great. In order to harness this energy, this study makes recommendations to further enable students to engage with and mobilize their campuses and other stakeholders. Potential students could influence universities by demanding deeper commitments to sustainability. This study contributes to scholarly research by presenting the perspectives of an understudied, yet important, university stakeholder group regarding factors influencing campus sustainability and some recommendations for student empowerment.

5.2 Introduction

Humans are facing a complex and challenging world with discordant interactions between people and their environment. Sustainability has evolved as a lens and goal through which to address such imbalances. There are many definitions and ideas associated with sustainability, with one of the most well-known being that of "people, planet, profit" (Elkington, 1997) or the "three pillars" of economy, society, and environment (Dale & Onyx, 2005; Robinson, van Bers, & McLeod, 1996). In order to

introduce and apply the focus of sustainability to world problems, people need to first be educated about it, but there are many challenges to doing so.

Universities are particularly well placed to educate and influence future leaders regarding the sustainability lens and its importance. Unfortunately, while efforts to integrate education for sustainability (EfS) at universities have been increasing lately, it is questionable whether change is occurring fast enough. Although it is heartening to see a growing number of Canadian four year universities belonging to sustainability in higher education (SHE) organizations like the Association for the Advancement of Sustainability in Higher Education (AASHE, 2013) or signing international SHE declarations like the Talloires Declaration, they still constitute just over half of the Canadian public universities. While lack of engagement in these areas does not preclude universities from engaging in sustainability, such engagement is considered one of the most visible ways to commit to campus sustainability. This rate of integration of sustainability at universities could be due to a multitude of possible barriers including, but not limited to, misunderstandings or a lack of shared vision, a lack of sustainability champions, a lack of financial resources or competing priorities (Bartlett & Chase, 2004; Dahle & Neumayer, 2001; Kurland, 2011; Leal Filho, 2000; Nicolaides, 2006; Richardson & Lynes, 2007; Velazquez, Munguia, & Sanchez, 2005). In order to move past these barriers, SHE advocates need to know, understand and be able to effectively address them.

Students have been helping to drive SHE during the past two decades. They have created national organizations (e.g. Sierra Youth Coalition [SYC-CJS], Sierra Student Coalition, Student Environmental Action Coalition), pushed for environmentally-friendly

procurement policies (e.g. SYC-CJS's Papercut Campaign), promoted campus sustainability audits (Beringer, 2005), engaged in service-learning (Mero, 2011) and urged for the creation of sustainability coordinator positions on their campuses (e.g. Lipka, 2006). Many students are now also calling upon their universities to divest from fossil fuel investments (Canadian Youth Climate Coalition [CYCC], 2013). Even though students are often seen as campus change agents and engaged in a number of related initiatives (Earl, Lawrence, Harris & Stiller, 2003), their perspectives on SHE are understudied (Kagawa, 2007). This demonstrates the existence of a knowledge gap regarding what student leaders believe are factors impacting SHE and how they relate to those perceived by other university stakeholders. In order to begin to fill this knowledge gap, this research sought to investigate SU presidents' conceptualizations of sustainability, sustainable universities and related barriers and motivators to universities embracing sustainability initiatives.

Through in-depth interviews, SU presidents across Canada provided their views in French or English regarding their thoughts on the motivators and barriers to sustainability on their campuses. Thematic analyses of these interviews were used to determine major and minor themes using *a posteriori* codes.

5.3 Background

As higher education institutions and universities in general are believed to have a great responsibility to engage in efforts to strive for a more sustainable world (Bachiorri & Puglisi, 2007; Cortese, 2003; Orr, 1992; United Nations General Assembly, 1992; University Leaders for a Sustainable Future [ULSF], 1990), a new academic field has emerged. SHE is a subset of education scholarship (Fien, 2002) and a specialization

within the field of sustainability (Leal Filho, 2005). This field covers the vast range of sustainability initiatives at and by universities related to research, teaching, partnerships or service, and operations. Through these efforts, universities are able to act as role models and educators for some of the leaders of tomorrow and for the greater community.

As with all change, there are a variety of challenges that can make implementation difficult. A number of research studies (E.g. Bartlett & Chase, 2004; Kurland, 2011; Nicholaides, 2006; Velazquez *et al.*, 2005) have investigated barriers to SHE and found everything from communication concerns to financial barriers, attitudinal problems to academic silos. The variety may be due to the fact that each campus is its own microcosm and affected by individual factors in addition to sectorial ones. By studying various barriers to sustainable universities, possible solutions may be found.

5.3.1 Barriers to Sustainability

A number of barriers to campus sustainability are identified in the literature. A lack of knowledge, poor communication, contrary attitudes and cultural models or norms can all negatively impact campus sustainability (Djordjevic & Cotton, 2011; Kurland, 2011; Nicolaides, 2006; Richardson & Lynes, 2007; Thomas, 2004; Thompson & Green, 2005; Wright, 2010; Wright & Wilton, 2012). Without building shared conceptualizations of a complex idea like sustainability, there may be failures to communicate clearly, often influenced by different conceptualizations or errors in information processing (Dahle & Neumayer, 2001; Leal Filho, 2000; Thompson & Green, 2005). Cultural models or norms simplify ways of how one views the world and its components that people tend to hang on to (McKenzie-Mohr & Smith, 1999), which can cause resistance when

sustainability initiatives challenge how things have always been done (Thompson & Green, 2005). An example of this in the context of sustainability would be universities having large green lawns (requiring an abundance of water and chemicals) instead of consisting of a variety of naturally-occurring, indigenous plants.

Resources of all kinds can act as a limiting factor and a stimulus for sustainability, depending on their availability and applicability. With the multi-pronged mandate of the university, resources, particularly time and finances, are in high demand and subject to competing priorities (Kurland, 2011; Lozano, 2006; McNeil, 2013; Nicolaidis, 2006; Richardson & Lynes, 2007; Shriberg, 2002; Thompson & Green, 2005; Velazquez *et al.*, 2005, Wright, 2010; Wright & Horst, 2013; Wright & Wilton, 2012). University stakeholders are already tasked with a number of responsibilities and may not have the time and energy to spearhead SHE activities. In terms of finances, while much is made of energy efficiency, retrofits and other projects providing financial returns in the long run, many institutions are still facing budgetary constraints in the current year, causing long term thinking to be beyond the Board of Governors' main focus. Additional resource barriers may include natural resources, knowledge or peoplepower (Nicolaidis, 2006; Thomas, 2004). Particularly important in terms of SHE implementation and peoplepower is the existence of a sustainability champion (Lozano, 2006; Nicolaidis, 2006; Richardson & Lynes, 2007). While a sustainability champion could be any member of the university community who promotes the concept and related initiatives as key to the institution, it has been suggested that having the president or another member of the university administration as a champion better enables uptake across the university as a

whole (Kurland, 2011; Velazquez *et al.*, 2005). This is due to their ability to enact top-down change through institutional goal setting, influence and connections.

A number of factors within the structure of universities themselves have been noted as possible barriers to sustainability. One of the most noted structural barriers is the culture of the university itself, which is quite resistant to change (Moore *et al.*, 2005; Nicolaides, 2006; Shriberg, 2002; Thomas, 2005). Universities have, in large part, remained similar throughout the centuries (Shriberg, 2002), so any idea that involves major change is likely to face strong resistance. Their large size and scale can also make it difficult to distil sustainability throughout the institution (Bartlett & Chase, 2004), although it also means that should this occur successfully, the impact will also be large. The existence of academic disciplinary silos can impede sustainability adoption for reasons including a lack of communication or miscommunications and a difference in attitudes and knowledge (Bartlett & Chase, 2004; Kurland, 2011; Nicolaides, 2006; Thomas, 2004; Velazquez *et al.*, 2005). SHE is also challenged by the hierarchical nature of university governance (Leal Filho & Wright, 2002; Moore *et al.*, 2005) that can impede grassroots efforts and the transient nature of some stakeholders (Barnes & Jerman, 2002; Velazquez *et al.*, 2005). Finally, students are transient by nature, which means that within as few as four years student support for a specific project may have disappeared. This is problematic when considering the long-term changes needed to ensure sustainability is adopted into the university culture and points to the need to ensure that other university stakeholders (e.g. staff, faculty, administration) are also keen and involved with SHE projects.

5.3.2. Motivators for Sustainability

Although many barriers do exist, the use of motivators may help encourage universities to overcome them. Often mentioned are the demonstrable financial savings (Barnes & Jerman, 2002; Kurland, 2011), trying to keep up with other universities (Richardson & Lynes, 2007), and the value of campus sustainability champions (Orr, 2004, Richardson & Lynes, 2007). Financial savings are often the first way to exhort universities to engage in sustainability actions by reaching for “low-hanging fruit” or “greening the campus”, which refers to implementing efficiencies within university operations that lead to results like reduced energy costs. Other important factors in motivating universities to engage in campus sustainability efforts are stakeholder pressure (Richardson & Lynes, 2007; Shriberg, 2002) and pride in shared accomplishments and vision (Kurland, 2011).

5.3.3 Neoliberalism and the Academy

A relatively recent ideology, neoliberalism has been embraced by a number of governments, including the Canadian federal and provincial governments. Neoliberalism is characterized by the active promotion of the principles of individualisation, self-responsibility and self-government (Hardy, 2008). It has resulted in a push towards privatization or commercialization of state services, including the use of business management models in those that remain public or publically funded (Hardy, 2008). There is a general trend to “shift responsibility for education from the state to the individual and frame citizens as consumers” (Hardy, 2008, p. 26; Peters, 2004). The

adoption of this perspective has influenced a change in university funding models and has trickled down into university administration's ethos.

