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REACHING BEYOND COMPLIANCE: OBSTACLES TO INTEGRATING
SUSTAINABILITY INTO DECISION-MAKING PROCESSES IN AN
INSTITUTION OF HIGHER EDUCATION

BY

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BS, University of Michigan, 1991.
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DISSERTATION

Submitted to the University of New Hampshire
In Partial Fulfillment of the Requirements for the Degree of

Doctor of Philosophy

In

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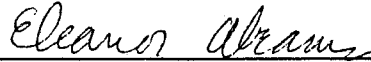
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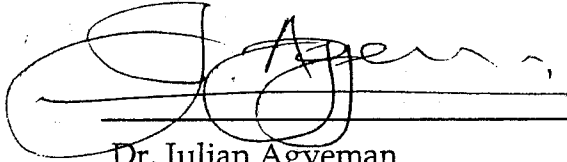
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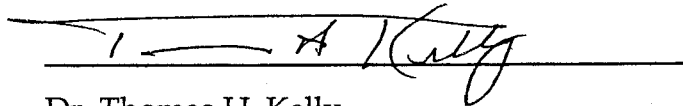
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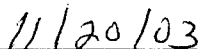
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DEDICATION

... to those committed to contributing to the development of a sustainable and peaceful society.

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ABSTRACT

REACHING BEYOND COMPLIANCE: OBSTACLES TO INTEGRATING SUSTAINABILITY INTO DECISION-MAKING PROCESSES IN AN INSTITUTION OF HIGHER EDUCATION

by

Julie Newman

University of New Hampshire, May, 2004

There are emerging opportunities for institutions of higher education to respond to current environmental and public health crises. By setting institutional examples and modeling for others how to prioritize sustainability as a grounding framework for decision-making, institutions of higher education have an opportunity to facilitate society's transition to a more sustainable future. Sustainability principles stem from an international consensus that the pursuit of economic viability as an end in itself, conditioned by a neo-classical model of economics, does not maintain or enhance ecological health and human well-being. There are a number of universities worldwide who are making an effort to evaluate current policies and embrace sustainability however, there are no universities that could be characterized as 'sustainable'.

This study examines two interrelated points of debate with respect to the obstacles to integrating sustainability into the decision-making process in an institution of higher education. These are: (a) What parameters characterize the current decision-making process? What within the process obstructs the integration of sustainability principles? (b) What influences a decision-makers

construction of a rationale for embracing or rejecting sustainability in everyday decisions? As entry points into the university decision-making process, this study focuses on operational policy with a comparative analysis of food services, purchasing and waste management. The data was collected and analyzed with the application of a grounded theory methodology.

The study illustrates how the conventional decision-making process integrates three dominant parameters, which shape decision outcomes: fiscal constraint, academic and operational divisions, and institutional values. These three factors are further influenced by the system of communication within the university. The study extends the analysis through a constructivist framework to examine the factors that influence an individual's understanding of the concept of sustainability and how that understanding is reflected in one's rationale as a decision-maker. The results of this study point to areas of future research that include the development of systems of knowledge-distribution for sustainability and the pursuit of institutional capacity to meet the needs of a sustainable society.

CHAPTER I

HIGHER EDUCATION AT THE CROSSROADS OF A GLOBAL CRISIS: A RATIONALE FOR SUSTAINABILITY

There is only one alternative to sustainability - unsustainability...but sustainability involves a time dimension while unsustainability now rarely implies an immediate existential threat. Existence is threatened only in the distant future, perhaps too far away to be properly recognized (p.1).

- A report of the Ballaton Group, (1999), Indicators for Sustainable Development: Theory, Method, and Applications

The purpose of this research is to examine the obstacles to integrating principles of sustainability into the decision-making procedure within an institution of higher education by examining the decision-making process of three critical operational systems within the university: food services, purchasing and the waste management system. I employ a grounded theory research methodology to establish a theoretical framework by which to explain why principles of sustainability are either embraced or rejected in the decision-making procedure. This study builds upon a theoretical framework that grows out of the combination of organizational, institutional, decision-making and constructivist theory, along with the literature on sustainability.

Sustainability principles stem from an international consensus that the pursuit of economic viability as an end in itself, expressed by a neo-classical model of economics, does not maintain or enhance ecological health and human

well-being. Although multiple interpretations of the definition of sustainability can be found within the literature, the fundamental principles expressed here characterize the definition that I apply in the research. In this chapter I introduce the underlying issues of sustainability to provide a justification for this study.

At the crossroads of a global crisis

The Earth's ecosystems cannot sustain either current levels or an increase in the levels of economic activity and material consumption as currently experienced in the developed nations (Brown, Flavin, & French, 2001; Chukwuma, 1996). In four decades, the population of the world has more than doubled while the economic output has increased five-fold. This has led to accelerated resource consumption, rapid economic growth and the rising material standards of industrialized nations (Wackernagel, 1996).

William Rees (2003), author of the Ecological Footprint writes:

There is little question that the world is on an unsustainable development path. There is even a consensus among scientists in various fields that excess energy and material consumption is at the heart of the problem. Critical resource systems are being overtaxed and global waste sinks filled to overflowing (p.89).

Environmental disruptions have manifested themselves in the forms of global climate change, loss of biodiversity, water contamination, desertification, loss of farmland, and depleted fisheries (Brown et al., 2001). These failures exemplify gradual breakdowns in the earth's ecosystems over the long term that have gone unnoticed until ecological thresholds have been reached that have led to substantial disruptions in the earth's ecosystem (Moomaw & Kildow, 1991). These adverse effects are indicative of many decisions made in isolation by individuals or groups of individuals embedded within complex organizations.