The influence of neoliberalism on universities is a hotly debated topic. Some, such as Côté & Allahar (2011) and Naidoo & Jamieson (2005), believe that it has a detrimental effect upon relationships between stakeholders and on the mission and goals of the institutions. Others, such as Newman & Abrams (2005) believe neoliberalism can have a negative effect on universities because they will want to provide whatever students want for recruitment purposes, even if these desires are not sustainable. Perhaps if students desire more sustainable universities then neoliberalism will instead have a positive effect on campuses. These contrasting possibilities lead to a question of how neoliberalism might impact SHE, whether it would have a positive or negative impact; this study explores this question through the perspectives of SU presidents.

5.3.4 Students Involvement in Canadian SHE

The group of stakeholders most associated with enacting change on university campuses is students. They provide a “critical mandate for change at their institutions” (Earl *et al.*, 2003, p. 91) and are the most dynamic campus group with their members in regular flux and their energy in abundance. Students have a history of acting as advocates or change agents, including in anti-war and anti-apartheid movements (Earl *et al.*, 2003). As a group, students are freer to criticize a university than any employee (Dahle & Neumayer, 2001) and as the university target group, hold a power with which no other group can compete (Dahle & Neumayer, 2001; Nicolaides, 2006).

Students have been involved with SHE on university campuses as participants and change agents in Canada. Their ability to implement pilot projects, create green funds, impact procurement decisions and change operating standards has been well documented (E.g. Bekessy, Samson & Clarkson, 2007; Helferty & Clarke, 2009; SYC-CJS, 2009; SYC-CJS Québec, 2009). The Sierra Youth Coalition, a branch of the not-for-profit environmental organization the Sierra Club of Canada, has been teaching and empowering Canadian university students about sustainability since 1998 (SYC-CJS, n.d.). Prior to AASHE's STARS program, SYC-CJS's Campus Sustainability Assessment Framework (CSAF) was one of the most used SHE audit tools. In addition, the Canadian Federation of Students (CFS), one of Canada's national university student advocacy groups, teamed up with the SYC-CJS and the David Suzuki Foundation for a "Students for Sustainability" campaign and national campus tour to promote a reduction in waste and emissions (Students for Sustainability, n.d.).

While students have played a major role in moving sustainability on Canadian university campuses forward thus far, their opinions are unfortunately under-represented in SHE research (Kagawa, 2007). Previous research has investigated student conceptualizations of sustainability (Carew & Mitchell, 2002; Kagawa, 2007; Zeegers & Clark, 2014) and priorities for SHE (Emanuel & Adams, 2011; Nejati & Nejati, 2012; Yuan & Zuo, 2012), but often using limited populations (e.g. engineering students) and usually without opportunity for students to provide open-ended or in-depth responses. None of the previous studies appeared to ask students' perspectives on barriers or motivators to SHE. Since universities need to identify and overcome barriers to sustainability, and a major focus of education for sustainability is to empower students to

become change agents (Reunamo & Pipere, 2010), this study seeks to investigate barriers and possible motivators to campus sustainability from SU presidents' perspectives and then provide recommendations as to how SUs themselves can endeavour to address them.

5.4 Methods

The purpose of this study was to better understand what student leaders perceived to be challenges and motivators to becoming a sustainable university. As such, the population for the study included all presidents of SUs representing undergraduate students on the main campuses of public Canadian universities belonging to the Association of Universities and Colleges of Canada (AUCC) (n=65). Through email and telephone recruitment, 27 SU presidents or equivalents (a 45.7% participation rate) agreed to participate with representation from 9 provinces in Canada (Figure 7). Unfortunately only two Francophones chose to participate. This meant that the French sample was not large enough to determine whether there was any difference between English and French SU presidents' responses.

SU presidents participated in semi-structured interviews (in French or English depending on their preference) about sustainability and sustainable universities (Appendix 1) and completed concept checklists on each topic (Appendices 2 & 3), based on the nested mixed-method approach first developed by Wright (2010) to investigate Canadian university presidents' conceptualizations of sustainability. These interviews were then transcribed verbatim from audio recordings and member-checked for accuracy. Qualitative data coding and analysis of the interviews were completed using N'VIVO 9 (QSR International). The language of the English respondents was used to generate codes and categories for all interviews that were then combined into major and minor themes

(McCracken, 1998) and analyzed by question using thematic analysis. Major themes were operationally defined as those that were heavily emphasized in individual interviews and repeated by multiple participants. Themes that were mentioned less strongly in multiple interviews or were strongly emphasized by a single participant were considered minor themes, although occasionally such a theme could be important enough to be considered a major code due to its perceived importance to addressing the question and the amount of emphasis it received. Quantitative analyses were completed on demographic and checklist data, although as this paper focuses on questions concerning barriers and motivators, it will contain mainly qualitative results. For the overall study, each data set (quantitative and qualitative) was dealt with separately and then integrated in the final stages of analysis.

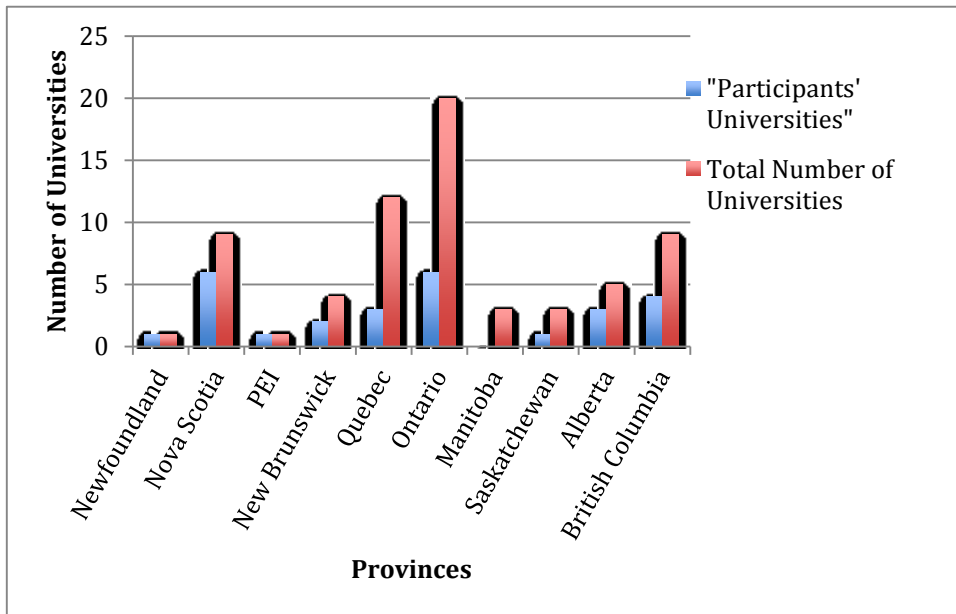


Figure 7. Comparison of represented and non-represented universities in the study by province.

5.5 Results & Discussion

While there is a rich data set associated with the interviews of SU Presidents, this article focuses specifically on questions regarding the major issues facing the university, and the motivators and barriers related to becoming a more sustainable university now and in the future. For clarity, while interviews were transcribed verbatim, the quotes used have had filler words (“um” or “ah”) and repeated words removed.

5.5.1 Key issues facing this university over the next 10 years

Participants identified a number of issues that may compete with or complement sustainability efforts and initiatives at Canadian universities. While some issues were specific to a single institution, a number of themes emerged from participants’ responses, including major themes of university finances, enrolment, infrastructure, sustainability, access to education, institutional issues, academics, research and personnel. Some minor themes mentioned by one or two people were mental health and student involvement.

The greatest issue in terms of emphasis and sheer number of mentions was university finances. Many student leaders expressed concern with decreasing funding from the provincial governments and one mentioned problems with the federal government’s education funding formula. The discussion of decreasing public funding was tied to university budgets problems, deficits, program cuts or “cut corners” – specifically cuts to student services and libraries. It was also linked to personnel issues, such as an increasing number part-time faculty and difficulties with paying pensions or wages:

« Well I'm sure you're getting this answer from everyone, about budgetary constraints, so one of our big problems is the university had their assets decreased dramatically and so things like paying pensions has been a huge issue so the budget has been really, really tight. And that's been reflected in cuts pretty much across the entire university. » (Participant 3)

The next greatest theme was university enrolment. While many cited decreasing enrolments and increasing recruitment as key issues, almost an equal number mentioned that the key issues on their campus were related to accommodating and supporting the increasing number of students on campus (campus growth).

« Declining enrolment is a huge issue at, for every university in this province, but something that I think that we're going to have to deal with. » (Participant 6)

« Number one is high enrolment, there's always demand and then there's such high wait lists for students. It's just becoming a problem for the university to accommodate them. » (Participant 23)

This recognition of university finances and related factors as key continuing issues supports current reports of difficult financial realities facing Canadian universities. The Canadian Association of University Teachers (CAUT) (2012) noted that on average provincial transfers per full-time equivalent student to higher education have decreased in

absolute dollars by 7.8% from 1993-2006, while enrolment has been increasing (AUCC, 2011). University funding is an issue often discussed by student leaders (Canadian Alliance of Student Associations [CASA], 2010; Canadian Federation of Students-Ontario, 2012; Leclaire, 2012, October 15; University of New Brunswick Student Union, 2012, April 16) as it impacts tuition levels, student financial aid, quality of education and the student experience. In interviews with other university stakeholders (McNeil, 2013; Wright, 2010; Wright & Horst, 2013; Wright & Wilton, 2012), university funding, particularly decreasing government funding, was also noted as the biggest issue facing universities. Enrolment, the growth and decline of which were linked to universities' financial health, was also of key importance to said stakeholders, although facilities management directors afforded it less importance (Wright & Wilton, 2012). This difference may be due to the fact that of these stakeholders, facilities management directors are the least impacted by enrolment fluctuations. Overall, the financial challenges facing universities is significant because "cutting corners" can negatively impact universities' ability to deliver on their mandate and uphold the social contract, as well as impede SHE's progress.