Consequently no single individual could potentially have perceived the potential risks of the sum of these decisions (Moomaw & Kildow, 1991). Nonetheless, the challenge of making decisions in the face of uncertainty is only partly to blame for the environmental and social dilemmas that we face today (Kriebel & Tickner, 2001). Despite access to the continuous research that has led to detailed knowledge of the complex ecological interdependencies and indicators of environmental degradation, society continues to act in ways that have a devastating impact on the ecological community and thus human health (Chechile, 1991).

Setting a global agenda

In Rio de Janeiro in 1992, the United Nations Conference on Environment and Development (UNCED), more commonly referred to as the Earth Summit, convened over one-hundred heads of state as well as representatives from non-governmental agencies and concerned citizens throughout the world. Participants deliberated how the international community ought to respond to the growing challenge of environmental degradation and social inequities. With the exception of the United States, a majority of the leaders signed the Framework Convention on Climate Change and the Convention on Biological Diversity, and endorsed the Rio Declaration and the Forest Principles. The culminating document is referred to as Agenda 21, a 300-page plan for achieving sustainable development in the 21st century.

The twenty-seven principles and thirty-six chapters of Agenda 21 articulate action items that can be used by decision-making bodies such as institutional administrators, community leaders, or heads of state. Referred to as

a blueprint for a plan of action for the twenty-first century, Agenda 21 has been adopted by governments, United Nations organizations, development agencies, non-governmental organizations, and independent-sector groups (UNDPI, 1992). While the agreement lacks the authority of international law, the text carries with it a strong sense of moral obligation on the part of the governing bodies to take action within the framework of sustainable development (Dernbach, 1998). These documents were developed to provide a vision and an outline of what could be and ought to be done to move toward a more sustainable global society (Cicin-Sain, 1996).

The Agenda 21 chapters most relevant to my research are *Chapter 8: Integrating Environment and Development in Decision-Making*, and *Chapter 40: Information for Decision-Making*. These chapters provide the groundwork from which to contextualize my study from the local level within an international agenda. The authors of Agenda 21 state that decision-makers in all sectors of society ranging from higher education, business and government to communities and individuals are challenged by the process of integrating sustainability principles into decision-making frameworks due to the difficulty of balancing economic priorities with ecosystem-health and human-health concerns.

In Chapter 8 section 8.2, the basis for action states:

Prevailing systems for decision-making in many countries tend to separate economic, social and environmental factors at the policy, planning and management levels. This influences the actions of all groups in society, including Governments, industry, individuals, and has important implications for the efficiency and sustainability of development. An adjustment or even a fundamental reshaping of decision-making, in the light of country-specific conditions, may be necessary if environment and development is to be put at the center of economic and political decision-making, in effect achieving a full integration of these factors. In recent years, some Governments have also begun to make significant changes in the institutional structures of

government in order to enable more systematic consideration of the environment when decisions are made on economic, social, fiscal, energy, agricultural, transportation, trade and other policies, as well as the implications of policies in these areas for the environment. New forms of dialogue are also being developed for achieving better integration among national and local government, industry, science, environmental groups and the public in the process of developing effective approaches to environment and development (UNDPI, 1992).

In summary, this document recognizes that decision-making requires: a) an adjustment or reshaping of fundamental decision-making processes, b) significant changes in the institutional structures of government to enable more systemic consideration of the environment, and c) new forms of dialogue. Unlike Chapter 8, which speaks to decision-making frameworks, Chapter 40 references the type of and accessibility to the information needed for decision-making that integrates rather than separates economic, social and environmental factors.

In Chapter 40 section 40.2, the basis for action states:

While considerable data already exist, as the various sector chapters of Agenda 21 indicate, more and different types of data need to be collected, at the local, provincial, national and international levels, indicating the status and trends of the planet's ecosystem, natural resource, pollution and socio-economic variables. The gap in the availability, quality, coherence, standardization and accessibility of data between the developed and the developing world has been increasing, seriously impairing the capacities of countries to make informed decision concerning the environment and development (UNDPI, 1992).

Chapter 40 calls for more and different types of data that can be applied by decision-makers at multiple levels, from local to regional to international. This chapter also emphasizes the difference between the data available to decision-makers in developed nations versus the developing nations. Despite this gap, those in developed nations are not necessarily accessing and thus applying the data towards a sustainable end.

In 1997 the United Nations General Assembly concluded a comprehensive review of the progress made since the Earth Summit and stated that, "overall trends with respect to sustainable development are worse today than they were in 1992" (Dernbach, 1998, p. 5). Because of the attention given to the Earth Summit, international leaders in support of Agenda 21 anticipated that there would be greater awareness about sustainable development which would lead to prompt implementation of the declarations at the local and national level. However, there were few laws or policies that had been proposed and implemented to shift the overall trajectory of the unsustainable patterns of development and consumption (Trzyna, 1995). A special session of the General Assembly adopted a comprehensive document entitled "Program for the Further Implementation of Agenda 21" developed by the Commission on Sustainable Development. The agreement, in part, reflected the understanding that the pursuit of economic viability with disregard for ecological health and human well-being will have potentially catastrophic consequences.

Calling upon Higher Education to respond to the global crisis

Higher education has not only the opportunity but also the responsibility of preparing today's work force. In 2001, fifteen million students were enrolled in both two and four year degree programs. In that same year, 1.2 million bachelor's degrees were awarded by higher education institutions throughout the country contributing to the 26% of the population of citizens who have graduated with a four-year degree or more¹. The intention and mission of higher education is to educate students in a manner that continues to set the agenda for future generations. While the opportunities exist, it is not certain that the current

organizational structures are predisposed to responding to the needs of sustainable development.

The recognition and involvement of higher education institutions in contributing to sustainable development is relatively recent. The university system is seen as being "uniquely equipped to lead the way by their special mission in teaching and training the leaders of tomorrow, their experience in trans-disciplinary research and by their fundamental nature as engines of knowledge."ⁱⁱⁱ In 1990, twenty-two university presidents, rectors and vice chancellors of universities convened and drafted the Talloires Declaration (Appendix A). The Talloires Declaration states:

We, the presidents, rectors, and vice chancellors of universities from all regions of the world, are deeply concerned about the unprecedented scale and speed of environmental pollution and degradation, and the depletion of natural resources (Talloires Declaration, 1990).

The document calls upon universities to take a leadership role in confronting these global issues through education, policy formation, institutional transformation, research, and information exchange. The Declaration presents ten-principles for university presidents and administrators to adhere to and urges them to commit their university to taking steps to contributing to a sustainable society (Talloires Declaration, 1990). Approximately 300 universities around the world have signed the Talloires Declaration. Northern University, an alias that I assigned to the institution which is at the heart of this study, is a signatory to the Talloires Declaration.

The message of the Talloires Declaration was reinforced by the 1994 Copernicus Charter (Appendix B). The Copernicus Charter declares:

Universities and equivalent institutions of higher education train the coming generations of citizens and have expertise in all field of

research, both in technology as well as in the natural, human, and social sciences. It is consequently their duty to propagate environmental literacy and to promote the practice of environmental ethics in society; in accordance with the principles set out in the magna chart of European Universities and subsequent university declarations (ie. Talloires Declaration), and along the lines of the United Nations Committee on Environment and Development, for environment and development education (1994).

A decade after the Earth Summit in Rio de Janeiro, the World Summit on Sustainable Development (WSSD) gathered in Johannesburg, South Africa. A significant outcome of the WSSD was a recommendation to the United Nations General Assembly that a Decade of Education for Sustainable Development (DESD) be adopted beginning in 2005 (Calder & Clugston, 2003). In consultation with the United Nations and other governmental and non-governmental agencies, the United Nations Educational, Scientific and Cultural Organization (UNESCO) was invited to be the lead agency to promote the designated decade. UNESCO proposes that the goal of Education for Sustainable Development is:

A process for learning how to make decisions that consider the long-term future of the economy, ecology and equity for all communities. Building the capacity for such futures oriented thinking is a key task... This requires us to reorient education systems, policies and practices in order to empower everyone, young and old, to make decisions and act in culturally appropriate and locally relevant ways to redress the problems that threaten our common future.ⁱⁱⁱ

The goals of the DESD are guided by the Millennium Development goals were ratified and adopted by the United Nations in September of 2000. The Millennium Development Goals established targets for international actions with the intent of actualizing the visions of: overcoming poverty; expanding educational provision and redressing gender inequalities in education; improving child, maternal and sexual health; and developing national strategies for sustainable development.

Concurrently, UNESCO announced a type 2^{iv} partnership entitled the Global Higher Education for Sustainability Partnership (GHESP). This involves the Association of University Leaders for a Sustainable Future (ULSF) who coordinate the signatories of the Talloires Declaration, COPERNICUS- Campus, the International Association of Universities (IAU), and United Nations Environment Science and Cultural Organization (UNESCO). The Global Higher Education for Sustainability Partnership seeks to:

... develop and share effective strategies, models, and best practices for promoting higher education for sustainability and to analyze experience thus far in order to make recommendations in consultation with key northern and southern stakeholders (Calder, 2003, p.35)

There are emerging opportunities for institutions of higher education to facilitate the transition to a more sustainable future and set new institutional examples and to model for others how to prioritize sustainability principles as a grounding framework for decision-making (McIntosh, Cacciola, Clermont, & Keniry, 2001; Orr, 1992; Strauss, 1996). To provide further support for the argument for the role of education and educational institutions in achieving sustainability, I present a statement released by UNESCO that concerns the role of education in society:

The goal of education is to make people wiser, more knowledgeable, better informed, ethical, responsible, critical and capable of continuing to learn. Were all people to possess such abilities and qualities, the world's problems would not be automatically solved, but the means and will to address them would be at hand. Education also serves society by providing critical reflection on the world, especially its failings and injustices, and by promoting greater consciousness and awareness, exploring new visions and concepts, and inventing new techniques and tools. Education is also the means for disseminating knowledge and developing skills, for bringing about desired changes in behaviors, values and lifestyles, and for promoting public support for the continuing and fundamental changes that will be required if humanity is to alter its course, leaving the familiar path that is leading towards growing difficulties and possible catastrophe, and starting the

uphill climb towards sustainability. Education, in short, is humanity's best hope and most effective means in the quest to achieve sustainable development.

One way in which institutions of higher education contribute to the well-being of society for today and into the future, is through the creation and dissemination of knowledge and education of its citizenry (Wilcox & Ebbs, 1992). Two years shy of the designated Decade of Education for Sustainable Development, there are a number of universities worldwide who are making an effort to evaluate current policies and embrace sustainability principles. However, there are currently no universities that could be characterized as being 'sustainable'.

Today's graduates are facing unprecedented circumstances in the world. They are going to be challenged to: stabilize world population; stabilize and then reduce the emission of greenhouse gases that induce climate change; protect and value biological diversity; stop the destruction of forests worldwide; conserve energy; and stop soil erosion. They will also need to overcome the economic disparities that have deepened and the injustices that prevail. In response, the graduates of today are going to have to learn how to build an economy that deals with and eliminates waste while developing renewable technology (Orr, 1992). One way in which college graduates will become exposed to these global complexities is if their university is prepared and willing to make difficult decisions.

Barriers to sustainability in higher education: A synopsis of previous studies

The literature on sustainability in higher education tends to emphasize that economic constraints is the primary reason that sustainability principles are

not more frequently integrated into the decision-making process within universities (Filho, 2000). Previous research has confirmed that barriers to integrating sustainability into higher education institutions do exist, however such studies have not fully informed us about what is happening either at the institutional level or within the decision-making process (Creighton, 2000; Dahle & Neumayer, 2001; Filho, 2000). In this section, I briefly review three publications, which are prominently referenced in the sustainability and higher education literature. The three studies I cite are those of Filho (2000), Creighton (2000) and Dahle and Neumayer (2001).