Students were also quite concerned with sustainability as a key issue for their universities' futures. The inclusion of this topic may have been influenced by participants' knowledge of the research focus, to which least two participants alluded; another participant specified that he believed sustainability was a key issue regardless of this study's focus.

« In terms of sustainability as well, keeping up, making sure there's a culture on campus and people keep sustainability at the forefront of their mind because it was a real grassroots movement, that it came from the student body, and the moment that students stop showing interest is maybe the time when the university will stop showing interest as well. » (Participant 7)

While some references to sustainability were general, it was also discussed in terms of physical operations and infrastructure, emissions and campus environment. Although sustainability was not as important to SU presidents as to facilities management directors (Wright & Wilton, 2012), it received more emphasis than it did from faculty leaders (Wright & Horst, 2013) or university administration (Wright, 2010). This could be due to students' awareness that sustainability issues, such as climate change, will affect their futures. This concern is important because universities need to determine how to address such a concern while balancing additional priorities. It is also important as it demonstrates that SU presidents believe that universities have a role to play in working towards a more sustainable future.

5.5.2 What barriers prevent your university from engaging in sustainability initiatives?

These SU leaders identified a number of barriers keeping their universities from prioritizing sustainability. Participants believed the greatest barrier to university sustainability was a lack of financial resources. It was almost always the first barrier cited and in cases where very few barriers were listed it was always included. It was discussed in terms of not enough funding in general being a problem, as well as the universities

being underfunded. An interesting aspect of said barrier and institutional barriers in general was the lack of control with service contracts or a resistance to changing these contracts:

« We're trying to get all the bottled water vending machines out of the university centre. But there are lease agreements and the university is making a certain amount of money off those vending machines, so I think that money is an important factor and they don't want to get rid of something that is a revenue generator, so that is, like, that's a barrier that we face a lot. » (Participant 26)

Additionally, stakeholder attitudes, institutional issues and government priorities were major themes in the responses. Participants often listed different negative attitudes towards sustainability as a major barrier. These included an unwillingness or resistance to implementing sustainability, due sometimes to distrust or fear of something new or because they did not value the concept. Alternatively, these attitudes may be related to institutional barriers as people may view sustainability as outside the role of the university and its mission. Occasionally the participants themselves expressed such attitudes. One participant noted that in his role as an SU president that working on sustainability was not a priority due to other focuses (e.g. access to post-secondary education). Sometimes a level of distrust appeared regarding sustainability due to it being a “buzzword” and concern about greenwashing. Apathy on campus from a number of

stakeholders was also cited as a major barrier, often in terms of how hard it can be to mobilize people.

« ... for the universities to... move towards being a sustainable university, the biggest obstacle is themselves and it'll take a culture shift within universities to open up a lot of those avenues for people, cause it's, it's not that in a lot of cases, the students of the university and a lot of professors and faculty, and there's groups at the universities that wanna move towards this, but there's also a lot of resistance from other areas within the universities because they either don't get it, it makes someone's life too difficult, it doesn't fall in line necessarily with the strategic plan that they have or it's just seen as something extraneous to the main vision of the university, which is to educate young minds. So, it's, I mean, the biggest obstacle to a university doing this is the university itself. » (Participant 1)

This research reconfirmed the role of finances and stakeholder attitudes as key barriers to campus sustainability (Djordjevic & Cotton, 2011; Franz, 1998; Kurland, 2011; Nicolaides, 2006; Velazquez *et al.*, 2005; Wright, 2010; Wright & Horst, 2013; Wright & Wilton, 2012). With finances already stretched thin due to enrolment changes and decreasing government funding, universities may often find it difficult to prioritize sustainability initiatives over other operation and programming. In such a situation, everyone is looking for more funding. While participants appeared to believe that sustainability was important and that others' attitudes were a problem, participants rarely mentioned if they would prioritize it over other areas. Their focus on barriers tended to

look at others while reflection on the role they occupied as SU presidents was not mentioned. As noted above, in one case a participant did state that in his role it was more important to focus on lobbying for greater access to education than lobbying on SHE. This lack of funding for SHE initiatives has been addressed in some cases by the creation of revolving green funds to finance capital eco-efficiency projects (E.g. Harvard's Green Revolving Fund). When financial concerns are combined with negative or apathetic attitudes towards sustainability, the existence of these two barriers can make implementing SHE incredibly difficult. As one participant put it:

« I think the budget restrictions [...] is [sic] ...definitely an obstacle, but also an excuse that people can kind of lean on whenever it comes to resisting something that might cost a little bit more money, so I think that's definitely the key.»
(Participant 3)

It is important to identify if these barriers are both in place at an institution and determine which appears to be best to address first or whether they should be addressed in tandem.

The lack of university stakeholders' buy-in, campus sustainability role models and knowledge of sustainability were also seen as barriers. In addition, a lack of agreed upon definition or shared understanding of sustainability was also a barrier to making progress. It was expressed that this made it even more difficult to coordinate and collaborate between university stakeholders when they had potentially different understandings.

« So, just everyone being on the same page with what sustainability actually means and how to get there, that's a huge, **huge** barrier everyone in the world seems to need to overcome, so, or be on the same page anyway. » (Participant 25)

This lack of a shared conceptualization of sustainability and/or campus sustainability leaders is also known to be a major barrier to SHE (Kurland 2011; Leal Filho, 2000; Nicolaidis, 2006; Richardson & Lynes, 2007; Velazquez *et al.*, 2005). The lack of shared conceptualizations of SHE is an issue that many have tried to address in recent years (McNeil, 2013; Sylvestre, 2013; Wright & Horst, 2013; Wright & Wilton, 2012), as without them resistance may occur due to misunderstandings (Pieterse, Caniëls & Homan, 2012). By confirming that student leaders also consider lacking a shared understanding of sustainability a problem, the importance of beginning any SHE course of action with a localized stakeholder discussion of SHE and with regular communication throughout the process to minimize future problems is validated.

A number of sub-themes were identified under institutional barriers. They included university priorities, size, type, culture, growth, design, service contracts and commodification, most of which were only identified by one or two participants, but were still important. Institutional culture was a major sub-theme that touched on issues of traditionalism and fragmentation or silos. Some of these barriers, such as fragmentation and university culture have previously been identified by Kurland (2011), Nicolaidis (2006), Thomas (2004) and Velazquez *et al.*, (2005). The notation of such barriers emphasizes the importance of a localized approach to addressing each universities barrier, including sectorial ones, instead of a “one-size fits all” approach.

5.5.3 Will there be different barriers and challenges in the future?

When asked about different barriers and challenges to university sustainability in the future, many participants identified some new ones, but others felt current ones would be maintained or reduced. The barriers expected to remain included finances, growth, academic culture and related attitudes, and the commodification of campus sustainability.

« I was just saying that, like, the kind of barriers that we have are the kind of barriers that will never totally go away, like financial barriers and, like, lack of will power. » (Participant 3)

This belief that many barriers would continue to exist echoed Wright's (2010) and Wright & Wilton's (2012) findings. This is important because it demonstrates that by addressing barriers that universities currently face they may greatly diminish the number of barriers they will have to face in the future.

Other major themes that emerged were administrative barriers, a lack of resources and a fundamental shift. These last two themes were related because participants believed a major change such as a lack of natural resources, time or a fundamental environmental change, would become a barrier.

« Maybe in the future, well, I mean depletion of natural resources is a huge issue and maybe by that time we won't be able to do, it'll be too late,

maybe. And, maybe the barrier will be that...we just can't find sustainable practices that are viable. » (Participant 6)

This idea of a fundamental change is important because it demonstrates that some SU presidents recognize resources as being limited and see the potential for humanity to doom itself by ignoring this fact. This is an issue that Wackenagel & Rees (1996) illuminated with their work on ecological footprints.

In addition, minor themes of difficulties navigating greater sustainability partnerships, communication, and a lack of demand for sustainability on campus were discussed. The fact that communication difficulties received little emphasis was a surprise since they have often been found to be a barrier to campus sustainability (Bartlett & Chase, 2004; Leal Filho & Wright, 2002; Nicolaidis, 2006). Perhaps this reflects a belief that communication regarding SHE is improving and thus will no longer be a barrier to implementing SHE projects. It is also possible that it is just not something with which participants were familiar in their current roles.

5.5.4 What factors would make becoming a leader in sustainability the top priority for your university?

Participants were able to identify a number of factors or motivators that would entice their universities to prioritize being a leader in sustainability. Participants suggested financial incentives, government initiatives, regulations, sustainability role models, buy-in from various university stakeholders, and increases in university standing tied to sustainability. Additionally, some participants thought that better education of

campus stakeholders about sustainability or adding it into the university's vision would improve campus efforts.

As previously noted, finances are considered a significant barrier to SHE. SU presidents believed that if universities were offered financial incentives that it would encourage an increase in SHE initiatives; this also included the possibility of increased enrolment revenue through increased standing or reputation for the university. Financial incentives were also a key SHE motivator identified by Kurland (2011), McNeil (2013), Wright & Horst (2013), Wright & Wilton (2012). This is important because this is a barrier that could be influenced by external actors, such as governments, publishers of university rankings or granting agencies.

Targeted student pressure for campus sustainability was believed to have great power to influence their institutions. After reviewing sustainability barriers, participants felt they could encourage their institutions to become sustainability leaders; there are a number of ways in which students themselves could provide encouragement, provided apathy was dispelled. Participant 1 provided a current example noting:

« ...a big push from students has been we want local, sustainable, healthy food options and the university's heard that and the university's told their food service provider to, to do that as much as possible. »

Students' greater bargaining power was attributed to the greater financial impact tuition and fees now have on university operating budgets due to decreasing support from all levels of government (CAUT, 2012).