Filho (2000), a scholar of sustainability and higher education, published a paper entitled "Dealing with misconceptions of sustainability". His conclusions are grounded in a study in which forty participants from institutions of higher education in ten countries were interviewed. Two questions were posed similar to the ones that I asked in my interviews:

- 1) What is the interviewees' personal view of the concept of sustainability? (Filho, 2000)
- 2) What do the interviewees perceive to be the major barriers in pursuing sustainability in the context of their institutions? (Filho, 2000)

Filho's response to the first question is depicted in Table 1. He concluded that knowledge, background, experience, perception, values and context influence an individual's understanding of sustainability. The central distinction between my study and Filho's study is that he interprets the perceptions of sustainability as misconceptions whereas I attempt to determine how participants construct an understanding of sustainability. More precisely, I focus upon the influence the organizational structure of the university and the social structure in which the decision-makers are embedded has on their understanding of sustainability.

Knowledge	Information on the meaning of sustainability and its implications
Background	The nature of his/her training often influences an individual's degree of receptivity in relation to sustainability
Experience	Previous experience with environmental and social affairs facilitates understanding of the role of sustainability
Perception	The integrated view of environmental, political and economic elements enables a broader perception of sustainability
Values	Differing from the previous ones due to their high degree of complexity, an individual's values often determine whether his/her attitude are favorable or otherwise
Context	Sustainability is related to ecological components and entails economics, politics and social matters. However, links with the latter are often ignored by universities.

Table 1: Factors which influence attitudes towards sustainability (Filho, 2000, p.15)

In response to the second question about barriers to sustainability, Filho (2000) explains:

When asked about the items that might pose an obstacle to sustainability, the sample provided a range of opinions, which fall into five main fronts: 1 - "it is too abstract" (12 respondents), 2 - "it is too broad" (19), 3 - "no personnel to deal with it" (4), 4 - "it demands substantial resources which we do not have or can justify" (3), and 5 - "it lacks significant scientific basis" (p.2)

Filho (2000) characterizes the participant responses as misconceptions of sustainability which range from accusations that the application of sustainability is too abstract and too broad, to a claim that [it] lacks scientific basis, and costs too much to implement (Filho, 2000).

Creighton, in Greening the Ivory Tower, takes an in depth look at how a university can adopt more environmentally friendly management practices. Grounded in her experience at Tufts University, she provides a blue-print for "greening" higher education. She outlines examples ranging from Buildings and Grounds to Purchasing and Dining Services. Creighton identified similar

barriers to integrating sustainability principles into higher education as Filho.

She explains:

The green university of the future may use resources efficiently, create little or no waste, and take full responsibility for any waste that it does generate...This university will invest its endowment to purchase shares in companies that specialize in efficient technologies rather than polluters that destroy precious lands and waters to provide stockholders ample returns...The green university might renovate an existing building rather than build a new one, or reduce mowing and increase wild plant species in target areas...Further, this green university will include learning and appreciation for the physical environment and our connection to it in courses, laboratories, and university culture and throughout the institution's physical plant (Creighton, 2000, p.9).

Creighton (2000) describes success stories throughout the discussion, and acknowledges that not all institutions readily accept such changes. The barriers that she emphasizes are: a skeptical administration, difficulty turning a broad statement into action, an inability to prioritize a list of actions, lack of interest and commitment on the part of the staff, an apathetic student body, lack of momentum from the community, a need to educate the university community and lack of funding (Creighton, 2000). The primary barrier that Creighton identifies is "a fundamental lack of interest and commitment towards green initiatives among administrators, staff, and students (Dahle & Neumayer, 2001)". Though Creighton's list provides ample insight into some of the challenges one would encounter while striving to integrate sustainability principles, these terms do not inherently reflect transformative qualities. More accurately, these terms do not bespeak the fact that a fundamental change in institutional structure is required to attain the goal of a sustainable institution.

Two economists, Dahle and Neumayer (2001) build upon the findings published by Creighton (2000) and Filho (2000). In their paper entitled

“Overcoming barriers to campus greening: A survey among higher educational institutions in London, UK, they delve more specifically into the barriers and how might they be overcome. Their research examined six universities in London to determine the impact of the “greening” effort within each institution. Specifically, they researched the solid waste and energy management systems (Dahle & Neumayer, 2001). The two central guiding questions were:

- Within the areas of energy and solid waste management, how far have the sampled institutions reached with respect to greening?
- What is considered to be the most important barriers to further greening, and how can such barriers be reduced or overcome?

The data was collected through semi-structured interviews of sixteen participants responsible for environmental and operational activities on a regular basis within their university. The results were sorted into four categories of obstacles: 1) lack of financial resources (16), 2) lack of environmental education (15), 3) a non-environmental attitude prevailing on campus (12), and 4) the lack of space for storing waste and constructing new, more energy efficient buildings. (5) (Dahle & Neumayer, 2001).

Overall, each of these studies suggests a variety of reasons as to why institutions of Higher Education may be reluctant to integrate sustainability principles into their decisions and actions. Though there are slightly different insights revealed in each study, overall the list of barriers is comparable.

Contribution to the literature: Higher education and institutional theory

I intend this study to connect the literature on organizational theory, decision-making and higher education to the literature on sustainability. I

anticipate that the results of this study which examines the decision-making framework of the subjects interviewed, will be useful to institutions of higher education striving to contribute to a sustainable society through operational practices, teaching and research.

By understanding how sustainability is both defined and accounted for within the decision-making procedure, the university system can more effectively integrate sustainability into institutional policy, if it so chooses. Moreover, this research will provide insight for the practitioner interested in working with university administration, faculty, staff and students in shifting the policies and practices of a university from ones guided by the common social paradigm to a different paradigm organized by the principles of sustainability. I expect for the results of my research to assist university administrators, deans, faculty, staff and students in assessing their current decision-making framework.

This research will not provide a list of simple solutions to overcome these obstacles. Instead I aim to provide insight into the institutional structures and raise questions about their compatibility with sustainability. Though I recognize that this is not an analysis of the entire university system, this study does offer some insight into the implications of institutional practice as measured against sustainability principles, and how an institution responds to the challenge of changing the ways in which it currently conducts business.

Overview of dissertation

This dissertation is the outcome of a grounded theory study and analysis in which I have carefully selected the explanations which best respond to and provide insight into the overarching question: What are the obstacles to

integrating sustainability principles into an institution of higher education? The dissertation is divided into seven chapters. In chapter one I introduce and provide a justification for the study.

Chapter two provides background information about the study site and contextual information about the participants. The information included in this section reflects the information referenced by the participants in their interviews. Relevant background information includes an explanation of the university strategic plan, the budget model referred to as Responsibility Centered Management, and the sustainability efforts on campus. This chapter also provides a concise summary of each of the focal areas, Dining Services, the Purchasing Office, and the Waste Management system.

Chapter three describes the research methodology that I employ to conduct the study and analyze my data. This chapter characterizes the research procedures and fundamental constructs that I apply to frame, collect and analyze my data as well as some of the specific challenges and questions that emerged throughout the process.

In Chapter four, I present a theoretical framework drawn from presumably disparate bodies of literature as I attempt to make an argument that extends the decision-making models currently presented in the literature to sustainability. I do this by building upon and combining literature about organizational, decision-making, and higher education theory along with the literature on sustainability.

Chapter's five and six are the data analysis chapters. Chapter five reveals the parameters within which decisions are made at Northern University within the Purchasing Office, Waste Management system, and Dining Services. In

Chapter five, I present the decision-making parameters in more detail with the support of transcribed quotes to justify the development of my findings and assertions. The three questions that I examine in this chapter are: (a) What parameters characterize the current decision-making process? (b) What within the process obstructs the integration of sustainability principles? (c) What influences a decision-makers construction of a rationale for embracing or rejecting sustainability in everyday decisions?

Chapter six builds upon the decision-making framework outlined in Chapter five and attempts to provide further evidence as to why sustainability principles are not currently integrated into the decision-making framework at Northern University. In the seventh chapter, I present the implications of the study. I conclude with a description of future research that might be guided by the results of this study.

In this dissertation I bring only highlights of the conversations that I had with decision-makers throughout the data collection phase of this research. I use the experiences that they shared to gain insight into the decision-making process of a university. This study also offers insight into the challenges faced by the decision-makers.

¹ Type 2 partnerships involve governments, non-governmental organizations, and businesses for the purpose of carrying out Agenda 21.

¹¹ U.S. Department of Education. Office of Educational Research and Improvement (2001).

¹¹¹ De Rebello, Daphne (2003). *"What is the role of higher education in the UN Decade of Education for Sustainable Development?"*. Paper presented at the International Conference on Education for a Sustainable Future: Shaping the Practical Role of Higher Education for Sustainable Development.

^{1V} UNESCO. (2003) Decade of Education for Sustainable Development proposal (p.4)

CHAPTER II

CONTEXT

The University will be distinguished for combining the living and learning environment of a small New England liberal arts college with the breadth, spirit of discovery, and civic commitment of a land grant research institution.

– Northern University vision statement

The purpose of Chapter two is to provide background information about the study site and useful contextual information about the participants. The information included in this section reflects the information referenced by the participants in their interviews. Relevant background information includes an explanation of the university strategic plan the budget model referred to as Responsibility Centered Management, and the sustainability efforts on campus. There is also a concise summary of each of the focal areas, Dining Services, the Purchasing Office, and Waste Management that provide the institutional context for the participants within this study.

The site for this study is a state university in the northeast, which I refer to as Northern University. For the sake of anonymity I have assigned an alias to the university study site as well as all programs and individuals that I reference. This university serves approximately 13,000 students per year including graduate and undergraduate. On average, 2,000 new undergraduate students per year enroll.

Northern University is a state institution in which world renowned scientists are exploring the depths of the sea, inventorying the landscape, collecting data on climate systems and air quality, delineating watersheds, experimenting with sustainable agriculture techniques, and conducting pollution prevention research. The published results of this on-going research have the potential to contribute to the knowledge base of understanding a sustainable system. With all the research that Northern University has to offer, it does not appear as if the knowledge generated within the university and relevant to sustainability is employed in the decision-making process of the university.

Nevertheless, Northern University is ahead of many colleges and universities in its commitment to becoming a sustainable institution. For this reason, the university became the optimum location for this type of research. Northern University received a multi-million dollar gift from an alumnus. The intent of the gift was to stimulate collaboration between faculty, staff and students to enhance the quality of life and the human relationship to the natural world. Concurrently there was a growing movement on the campus to engage the broader community in becoming a more sustainable university. In response to the swell of community interest in sustainability, and in a show of support from the administration, the President signed the Talloires Declaration^v. At this time, the university committed to hiring a director to oversee and bring focus to the sustainability movement on campus and the use of the endowed funds. This led to the development of the Sustainability Institute. The Sustainability Institute contends that the university ought to:

...ensure that every (university) student graduates with the skills to reason through the complex choices raised by sustainability therefore it is necessary to build a learning environment that challenges all

students to reason and act from a systemic perspective (SI report, 1998).

The mission of the Sustainability Institute is to “link the principles of sustainability to the educational mission through research, teaching, campus operations, and extension” (SI report, 1997, p.5). The four guiding principles of the Sustainability Institute are: 1) ensure inclusive participation, 2) impact core functions, 3) encourage well-grounded programs, and 4) maintain strategic networking and outreach. As outlined by the Sustainability Institute, Northern University’s policies and practices ought to be consistent with the relevant objectives of the international doctrines such as the Biodiversity^{vi} and Climate conventions^{vii}, Agenda 21^{viii}, as well as the ones that pertain specifically to higher education such as the Talloires and Ubuntu (Appendix C) Declarations.