Unlike leaders of faculty associations (Wright & Horst, 2013), SU presidents thought their own cohort (students) had the greatest ability to promote sustainability; leaders of faculty associations also stated that students were in the best position to promote SHE. Prospective students could identify sustainability initiatives as important in choosing their university, while current students could lobby their administration for changes. This focus on student desires as a motivator supports the finding of Richardson & Lynes (2007) and Shriberg (2002) that stakeholder pressure is considered a motivator. This is important because it demonstrates that if students feel empowered and understand the importance of SHE that these SU presidents feel that they are able to enact change.

5.5.5 Do you believe that the recent trend of universities viewing students as "customers" influences sustainability on your campus? If so, in what way?

This question provided the opportunity to learn more about SU presidents' thoughts regarding the neo-liberal idea of "students as customers", including if and how it impacted their universities. Most participants believed that campus sustainability efforts were influenced by the idea (Figure 8). The majority of participants felt that viewing students as customers instead of as learners was a poor idea in general or that would negatively impact campus life. At the same time, many of participants also noted potential benefits for sustainability due to this relationship.

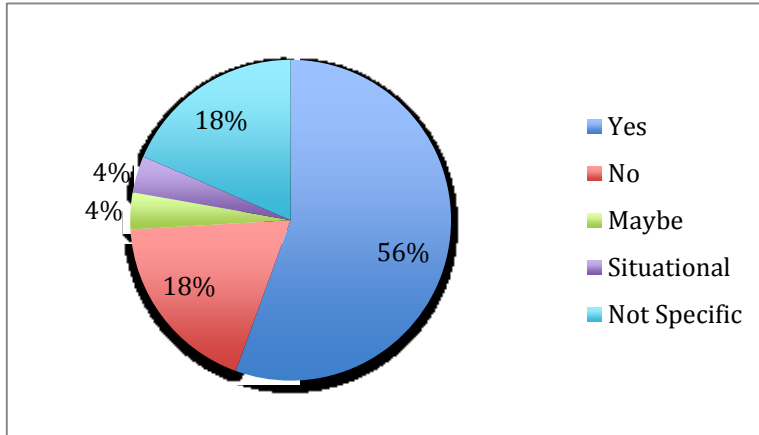


Figure 8: Canadian SU presidents’ responses to if and how the idea of “students as customers” affects sustainability on their campuses.

A number of themes arose from the responses to this question. Participants discussed student influence, the commodification of sustainability, the financial focus or corporatization at universities, superficial sustainability, accountability, feelings of the university community, and university promotion of consumerism. The greatest theme to emerge was that of perceived student influence in campus sustainability. This influence even extended to prospective students. This theme tied into the second greatest theme, university finances, as students’ power as customers was linked to universities adapting to what they believe students want in order to recruit and retain them. The commodification of sustainability was linked with doing so for improved ratings, reputations or enrolments, all of which also tied in to superficial sustainability and university finances. The connection between university finance, student choice and campus sustainability was thus found to be considered both positive and negative compared to Newman & Abrams’ (2005) barrier perspective. Concerns were raised about how the university viewing itself as a business and students as customers placed the emphasis on institutional finances instead of education, quality or campus life, a shift

noted in neoliberal ideology (Hardy, 2008). Some participants felt this focus on the financial exchange caused a change in campus dynamics, negatively affecting the community fabric of universities. Participants felt that it reduced the respect between various university stakeholders, particularly between students and administration, and the feeling of inclusion, all of which were hypothesized as possible results of consumerism and corporatization of universities by Naidoo & Jamieson (2005).

« So if customers wanted, customers being students, wanted to go to a sustainable university then there would be a push for more universities to become sustainable. But I believe, ultimately, looking at people as customers really puts an emphasis on the finances of it, and I think that's not the most important part. I think the most important part is the quality of the education and I think that sustainability is beneficial to that in all ways. » (Participant 2)

These negative feelings regarding students as customers and the commercialization of SHE are important for universities to understand when approaching stakeholder relations, marketing and SHE initiatives. Students should be engaged as respected and integral pieces of the university community fabric in order to feel connected to the institution and project, and consulted on how to deepen SHE efforts on campus beyond any possibility of “greenwashing”.

5.6 Conclusion

This study demonstrates that a sample of Canadian SU presidents recognize a number of barriers and motivators that affect campus sustainability efforts. Some of the key factors that were noted as both barriers and motivators included finances, shared conceptualizations, stakeholder attitudes and influence; stakeholders, finances and enrolment are very important to universities in general and in regards to sustainability initiatives. Whether as campus sustainability role models, through the peoplepower to make projects happen, or through market pressure, university community stakeholders – particularly students - hold enormous power over the progress of campus sustainability. Students interact with both enrolment and financial pressure to further impact universities in diverse fashions, both positive and negative. Financial pressures are said to particularly impact SHE and while related savings have spurred some adoption, the requirement of large financial inputs appears to hold up implementation of SHE initiatives.

The assertion that students were the stakeholder group with the greatest ability to influence forward momentum on campus sustainability efforts was a crucial finding. This demonstrates that student leaders believe that universities are receptive to students' demands and are responding to them in order to improve recruitment. It may be possible that compared to the general student body that SU presidents have a greater impression of students' power to influence change on campus due to their role, but the limited research on students' perspectives regarding SHE does not provide any related information. Faculty leaders interviewed by Wright & Horst (2013) also identified students as group with the greatest power to initiate change. The support for this finding demonstrates that stakeholder pressure is key (Richardson & Lynes, 2007; Shriberg, 2002). There were

concerns about the potential for universities to respond to students' demands with greenwashing or by using superficial sustainability to market themselves. These concerns were related to concerns about the potential negative influence of neoliberalism in SHE and the emphasis upon funding over community building, although the possibility to use such a focus to pressure universities to integrate more sustainable thought and initiatives was also discussed.

This study lends strength to the SHE literature on barriers to university sustainability, specifically that a lack of finances, stakeholder buy-in, sustainability champions, a shared understanding of sustainability and disciplinary silos can make implementing campus sustainability programming difficult (Kurland, 2011; Nicolaides, 2006; Thomas, 2004; Velazquez *et al.*, 2005). Previous research by McNeil (2013), Sylvestre (2013), Wright (2010), Wright & Horst (2013), Wright & Wilton (2012) and Velazquez *et al.* (2005) has illustrated the importance that other stakeholders also place on such areas. It also supports Wright & Horst (2013) finding that students are the university stakeholders believed to have the greatest power to initiate change and that stakeholder pressure is key (Richardson & Lynes, 2007; Shriberg, 2002). Even with all of these barriers, SU presidents remained positive while discussing opportunities for SHE. One key difference between these results and the literature (Côté & Allahar, 2011; Newman & Abrams, 2005) is that while neoliberalism and the commodification of SHE were far from viewed as positive, many SU presidents did note that it could offer students greater opportunity to pressure universities to implement sustainability initiatives.

This study also adds to the SHE literature by providing new insights into a couple of areas. One key area of new information is SU presidents' perspectives on barriers and

motivators. While the results of this study echoed many of those previously found in the literature, this is one of the few studies to confirm similarities between what challenges and positive influences student leaders perceive and those of other university stakeholders. It contributes to current research on the challenges universities confront overall in continuing to implement their mandates by illustrating student leaders' view of what they face. In addition, it sheds some light on the perceived influence of neoliberalism on campus sustainability. Finally, it demonstrates that student leaders are concerned about the commercialization and superficial use of the term "sustainability" in higher education. This illustrates a need for universities to use the term with care and to ensure that they are initiating robust practices to avoid "greenwashing" or appearing to pose as an institution that cares about sustainability only insofar as its marketing and recruitment prospects. While it is important to try to prepare for well-known barriers to campus sustainability, campus stakeholders must also turn inward and review the institutional and community makeup, processes and operations in order to determine additional barriers in their higher education microcosm.

5.6.1 Recommendations

5.6.1.1 Students' Unions

The results of this research demonstrate that SU presidents believe that students have the ability to pressure universities for greater SHE. Participant 1 even provided an example of this successfully causing his university to request more local food from its service providers. It is through SUs that students have access to collective resources and shared capacity for change. SUs are able to support the implementation of larger

engagement and educational campaigns than student societies alone and have the ability to connect student leaders of all backgrounds. Taking into account the perceived barriers and motivators to SHE that SU leaders noted above and previous SHE successes, the researcher created the following suggestions for ways in which SUs could help empower their members to engage in sustainability efforts on campus:

- i. Educate and advise students about how to move initiatives through administrative processes

As noted by Participant 1, “*the biggest obstacle to a university doing this is the university itself*”. Universities are known for their resistance to change and this can make finding out processes and moving new initiatives forward can be quite difficult. When combined with staff, faculty or administration with negative attitudes towards sustainability, this might become even more difficult. By providing students with information on university processes, teaching useful skills or sharing information about possible supporters, SUs can help address these barriers.

- ii. Create funding mechanisms for sustainability initiatives through existing funds or the creation of a new levy (see AASHE 2012 for examples).

This recommendation is based on numerous participants stating that a lack of funding was a barrier to SHE and that making funding available could act as a motivator for new initiatives.

- iii. Support initiatives that engage campus stakeholders in discussions about sustainability and visioning what that might mean in the local campus context.

A number of participants reported that a lack of a shared understanding regarding sustainability was a barrier for SHE at their university, thus working towards such a thing

can help encourage SHE. While some campuses may already have sustainability advisory councils, SUs can offer to partner with them to engage university stakeholders in such discussions in general or in regards to specific projects.

iv. Advocate for the inclusion of sustainability within institutional documents, including those that would affect external service providers.

As noted, a number of participants were concerned with the commodification of sustainability and the corporatization of the university due to fears of the university using greenwashing or superficial sustainability to recruit students without truly committing to sustainability. By advocating for sustainability's inclusion in key institutional documents, SUs can help address this concern; they could even lead by example.

5.6.1.2 Future Students

Although current students represent existing members of the university, with the financial crunch that universities are now experiencing (CAUT, 2012), a significant amount of energy and finances often supports recruitment efforts. There is already evidence that universities are beginning to reorient themselves to utilize sustainability for recruitment purposes as more potential students consider it an important part of selecting an institution (The Princeton Review, 2012).

i. Potential students could influence campus sustainability by demanding demonstrated deeper commitments to sustainability from universities. This could be done through potential students directly contacting universities (e-mails, campus tours, recruitment events) or through indirect methods such as requesting university sustainability rankings.

As noted, a number of participants were concerned with the commodification of sustainability and the corporatization of the university due to fears of the university using greenwashing or superficial sustainability to recruit students without truly committing to sustainability. By advocating for sustainability's inclusion in key institutional documents, SUs can help address this concern; they could even lead by example.

A number of barriers and competing priorities to sustainability in Canadian universities exist, both now and in the future. Although these may sometimes seem overwhelming given the slow progress, there is reason to remain hopeful. As society and students have become more familiar with the term and ideas behind sustainability, university stakeholders have recognized their responsibility to be a part of the change (McNeil, 2013, Sylvestre, 2013, Wright & Wilton, 2012; Wright & Horst, 2011). Although some barriers will continue to be difficult for sustainability advocates to navigate, they are not insurmountable.

While students are believed by themselves and others (Wright & Horst, 2013) to be capable of energizing the progress of SHE, it is important to note that all university stakeholders must be involved in moving campus sustainability forward. A localized approach to analyzing barriers and motivators, particularly to developing a shared conceptualization of sustainability, appears to be key. The majority of this paper's recommendations can and should be considered applicable to other members of the campus community, whether through organizing or in participating in them.

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Chapter 6: Conclusion

This chapter summarizes key information from this study and provides an overview of the major findings of the research. It offers practical recommendations for how students' unions (SU) can help move campus sustainability forward, ways in which the study contributes to the greater research community, a list of the study's limitations and some suggestions for future research.

6.1 Summary of Research

Universities have a special responsibility to participate in efforts to move towards a more sustainable future (Cortese, 2003; Orr, 1992; University Leaders for a Sustainable Future [ULSF], 1990; United Nations General Assembly, 1992) and are well-placed to be leaders in these efforts. Unfortunately, they have been tasked with this responsibility while having limited knowledge of how their stakeholders conceptualize these goals and the institutions' roles. While individual universities may have some understanding of their particular stakeholders' conceptualizations, they may still have limited information about the conceptualizations of Canadian university students in general and of prospective university students. Shared understandings have been noted as important to efficient teamwork, clear communications and progress towards SHE (Hinds & Weisband, 2003; Wals & Jickling, 2002). This study sought to investigate how Canadian SU presidents understand SHE. It did this by exploring conceptualizations of sustainability and sustainable universities held by a number of Canadian SU presidents and their perceptions of related university roles. It also investigated the barriers and motivators to SHE that they perceived. While the topic of how people conceptualize sustainability has been a perennial question and SHE scholars have a generally held understanding of the

term (Wright, 2007), there has been little research investigating students' conceptualizations even though they are a key university stakeholder group (Kagawa, 2007). Through learning about SU presidents' conceptualizations of these terms and related topics, we can better examine how they align (or not) with the ideas held by other university stakeholders, determine which key concepts have become most accepted and postulate as to whether a single conceptualization of such terms is possible. In addition, this research strove to provide both time for reflection and materials to student leaders and student representatives to encourage thought and discussion about SHE. The researcher facilitated this by giving student leaders' reflection time during this research and through the direct dissemination of the results to SUs and targeted student associations.

This investigation into SUs presidents' conceptualizations was completed using the following research questions:

1. What are Canadian SU presidents' conceptualizations of sustainability?
2. What are Canadian SU presidents' conceptualizations of sustainable universities?
3. What do Canadian SU presidents' perceive as the role of universities in striving for a more sustainable future?
4. What are the barriers or motivators to becoming a sustainable university perceived by Canadian SU presidents?

These questions were explored through open-ended, semi-structured interviews combined with two concept checklists (described in Chapter 3).

6.2 Main Findings

6.2.1 Conceptualizations of Sustainability

This research determined that while shared conceptualizations of sustainability are important, currently Canadian SU presidents hold diverse conceptualizations of the term “sustainable development”. The mixed methods approach helped to further demonstrate this variance by providing the opportunity to triangulate the data and determine which ideas were supported in both the interviews and checklist responses, as well as those that might have been missed had only one method been used. The approach also allowed for greater depth of investigation through the interview questions. Only eight concepts received support during both the checklist and interviews; of those, five received strong support and three received weak support. The most supported concepts across both methods were concerned with integrating holistic sustainability with decision-making, conserving and enhancing resources, reducing human impacts, valuing the non-human world, ensuring appropriate economic growth and greater regional self-reliance; inter- and intragenerational equity were also important concepts.

Many of the participants identified SD as a holistic idea, either in general or specifically through mention of the “three pillars” of ecological integrity, social equity and economic prosperity. In cases that did not take this broad view, the ideas emphasized the environmental aspects of sustainability more than the social or economic ones. In addition, participants stressed continuity and considering future impacts as important parts of sustainability. This may be related to both the literal and Brundtland definitions of the term sustainable development, which emphasized these ideas and were mentioned by participants within the interviews.

It is vital to note that while a number of criticisms of sustainability arose (e.g. SD is a buzzword, oxymoron, vague), the overall feeling regarding the term remained positive. In addition, everyone recognized the term, even though a couple of participants expressed some embarrassment regarding their uncertainty about how to define it. This goodwill and strong recognition lends support to the argument for continuing to use “sustainability” and “sustainable development” instead of pushing for the adoption of terms like “resilience” to become the new overarching concept.

6.2.2 Role of Universities in Striving for a More Sustainable Future

SU presidents overwhelmingly believed that universities should be leaders in the efforts to strive for a more sustainable world and to use their abilities and position within society to educate their stakeholders, including the broader community, about best practices. It was suggested that this could be done through acting as a role model by empowering stakeholders and by implementing sustainability best practices in physical and administrative operations, including governance, and through completing and sharing relevant research. These methods all speak to the identified missions of universities: teaching, research and public service.

6.2.3 Conceptualizations of Sustainable Universities

There is a greater consensus between SU presidents’ regarding what constitutes a sustainable university than what constitutes sustainability in general. The mixed methods approach of this study meant that this finding was able to be supported by two different datasets - the interview and checklist results. Many checklist concepts (63%) received

support from a majority of participants, with support reaching up to 93%, and a number of those concepts (46.4%) were also themes discovered during the interviews. By employing this mixed methods approach, the researcher gathered more in-depth information about these themes and concepts than would have been possible with just the checklist. The use of the checklist in addition to the interviews also provided an opportunity for participants to think about more specific concepts than they may have considered during their interview responses. This may be part of the reason why participants did not specifically mention opportunities to study campus sustainability issues, student consultations, sustainability audits or commitments in their interviews, yet chose them in the checklists. It is also possible that other factors may have influenced these omissions during interviews.

At a basic level, many SU presidents felt that continuing to function was a key aspect of a sustainable university and thus there should be a focus on ensuring adequate funding to maintain its core functions before adding additional initiatives. This inclusion of institutional sustainability as a necessary part of SHE was also noted by Sylvestre (2013), Wright (2010), and Wright & Horst (2013), although it has not often been noted as a key aspect of SHE (Sylvestre, 2013). While the majority of participants took a holistic view of a sustainable university, noting economic, social and environmental aspects as needing to be integrated into all parts of a university (operations, governance, academics, research and culture), of those three aspects, the environment was again the most emphasized. This emphasis on the environment reflected the results of Wright (2010), Wright & Horst (2013) and Wright & Wilton (2012). Most participants also felt

that universities must continue to engage with other organizations and stakeholders in order to work towards sustainability.

6.2.4 Barriers and Motivators to University Sustainability

Not surprisingly, finances were identified as both a key barrier and motivator to campus sustainability. Within the funding reality that Canadian universities currently face (decreasing university funding over the past decade, increasing deferred maintenance costs, enrolment strains), there are a number of key competing priorities for university budgets that make focusing on sustainability initiatives that are not self-sustaining quite difficult. This research also demonstrated that institutional sustainability should be more integrated into SHE conceptualizations. These financial pressures are expected to remain in the future. This is important because it is a factor that can be addressed both from within and without the academy through such things as energy efficiencies for operational projects, revolving green funds or sustainability grants from donors or governments.

A major finding was that SU presidents believed that students have the ability to strongly influence campus sustainability. In fact, it was believed that this power extends even to potential students due to the financial impact of enrolment upon university budgets. This conviction that students are best well-suited to effect changes for sustainability on campus was echoed by Canadian faculty members (Wright & Horst, 2013).

Stakeholder attitudes, a shared understanding of sustainability and campus sustainability role models were also considered key to whether or not sustainability

initiatives moved forward on campus. A lack of support in these three areas has been noted as a barrier to campus sustainability throughout SHE literature (Djordjevic & Cotton, 2011; Kurland, 2011; Nicolaides, 2006; Richardson & Lynes, 2007). Problematic attitudes were said to include those that viewed sustainability as outside the mission of universities, focused on traditionalism or negatively viewed sustainability in general. The lack of a shared understanding of sustainability was viewed as a “huge” problem because it made communicating and collaborating complicated. When communications are ambiguous, misunderstandings may lead to resistance (Pieterse, Caniëls, & Homan, 2012). Efforts have been made to explore this conceptualization challenge amongst other university stakeholders in recent years (McNeil, 2013; Sylvestre, 2013; Wright & Horst, 2013; Wright & Wilton, 2012).