Background information

Northern University’s budget model: Responsibility Centered Management.

In 1999, following a thorough financial analysis, research, and considerable debate, Northern University committed to adopting a Responsibility Centered Management (RCM) budget model. RCM is one example of a Resource Allocation Model (RAM). RAM’s are frequently adopted by institutions of higher education for the purpose of serving as a management tool that both guides and manages the strategic direction that institution takes (Jarzabkowski, 2002). Such models are known to provide an effective mechanism for compliance and control in organizations (Jarzabkowski, 2002). Jarzabkowski (2002) notes:

...with increasing competition for scarce resources in the public sector at large and universities in particular, university cultures are in

transition from the traditional collegium to more entrepreneurial and corporate forms of organization. Increasing accountability through external audit and quality control mechanisms places responsibility upon universities to show transparent and ostensibly rational resource allocation procedures (p.6).

At Northern University, the argument for adopting RCM was:

Our centralized, incremental approach to budgeting simply did not work well in situations requiring flexible, creative responses to financial problems...Instead, our budgeting system and financial management practices should encourage the generation of new resources and the efficient use of current resources, all the while allowing sound programmatic trade-offs consistent with an overarching University mission (RCM document, 1999).

The implementation plan at Northern University required a reorganization of the financial system. Eighteen Business Service Centers (BSC's) were established to decentralize the institution's accounting and business transactions. A decentralized budget model is defined as:

...departmental control over budgets, with responsibility for their own strategic direction, income-generation and financial viability. In such a model, departments are able to be locally responsive to strategic initiatives within their discipline and to generate, deploy and allocate their own income streams (Jarzabkowski, 2002 , p.7).

The creation of the eighteen BSC's enabled the implementation of the new budget process that decentralized not only financial transactions but also accountability and authority. One of the visions of RCM is to have an institution that is "greater than the sum of its parts but each of the parts would have considerable influence over its own destiny" (RCM document, 1999).

Jarzabkowski (2002) suggests the struggle for a university to determine which RAM is most suited for that organization is not unique to Northern University. She notes that both 'centralized' and 'decentralized' are concepts that are commonly applied when understanding with the relationship between what she refers to as the corporate center and the organizational divisions.

When applied to universities, these concepts tend to focus on the relationship between the senior administrators and the budget centers^{ix}. Jarzabkowski (2002) writes:

...more decentralization may be expected if the university is perceived as pluralistic and loosely coupled with a portfolio of autonomous departments. Greater centralization is associated with a view of the university as an overarching carapace of core competencies and identity, under which a set of synergistic departments are managed (p.6).

The intention of a decentralized budget system adopted by Northern University was for each budgetary unit to have a designated revenue stream. Within the RCM framework, the auxiliary units compete on a macro level for additional institutional resources based upon plans and performance. Consequently, each unit is responsible for managing its full costs within its allocated resources and thus benefits by action that increases its designated revenue stream or decreases its full costs. Under this scenario, an individual auxiliary department stands to gain based on its ability to fulfill institutional priorities.

Lastly, RCM impacts and draws a clear distinction between academic and non-academic units. Academic units have revenue streams closely tied to their level of activities such as research and/or the number of students enrolled in their classes. Mimicking that of a business production model, academic units are encouraged to generate revenue, and ensure the most cost-effective utilization of resources. On the other hand, revenue for non-academic units are primarily generated through fees, sales and services, indirect cost recovery (research units), and taxes to other campus units. Studies have demonstrated that a decentralized budget system has the potential to favor existing areas of strength since it is these

areas which tend to be self sustaining and attract resources (Jarzabkowski, 2002). Under this scenario, the departments that are doing well tend to attract resources enabling further growth, whereas the departments that are already less viable have inadequate resources for reinvestment, and thus have a tendency to perform at an unsatisfactory level and may be forced to close. A decentralized institutional model tends to build “centers of excellence based upon meritocratic performance” (Jarzabkowski, 2002, p. 8). From a more favorable perspective, decentralization can lead to an increase in departmental responsiveness, autonomy and responsibility since there is a relationship between departmental performance and resources (Jarzabkowski, 2002). A question that emerges from this discussion is whether a ‘centralized’ or a ‘decentralized’ system is preferable for integrating sustainability principles into an institution of higher education?

The administrators that I interviewed who were involved in the development and implementation of RCM spoke of the pros and cons of the budget model at Northern University. Their comments provide insight into the university and particularly the financial choices that need to be made at the administrative level. The President of Northern University, at the time of RCM’s implementation, articulated her experience with the development of the budget model in this statement:

The hard part of creating a budget model is deciding where to put the weights, so where do you favor certain things. And the Central Budget Committee now has oversight responsibility for the model. And our agreement was we wouldn’t make any changes in the model for three years. Otherwise we wouldn’t know how it was working.

As she discussed the RCM model, President Smith clarified why there are not built-in incentives for conserving resources, such as electricity or water use. She stated:

... the budget model is not as fine tuned to costs as it could have been but that was a conscious decision and it had to be a simple document. At least in it's first few years. If it were too complex people would throw up their hands and not be supportive.

Due to the simplistic nature of the RCM documents, departmental units cannot be rewarded for behavior that incorporates conservation measures into their daily activities since they are charged on a square foot basis rather than on use of resources. This is a strong value statement on the part of the President.

The RCM model sets the guidelines for how money is both expended and generated within the university. The purpose of this discussion is not to critique the RCM model; nonetheless a basic understanding of the budget model provides a context for how budgets are established for the three operational units.

Northern University's strategic plan and role in decision-making.