The majority of barriers that participants named were also expected to continue into the future. Some of these (finances, academic silos) are systemic or structural and often noted within the literature (Kurland, 2011; Nicolaides, 2006; Richardson & Lynes, 2007). Should universities take steps to address these barriers now, they may significantly decrease the barriers to campus sustainability in the future.

6.2.5 Commodification and Corporatization

Throughout the interviews, concerns about the corporatization of universities and commodification of both education and sustainability were mentioned. These concerns were centred on the idea that the current emphasis on university finances might promote a shallow version of sustainability for recruitment goals or that might be to the detriment of the university community fabric. Some participants specifically noted the importance of

being mindful of sustainability when considering and negotiating service contracts on campus, such as whether or not bottled water is included in vending machines.

This commodification of education and sustainability was not necessarily seen as negative by all participants; some drew positive connections to students' political power.

This related to the previous finding that students can strongly influence campus sustainability by requesting and expecting greater efforts from their universities.

Although some participants felt that commercialization has created a situation in which a student is now a customer instead of a learner and community member, they believed that the "customer is always right" mentality has universities often working to offer what they believe students want most in order to entice greater enrolment and higher ratings.

These mixed results demonstrate a level of awareness and concern of which university administrators, recruiters and sustainability practitioners should take note. A fine line must be balanced between recognizing students' financial power and continuing to treat them as a valued stakeholder. A key aspect of this is ensuring that they feel like more than just a number during their university experience, that there is collaboration to determine preferences and needs, and that universities avoid "shallow" sustainability decisions to avoid being accused of "greenwashing".

6.3 Research Contributions

This study contributes to the field of SHE by helping to narrow gaps in scholarly SHE literature with the creation of a baseline of Canadian student leader conceptualizations of sustainability and sustainable universities. It provides insight into the perceived role of universities in society's sustainability efforts and both the barriers and motivators for SHE perceived by SU presidents. It also demonstrates that Wright's

(2010) methods can be applied to investigations into SU presidents' conceptualizations to obtain in-depth results, provides a broad overview of ways in which Canadian students' have been involved in SHE, and contributes to the stimulation of greater discussion regarding SHE by students across Canada.

This study helps to close the knowledge gap regarding SU presidents' conceptualizations of sustainability and sustainable universities. Although a major university stakeholder, students' SHE thoughts have been under-researched (Kagawa, 2007). This research concluded that a single definition of sustainability or sustainable universities is unlikely due to the conceptual variance held by members of this one stakeholder group. Encouragingly, there was support for an increasingly holistic understanding of the terms. As it was impossible to create a single definition representing all of the expressed viewpoints regarding sustainability, the complexity and difficulty of creating one recognized by a greater number and variety of stakeholders would be astounding. This points to the need to hold localized discussions to determine at least a common direction for sustainability on campus, while Sylvestre (2013) suggests that within this, a plurality of definitions should be recognized. As there was greater consensus regarding what constitutes sustainable universities and students often used practical examples to explain sustainability, perhaps participants are better able to engage with the idea of sustainability through more specific applications or in more familiar contexts.

In regards to perceived barriers and motivators to SHE and the expected role of universities in striving more a sustainable future, this research contributes to scholarly research by discovering that many SU presidents are in agreement with other university

stakeholders and SHE scholars. They believe universities should be acting as sustainability leaders through education, research and role modelling. Many of the factors noted as barriers to SHE when lacking were also believed to facilitate SHE when they existed in abundance (e.g. funding, supportive attitudes). Of note, these SU presidents appear to be one of the few university stakeholders that consider their stakeholder group (students) best suited to drive campus sustainability efforts; this perception of students as key to SHE was also held by university faculty association leaders (Wright & Horst, 2013). The importance of having a shared understanding of sustainability was also stressed; while a goal of this study was to determine if a single shared conceptualization was possible, as noted previously, localized discussions for the creation of shared conceptualizations is necessary and may still require a plurality of ideas.

As research into students' conceptualizations regarding SHE is still limited, additional examples of applicable and successful methods are needed. This study demonstrates that Wright's (2010) methods can be used with students to provide in-depth and triangulated mixed methods results. This allows for richer investigation than through surveys, the most prolific method currently in use.

Another research contribution was to provide a review of students' involvement in the Canadian SHE movement and ways in which they can continue to move it forward. Canadian university students have been heavily involved with the campus sustainability movement through national student organizations like the Sierra Youth Coalition and the Canadian Federation of Students (CFS) for more than a decade. Recently Canadian students and youth have also been mobilizing for university divestment from fossil fuels through the Canadian Youth Climate Coalition (CYCC, 2013). While students' efforts

have occasionally been illuminated in academic works (e.g. Beringer, 2005; Helferty & Clarke, 2009), these have looked at discrete actions and not the overall impact of students on university sustainability. Regional reports from the Sierra Youth Coalition-Coalition jeunesse Sierra (SYC-CJS) are currently the best source for a variety of Canadian student SHE victories. These documents show how students have made significant changes through campus and regional initiatives, such as the Papercut Campaign in Atlantic Canada (SYC-CJS Atlantic, 2008) and a No Sweat/Fair Trade policy by the University of Ottawa Board of Governors (SYC-CJS, 2008).

Finally, this study will contribute to increased discussion of SHE by students across Canada. Some stimulation was provided through SU presidents' participation in the study itself due to questions designed to make them think specifically about the topic and the opportunity to take time and reflect on their thoughts. Some participants chose to share additional thoughts at the end of the interview after their time spent reflecting on the subject. In addition, stimulation and discussion may also occur through the use of various dissemination channels. A number of students attended conferences at which this research was presented and Chapter 5 was available online for a month through an open-access conference. Ultimately, this research will be available electronically, research summaries will be provided to participants, SUs and related student organizations, and efforts will be made to publish the manuscripts. Finally, discussion may also be stimulated by this study within existing student or SHE networks. While perhaps a bit of a stretch, it may encourage such student networks to think about how to increase the visibility of their perspectives regarding SHE within academic literature after learning how rarely they are currently included.

6.4 Practical Recommendations

As this study was meant in part to provide students with a greater voice and help them engage further in sustainability discussions and efforts on their campus, practical recommendations were developed. These were developed in response to barriers and/or motivators mentioned by participants and from reading SHE success stories in the literature. This is by no means an exhaustive list of recommendations, but one that highlights ways in which SUs and potential university students can help advance the sustainability movement on campuses. These initiatives may also require or be improved with support from other university stakeholders.

6.4.1 Students' Unions

6.4.1.1 Educate and advise students about how to move initiatives through administrative processes

SU presidents noted that the ways in which universities are structured and the bureaucracy through which projects navigate can be a barrier to sustainability projects. If some of the most institutionally knowledgeable students on campus believe bureaucracy can be difficult to navigate, then one can expect that the average student with a project idea might be confused as to how to move forward with obtaining buy-in or permissions from key stakeholders, funding, etc. Many SUs already provide basic training and support to societies in general, sometimes including environmental ones. Perhaps additional support could be provided for larger or targeted projects. There are a various ways to provide such support; the creation of a sustainability coordinator position within the SU or shared with the university, or even the creation of a sustainability office are methods

that have been adopted in recent years (e.g., the Mount Allison Students' Union's sustainability coordinator [MASU, 2014], Dalhousie Students' Union's Sustainability Office [DSUSO, 2014]).

6.4.1.2 Create funding mechanisms for sustainability initiatives through existing funds or the creation of a new levy

Since finances have often been described as both a barrier and a motivator to sustainability initiative implementation, including in the current study, the creation of new funds dedicated for projects that fall within agreed-upon criteria could significantly alter the ability to realize new proposals. Recently, some SUs have held referenda that resulted in the initiation of green levies. This means that students felt environmental or sustainability projects were so important that the majority voted to pay an additional fee in order to finance them. (See AASHE, 2012 for coverage of some such fees.) Since the SU is the only organization other than the university able to collect money from all students, it may be the easiest method for all students to have a vote on the importance sustainability.

6.4.1.3 Support initiatives that engage campus stakeholders in discussions about sustainability and visioning, and what that might mean in the local campus context

A major finding of this research was that while there is a greater shared conceptualization of sustainable universities, variation remained. It would be useful to bring together stakeholders to discuss and agree upon either a broad working definition under which to focus on common ground or to engage the greater student body in the discussion and charge them with going back to their departments and discussing disciplinary approaches.

6.4.1.4 Advocate for the inclusion of sustainability within institutional documents, including those that would affect external service providers

As this research found that some student leaders were concerned with how universities enshrined their sustainability commitments (fears of greenwashing), lobbying for the inclusion of some sustainability measurements or language within institutional documents could be a way to move towards greater accountability. While becoming signatories of SHE declarations is a way in which some universities have signalled their commitment to sustainability, Wright (2002) found that this did not ensure efforts were implemented on campus. In particular, some SU presidents were concerned with how contracts with external providers affected campus sustainability efforts. In some cases these external contracts can allow universities to move their sustainability agendas forward. (E.g. Participant 1's example of student pressure causing the university to encourage its food service providers to provide a percentage of produce from local sources) In other cases external contracts have provided barriers to projects, such as becoming water bottle-free campuses. If SUs lobby university administration for the inclusion or exclusion of specific terms in a request for proposals, they might help improve external service providers' campus impacts.

6.4.2 Future University Students

Due to the financial strains currently being experienced by Canadian universities (Canadian Alliance of University Teachers [CAUT], 2012), a greater emphasis and more resources are being directed towards student recruitment. This leads universities to be more attuned to prospective students' preferences and desires. Evidence already exists that demonstrates universities are beginning to employ campus sustainability as a

recruitment tool because of an increasing interest from young people (The Princeton Review, 2012). Prospective students could help influence SHE by demanding demonstrable commitments to sustainability from universities that they are considering. While difficult, this could be accomplished through requesting university sustainability reports and sustainability rankings (e.g. from AASHE Stars) be included in recruitment packages, asking pointed questions during campus tours or recruitment presentations and/or through direct communication with the university through social media, e-mail or telephone.

6.5 Limitations

As with all research, this study has some associated limitations, including two forms of participant biases. Due to the forms of recruitment utilized, a self-selection bias may have existed as participants chose to volunteer their time for the research. This means that it is possible that participants had a greater or particular interest in sustainability or sustainable universities than the general population of SU presidents. Additionally, it is possible that the presence of the researcher during the interviews and checklist could have influenced participants to discuss topics that they believed the researcher wanted to hear, causing the beneficent subject effect (Dane, 2010), such as sustainability as a key university issue. The researcher tried to minimize this possible effect by utilizing neutral language and having participants self-define their conceptualizations.

Time and money limitations led to the use of videoconferencing software instead of in-person interviews in most cases. Canada is a geographically large country and it was not possible with the funding or time available as a master's student to visit campuses

across the country. As we wanted to interview as many participants as possible, videoconferencing software provided the most appropriate simulation of an in-person interview for those far away. While it is possible that this usage of technology had an impact upon the interaction between participant and researcher due to dropped calls, it did not appear to negatively impact the rapport between parties nor the interest of participants.

Another limitation is related to the researcher's decision not to use a translator. Although the researcher has previous experience working with students in French, as someone who was not a native member of the Francophone participants' cultural group, there is a possibility that her understanding and translation of responses were affected (Freed, 1998). Multiple efforts were made to minimize any possible negative impacts including the researcher's participation in an immersive Quebecois French program, the analysis of quotes in their original language, discussion with a member of the cultural group who served as a transcriptionist whenever the researcher had questions regarding connotations and the provision of quotes in the original language with translation provided below. In addition, the researcher described her approach to translation in-depth in the methods section of this thesis. This research was unable to analyze differences and similarities between participants by language because the sample size for those who chose to participate in French (2 participants) was too small.

6.6 Future Research

6.6.1 A comparison of how Canadian university stakeholders' conceptualize sustainability, sustainable universities and universities' role in striving for a more sustainable future.

This research was launched as part of a larger investigation (Principal Investigator – Dr. Tarah Wright, Dalhousie University) into Canadian university stakeholders’ conceptualizations of these ideas that was funded by a Standard Research Grant from the Social Sciences and Humanities Research Council of Canada. In addition to SU presidents, data were also collected from faculty (Sylvestre, 2013, Wright & Horst, 2013), facilities management directors (Wright & Wilton, 2012) and university presidents (McNeil, 2013). Research that delves into how each group’s conceptualizations are similar or distinct could provide insight into how universities may better discuss these terms amongst their stakeholders and illustrate any fundamental differences that need to be addressed.

6.6.2 Ongoing snapshots and comparisons of Canadian SU presidents’ conceptualizations of sustainability and sustainable universities

One function of this research was to provide a baseline of Canadian university SU presidents’ conceptualizations of sustainability, sustainable universities and the perceived related role of universities. Now that this has been created, future research could replicate the study to provide benchmarks of how the conceptualizations change every five to ten years.

6.6.3 Investigation into and comparison with other Canadian students’ conceptualizations of sustainability and sustainable universities

Investigating the perspectives of other students and student groups would also provide greater insight into higher education stakeholders. Research into the

conceptualizations of students self-identified as involved in the Canadian SHE movement, such as those who are members of the SYC-CJS would be particularly interesting to compare to the conceptualizations of SHE “experts”. It would also be useful to replicate the study using the SU presidents of Canadian colleges, both public and private, in order to investigate whether or not they have similar understandings of the terms and particularly what role colleges are expected to play. By including members of both public and private institutions, perhaps different perspectives might emerge related to neo-liberalism, sustainability and universities. Finally, it would be very valuable to see a more thorough investigation into Francophone students’ conceptualizations.

6.6.4 International comparisons of conceptualizations

Finally, undertaking this research in other countries could provide a greater understanding of international student conceptualizations. This information would be useful for global discussions of SHE between students and other university stakeholders for determining if there are particular aspects that have universal support or are ignored in certain jurisdictions. The information might also provide useful insight to Canadian university administrations as they continue to increase their international recruitment campaigns.

6.7 Concluding Comments

Sustainability is a complicated concept that has emerged as a way to try to balance the needs of people, both now and in the future, within the environmental capacity of the Earth. This concept has evolved over the past 25+ years from focusing solely on the environmental problems or meeting human needs in more environmentally-

friendly ways to recognizing a more holistic interaction between society, the economy and the environment, including health and cultural impacts (Elkington, 1997; World Commission on Environment and Development [WCED], 1987). In addition, it now recognizes the importance of the environment within that holistic view (Sustainable Aotearoa New Zealand Incorporated [SaNZ], 2009). Even so, in part because of this evolution and continued complications, it is important to determine how best to communicate about sustainability between various stakeholders.

While the difficulties of having multiple conceptualizations and definitions of sustainability and sustainable universities have often been noted, the creation of a single understanding across all of higher education or society appears to be impractical and unlikely due to the conceptual variation across even a single similar stakeholder group. Although these SU presidents appeared to demonstrate a growing recognition of the holistic view of sustainability compared to students in previous literature, much work remains to be done in terms of creating a stronger list of shared key sustainability concepts. While this lack of shared conceptualizations can be frustrating and difficult when trying to engage and communicate between stakeholders, particularly with different backgrounds, it also provides room for groups to discuss and build localized conceptualizations and definitions using existing key concepts from literature and gain the ever-important stakeholder buy-in. This also ensures that campuses can address institution-specific barriers and goals, increasing the likelihood of success (Wright, 2002). Such local discussions were also noted as important by McNeil (2013) and Sylvestre (2013) for finding a common direction for campus sustainability, although the latter suggested a plurality of conceptualizations be allowed within that to address conceptual

variance. In other words, it is more important to find common ground on which to move campus sustainability initiatives forward instead of becoming stuck debating semantics.

The greater consensus on key concepts associated with sustainable universities is positive sign. These SU presidents most strongly supported academic efforts, but more frequently discussed aspects of campus sustainability that affected operations and environmental impact. This may be due to the opportunity to apply sustainability to a more concrete situation, allowing stakeholders to better visualize ways in which their institutional knowledge can influence improvements. It may also be due to greater exposure or familiarity to sustainability projects on campus. The sustainability of university finances was also of concern, which is unsurprising given the increasingly difficult financial situations being faced by universities across the country (CAUT, 2012).

The research demonstrated that SU presidents are aware of many challenges facing the university sector both in general and regarding SHE efforts. While many existing and future barriers were articulated, students were far from at a loss with ideas to facilitate campus sustainability. In addition, these SU presidents' perspective of students as being best placed to drive campus sustainability is a heartening example of youth recognizing their own agency. Through localized discussions with community stakeholders regarding SHE and related specific campus barriers and motivators, in combination with the energy and interest from students, universities can continue to move towards a more sustainable future.

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Appendix 1: Interview questions for SU Presidents

1. What are the key issues facing this university over the next 10 years?
2. When you hear the term sustainable development, what does this mean to you?

Please examine this checklist of concepts and check off which items that you feel are essential elements of sustainable development.
3. What role, if any, do you feel universities in general should play in achieving sustainability?
4. When you hear the term “sustainable university” what does this mean to you?

Please examine this checklist of concepts and check off which items that you feel are essential elements of a sustainable university.
5. What, if any, barriers do you see preventing your university from engaging in sustainability initiatives?
6. Do you foresee different barriers and challenges in the future?
7. What factors do you think would make becoming a leader in sustainability the top priority for your university?
8. Do you believe that the recent trend of universities viewing students as "customers" influences sustainability on your campus? If so, in what way?

Appendix 2: Checklist of Sustainable Development Concepts to be used in study

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 CO₂ levels with an increase in the number of trees planted
- Maintaining and enhancing cultural diversity
- Political diversity
- Satisfy vital human needs
- Other: _____
- Other: _____

Appendix 3: Checklist of Sustainable University Concepts to be used in study

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 centres 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 4: Recruitment E-mail

Hello,

My name is Heather Elliott and I am a Master of Environmental Studies candidate at Dalhousie University in Halifax, Nova Scotia. I would like to invite you to be part of a cross-Canada study funded by the Social Sciences and Humanities Research Council of Canada (SSHRC) that focuses on students understandings of sustainable development and the role Canadian universities can plan in achieving a sustainable future. It is part of a larger SSHRC-funded study directed by my supervisor, Dr. Tarah Wright. If you accept my invitation, you will be part of a cohort of student union presidents from across the country that will be participating.

My hope is to interview you in person sometime between September and December 2010, but Skype videoconferencing may be used if distance and budget become a limiting factor. The interview should take less than one hour to complete and will focus on questions about your understanding of sustainable development and sustainable universities. Please note that this is not a test of your knowledge or a measure of how “green” your university is. No preparation for the interview is required. The interviews will be recorded and transcribed, and you will have a chance to review your transcript and make modifications if you wish. All information collected in this study will be completely confidential. In any reports or publications resulting from this study, statistics will be presented in aggregate form and quotes will be unattributed. I will send a copy of the final report to you, so that you and your student union can see what student union presidents across Canada think.

Participating in this study may benefit your university by increasing your comfort level and interest in discussing sustainability and allowing you time to think about barriers that your university may be faced with in terms of becoming sustainable. This may in turn help facilitate increased dialogue at your university about sustainability.

If you have any questions or concerns about this study, you may contact me via email, or my supervisor, Dr. Tarah Wright (tarah.wright@dal.ca; 902.494.3683).

I look forward to hearing from you at your earliest convenience.