Throughout a two-year period between 2000 – 2002, the Academic Strategic Plan for Northern University was developed under the direction of the Provost and with input from various sectors of the academic and the broader community. Academic deans and chairs from each school and college, multiple campus governance groups, central academic administrators, and external constituents were all engaged in the process of shaping the strategic plan document.

The purpose of developing a strategic plan is to establish what and how the academic mission of the university is to be achieved through clarification of the identity, values and academic priorities for the Northern University campus over a five-year period. The document states:

If we are to excel in this challenging environment, we cannot be all things to all people. We must be deliberate in choosing those things that are consistent with who we are and what we value, and we must be effective in the use of limited resources to accomplish our goals (2002).

Two levels of action are presented in the plan to strengthen the University's mission and identity, vision, and core values. The first level outlines the strategic themes that embrace the multiple responsibilities in teaching, scholarship, and public service. The second level outlines the goals and actions that serve as the basis for annual and multi-year planning and decision-making. The document states:

The focus of this process has been on the academic commitments and processes of the University, although by necessity most non-academic components of the University have been and will continue to be engaged in achieving our primary purpose – the education of our students (2002).

The academic plan provides an explicit explanation as to how non-academic components engage in achieving the primary purpose of educating the students, indicating that there is no deliberate link between the two. This statement applies the phrase “by necessity” rather than “by design” suggesting that the non-academic components inherently become part of the learning process rather than intentionally. The document clearly states what cannot be expected as an outcome:

This planning process was not initiated to fix something that was broken or to fundamentally redirect our course. Rather it was designed to focus our energies, to capitalize on our strengths, and to bring the whole of the university up to the quality of its best parts. The plan that follows will serve as a guide to decisions and actions over the next five years; the plan is not intended to foreclose unanticipated opportunities or circumstances that are consistent with our mission and resources (2002).

Examples of operational policy at Northern University

As a general example of university policy making, this study focuses on operational policy with a comparative analysis of Dining Services, Purchasing and Waste Management as examples. For the sake of bounding this research, I chose three divisions within the university, which are interrelated by purchasing standards and reporting lines. Each of these units is considered to be an auxiliary unit on campus and falls under the responsibility of the Vice President of Finance and Administration. This is not to say however, that decision-making processes in other divisions such as Transportation Services would not also provide insights into barriers to integrating sustainability. In this chapter, I briefly summarize each of these auxiliary units so as to provide a basic context for the ensuing discussion. Each of these divisions is managed through the RCM budget model and is expected to produce a mission statement that supports the strategic plan.

Purchasing Office. The Purchasing Office at a university has a significant hand in determining the flow of goods and services into a university. The role of a purchasing professional is to create and authorize contractual agreements with multiple vendors for a variety of goods and services (Lyons, 2000). The Purchasing Office at Northern University plays precisely that role by knowing the pulse of the organization, the financial limitations, and the ethical guidelines to facilitate the flow of goods and services into the organization. Purchasing agents both work with and represent the buyers on campus including particular offices or entire departments. Responsibilities also include overseeing campus-wide contracts for items such as office supplies, computers and furniture. The

Northern University system Purchasing Office is characterized as the central purchasing office for the system responsible for overarching contracts. The Northern University Purchasing Office has a director and six purchasing agents. The Director reports to the Vice President of Finance and Administration who in turn is accountable to the President and the Chancellor's office.

The Purchasing Office is the central office on campus for overseeing campus contracts and purchases over \$10,000. The bid limit for purchasing is clearly explained in the procedures and policies for the Purchasing Office:

Purchasing must obtain competitive pricing for the purchase of goods or services \$10,000 or over through a formal bid process, unless the purchase is covered by the following types of existing contracts: state university system, state, federal, or other cooperative contract or pricing agreement.

In 1995, the process became decentralized on the Northern University campus, for purchases below \$10,000 through the establishment of Central Receiving and Business Service Centers. The Director of Purchasing explained the process:

The average transaction is about \$168 and we are almost up to \$200. It takes care of high volume, small purchases. When I think about what we did prior to the university procurement cards (credit cards)... every fiscal year we would have thousands of blanket purchase orders. We would have to set up a purchase order, a blanket for \$5000 for the year. That's one PO (purchase order) and of course there are thousands of them that we are producing. But every PO has how many invoices that come in over in accounts payable. So one PO can have hundreds of invoices... what's the point. It makes no sense.

Since the Purchasing Office is responsible for bids that award contracts that equal the amount of \$10,000 or more there is a specific process that must be followed. The following list outlines the typical responsibility of a purchasing agent:

- Purchasing assigns a bid number to all requests for tracking purposes
- This number should be referenced on all documentation relating to the request
- A specific due date and time are assigned to all requests
- Purchasing creates the RFB (request for bid), RFP (request for proposal) or RFI (request for information) request document
- Purchasing issues the RFB, RFP, or RFI to interested vendors and posts to the purchasing web site
- Responses are sent to purchasing by the specified date and time (responses are confidential until the due date)
- A public opening of all responses will be held at purchasing or another specified location (the contract unit from the business unit as well as all firms, are encouraged to attend)
- All responses are evaluated by purchasing and the contact person
- When applicable, a detailed summary of all responses is tabulated into an Excel spreadsheet to assist in the evaluation process
- The summary is distributed to the contact person and is available to the general public
- A decision on the award is made with collaboration from purchasing
- If a decision is made to award, the contact person notifies their business units on whether to issue a purchase order or use the Procurement Card (credit card).
- When a bid is awarded, purchasing will post the information on the web.
- If insurance or bonding is required from the awarded firm, purchasing is responsible for ensuring that these requirements are met prior to working on campus.

At the end of the document there is a final statement which is applicable to this study:

In general, awards are made to the lowest cost, most responsive and responsible firm meeting the specifications and delivery requirements outlined in the request for bid. On the more complex purchases, evaluation factors such as past technical experience, years in business, customer references, and life cycle costing are considered, in addition to bid price.