Thank you,
~Heather Elliott
(heather.elliott@dal.ca; 902.421.2012)

Appendix 5: Consent Form

Consent Form

Title of the Research: Canadian students' union presidents' conceptualizations of sustainable universities

We invite you to take part in a research study being conducted by Heather Elliott who is a graduate student at Dalhousie University, as part of her Master of Environmental Studies. It is part of a larger SSHRC-funded study directed by my supervisor, Dr. Tarah Wright. Your participation in this study is voluntary and you may withdraw from the study at any time. The study is described below. This description tells you about the risks, inconvenience, or discomfort which you might experience. Participating in the study might not benefit you, but we might learn things that will benefit others. You should discuss any questions you have about this study with Heather Elliott."

Purpose of the Study

This research will investigate how students' union presidents conceptualize sustainable development, the role of universities in creating a sustainable future and potential barriers that may make them unable to fulfil this role. The researcher hopes to be able to determine a common students' union president conceptualization of these three ideas to encourage a national dialogue between key stakeholders at universities and create a baseline of student conceptualization for Canada.

Study Design

You will be asked to participate in a face-to-face interview with the researcher and answer ten interview questions. During the interview you will also be asked to complete two checklists.

Who can Participate in the Study

You may participate in this study if you are a students' union president or designate of universities that are members of the Association of Universities and Colleges of Canada.

Who will be Conducting the Research

The interviewer that you will be speaking with is the principal investigator, Heather Elliott.

What you will be asked to do

You will be asked to participate in a single face-to-face interview with the principal investigator. If possible this will occur in-person in a private meeting room of your choosing on your campus. Due to external factors, you may be asked to participate in the interview through videoconferencing via Skype. In this case, you are asked to find a quiet, private room where you will have access to a computer, high-speed Internet and a webcam.

You will be asked to answer ten questions and fill out two quick checklists. It is estimated that this should require between one hour and one hour and twenty minutes of your time. You will also be invited to review your responses after the investigator has typed them up and submit any clarifications or changes within one week. It is expected that this will take approximately thirty minutes. The researcher will e-mail you a copy of the final report so that you are aware the results.

Possible Risks and Discomforts

There are no known risks associated with participating in this research. It is possible that you may experience some discomfort participating in the interview, but we hope that this will be minimal as all answers are confidential and there is no need to prepare ahead of time for this interview.

Possible Benefits

By exploring different reasons as to why your university may not have yet managed to implement sustainability initiatives, you may gain insight into the barriers that are blocking this from occurring. Also, by reading the final results of this study, you may achieve a common understanding of the challenges and barriers to achieving sustainability and develop possible solutions. As a students' union, you may choose to use results from the final report to open a dialogue with other university stakeholders about sustainable universities or one with other student leaders.

Compensation/Reimbursement

There will be no compensation or reimbursement for participation in this study.

Confidentiality and Anonymity

While it is impossible for you or your answers to be anonymous to the principal investigator due to the face-to-face interview, you will not be identified in any way in any reports resulting from this research. We will ensure your confidentiality using aggregate statistics and coding transcripts for themes. All quotes will be unattributed in any reports. All data will be kept on a password protect computer and external hard drive and destroyed ten years after publication. Since this data will be used to create a Canadian baseline, it may be useful to share raw data with colleagues working on similar projects in other countries. If this is done, all identifiers will be removed so that your confidentiality is protected. The same protocol will be followed should a second opinion be required for language reasons.

Questions

Should you have any questions about this study, you may contact Heather Elliott (heather.elliott@dal.ca; 902.421.2012) or her supervisor, Dr. Tarah Wright (Department of Environmental Studies at Dalhousie University; tarah.wright@dal.ca; 902.494.3683). You will be advised of any new information that might affect your decision to participate in this research.

Problems or Concerns

*If you have any difficulties with, or wish to voice concern about, any aspect of your participation in this study, you may contact Patricia Lindley, Director of Dalhousie University's Office of Human Research Ethics Administration, for assistance at (902) 494-1462, patricia.lindley@dal.ca
If you live outside of the Halifax Regional Metro area, you may call collect.*

Consent Form Signature Page

***Title of the Research:* Canadian students' union presidents' conceptualizations of sustainable universities**

I have read the explanation about this study. I have been given the opportunity to discuss it and my questions have been answered to my satisfaction. I hereby consent to take part in this study and have the interview audio recorded. However I realize that my participation is voluntary and that I am free to withdraw from the study at any time.

Participant Signature

Date

I give my consent for the researcher to use direct quotations from me in their research.

Participant Signature

Date

I give my consent for future use of data in research for sustainability in higher education.

Participant Signature

Date

I give consent for the transportation of data outside of Nova Scotia and the sharing of raw data with all identification removed with international researchers and possible translation help.

Participant Signature

Date

Investigator Signature

Date

Appendix 6: Debriefing Form

The purpose of this study was to investigate student conceptualizations of sustainable development, sustainable universities, their role in the future and barriers to implementing sustainable initiatives at Canadian universities. This information will be used to create a baseline of conceptualizations that may be compared against future research in Canada and against concurrent baselines being created in other countries. This information will also be used to help sustainability in higher education researchers and university stakeholders understand students' perspectives and begin a more inclusive dialogue on the topic of sustainable universities. This research is being conducted as part of a larger research project headed by Dr. Tarah Wright investigating this subject matter with key university stakeholders, including students, university administration, faculty and facilities management.

The interview questions were to help determine your knowledge and understanding of the previously mentioned topics and to allow you to elaborate upon your point of view. The first checklist will help determine essential aspects of sustainable development according to students and the second checklist will help determine the essential aspects of sustainable universities according to students as well.

Currently, while scholars involved in sustainability in higher education and related research have a reasonably common conceptual idea of the attributes of sustainable development and a general definition of a “sustainable university” (Wright, 2007), there have been few studies examining if these ideas are shared by key stakeholders, including students. Sustainable development was defined by the World Commission on Environment and Development as “meeting the needs of the present generation without compromising the ability of future generations to meet their needs” (WCED, 1987, p.4). This concept has been affirmed as a guiding principle for planetary progress by two United Nations summits and is generally accepted to refer to the balance of the ‘triple bottom line’ – ecological integrity,

social equity and economic prosperity (Dale & Hill, 2001; Dale & Onyx, 2005; Robinson *et al.*, 1996). Due to the importance of learning how to apply this concept, the United Nations declared 2005-2014 the United Nations Decade of Education for Sustainable Development (United Nations, 2002). Universities have been recognized as having a moral responsibility to be leaders in the education for sustainable development (Orr, 1992) due to their influence. Obviously, it is imperative that there be a common understanding of sustainable development from which to move forward if universities are to lead citizens into a sustainable future (Wals & Jickling, 2002).

Your participation in this study is very much appreciated. After all interviews have been conducted and transcribed, I will e-mail a copy of your interview to your preferred e-mail address for you. You will be able to make clarifications or additions if necessary before the information is analyzed.

The analyzed research will be disseminated through journal publications, conference presentations, and reports to the AUCC and SSHRC. Reports will also be given to participating student unions and relevant national and provincial student organizations including the Canadian Federation of Students (CFS), the Canadian Alliance of Student Association, the New Brunswick Student Alliance (NBSA), the Association of Nova Scotia Student Alliances (ANSSA), the Ontario Undergraduate Student Alliance (OUSA), and the Council of Alberta University Students (CAUS).

If you have any questions about this study, or would like more information about the results, please contact Heather Elliott (e-mail: heather.elliott@dal.ca; 902.421-2012) or Dr. Tarah Wright (e-mail: tarah.wright@dal.ca; 902.494.3683).

Finally, more information related to this study is available in the articles listed below. Thank you very much for your time.

Dale, A. and Hill, S.B. (2001). *At the Edge: Sustainable Development in the 21st Century*. Vancouver, B.C.: UBC Press.

Dale, A. and Onyx, J. (Eds.)(2005). *A Dynamic Balance: Social Capital and Sustainable Community Development*. Vancouver, B.C.: UBC Press.

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Appendix 7: Confidentiality Agreement for Transcribers

***Title of the Research:* Canadian students' union presidents' conceptualizations of sustainable universities**

Purpose of the Study

This research will investigate how students' union presidents conceptualize sustainable development, the role of universities in creating a sustainable future and potential barriers that may make them unable to fulfill this role. The researcher hopes to be able to determine a common students' union president conceptualization of these three ideas to encourage a national dialogue between key stakeholders at universities and create a baseline of student conceptualization for Canada.

I understand that any information that I hear or read related to translation help for this study is part of a confidential data set that cannot be discussed with anyone other than the principal investigator, Heather Elliott, or her supervisor, Dr. Tarah Wright. I agree to uphold the confidentiality of all participants and to transcribe to the best of my ability and according to directions of the PI.

I also understand that at the completion of the study all materials (files, documents) associated with the work of translation will be returned to Heather Elliott and that I will not retain copies of these in any format.

Translator's Signature

Date

Investigator's Signature

Date

Appendix 8: Confidentiality Agreement for Additional Services

Title of the Research: Canadian students' union presidents' conceptualizations of sustainable universities

Purpose of the Study

This research will investigate how students' union presidents conceptualize sustainable development, the role of universities in creating a sustainable future and potential barriers that may make them unable to fulfill this role. The researcher hopes to be able to determine a common students' union president conceptualization of these three ideas to encourage a national dialogue between key stakeholders at universities and create a baseline of student conceptualization for Canada.

I understand that any information that I hear or read related to this study is part of a confidential data set that cannot be discussed with anyone other than the principal investigator, Heather Elliott, or her supervisor, Dr. Tarah Wright. I agree to uphold the confidentiality of all participants and to utilize my required skills to the best of my ability and according to directions of the PI.

I also understand that at the completion of the study all materials (files, documents) associated with the research will be returned to Heather Elliott and that I will not retain copies of these in any format.

Aide's Signature

Date

Investigator's Signature

Date