In addition to standard protocol, there are explicit ethical and legal considerations that are stated for and it is expected the purchasing agents will abide by them. The Director of Purchasing noted that:

Purchasing professionals must have a highly developed sense of professional ethics to protect their own and their institution's fair dealing. To strengthen ethical awareness, Purchasing follows the NAEB [National Association of Educational Buyers] code of ethics. Whenever possible we attempt to consolidate our requirements whether they be paper, copiers, or cleaning supplies.

At a university level, product contracts range from computers, office equipment and supplies to food contracts for dining services, athletic equipment for the teams, to construction and renovation materials.

Northern University is a member of the National Association of Educational Buyers [NAEB]. Established in 1921, NAEB was founded as a professional organization that serves college and university purchasing managers throughout the country. There are approximately 1,800 institutions that are members making it one of the largest associations serving the business side of higher education. To place NAEB in a broader context, it is a chapter member of the Council of Higher Education Management Association (CHEMA) which is considered to be an umbrella organization that encourages cooperation among professional associations serving campus administrators. In the context of CHEMA, NAEB represents Purchasing Offices when campus wide issues are discussed.

The mission statement for NAEB is:

...to advocate the development, exchange and practice of effective and ethical procurement principles and techniques within the educational community, through continuing education, publications and networking opportunities.

As a member of NAEB the Purchasing Office at Northern University relies upon their code of ethics as well as insight into trends and new programs on other campuses. The code of ethics that provides the base line for the Northern University purchasing code of ethics has eleven points.

- Give first consideration to the objectives and policies of my institution.
- Strive to obtain the maximum value for each dollar of expenditure
- Decline personal gifts or gratitude.
- Grant all competitive suppliers equal consideration as far as state or federal statute and institutional policy permits.
- Conduct business with potential and current suppliers in an atmosphere of good faith, devoid of intentional misrepresentation.
- Demand honest sales representation whether offered through the medium of a verbal or written statement, an advertisement, or a sample of the product.
- Receive consent of originator or proprietary ideas and designs before using them for competitive purchasing purposes.
- Make every reasonable effort to negotiate an equitable and mutually agreeable settlement of any controversy with a supplier; and/or be willing to submit any major controversies to arbitration or other third party review, insofar as the established policies.
- Accord a prompt and courteous reception insofar as conditions permit to all that call on legitimate business missions.
- Cooperate with trade, industrial and professional associations and with governmental and private agencies for the purposes of promoting and developing sound business methods.
- Counsel and cooperate with National Association of Educational Buyers (NAEB) members and promote a spirit of unity and keen interest in professional growth among them.

The NAEB code of ethics are the basis for the Northern University code of ethics that all of the purchasing agents are expected to abide by on a daily basis. NAEB also provides professional training and support services for member organizations as well as guidance on bid documents and contracts.

In 2002 the Northern University Purchasing Office introduced a Sustainability Statement into a purchasing bid for paper. Later that year, the statement was integrated into the standard format on all bid documents. In some cases the statement is referred to as the Sustainability Statement and in other cases it is titled 'Department/Campus Information'. In the bids that I reviewed the language would read the same, however, the name of the department listed in the first line would be that department the bid is serving. An example of the sustainability statement for the paper bid reads as follows:

Northern University Printing Services, and Northern University Central Receiving, strive to conduct business in a sustainable manner. This is an effort to balance economic priorities with environmental health and human health. Northern University will when economically feasible, do business with companies that can further our sustainable objectives. We are very interested in receiving environmental mission statement or any programs or policies that have to do with sustainable issues, as we are extremely committed to protecting the environment. These programs or policies can be, but are not limited to, reducing, reusing and recycling resources, disposal of organic and other solid waste, conservation efforts in regards to transportation, energy and water, disposal of hazardous waste, giving back to the community. Please include as part of your Proposal any pertinent information in reference to any sustainable practices in your Firm.

In this statement, the Northern University Purchasing Office has explicitly declared sustainability principles as a criterion for awarding campus bids to select vendors. Although this statement has been inserted into all of the bid documents, there has not been a formal training for purchasing agents to review how this would effect the process of awarding a bid.

Dining Services. University students tend to spend more time in the dining halls and food courts than they do in the actual classroom (Creighton, 2000). At Northern University, Dining Services provides approximately 10,000 meals per day at an annual cost exceeding \$3 million.

Food services within universities are either managed internally or contracted out to a private vendor. At the moment, Northern University manages its own food services, however there is an ominous threat of being undermined by an outside vendor who may claim to be more cost effective. Administratively, Dining Services is situated within Hospitality Services and contributes a source of revenue for the university, designated by the RCM

budget model. In addition to a steady source of revenue, Dining Services also contributes approximately 10% of the solid waste produced on campus and uses about the same portion of the university's electricity and water use. In summary, Dining Services is a business situated within an educational institution. Because students are viewed as 'customers', Dining Services responds emphatically to student demand and desire. Food choices are assumed not to be the primary reason that students choose Northern University, nonetheless, there is an expectation on the part of the administration that Dining Services provides a source of satisfaction once the students arrive on campus.

The mission statement for Northern University's Dining Services is:

Through our shared values we will provide superior hospitality services to our guests in support of the teaching, research and public service mission of Northern University. In support of the mission statement, there are eight values that Dining Services uses as a guideline: guest service, continuous improvement, sustainability, integrity, open communication, win/win, fiscal responsibility, and walk the talk.... The sustainability value is defined as, "We are a steward of the earth. We will do everything in our power to protect it for the future."

Dining Services mission statement was revised to include sustainability after the President signed the Talloires Declaration. The mission statement is designed to guide the decision-making processes and actions of its employees. However, there is no formal systemic mechanism of accountability, which holds Dining Services to its written word. Dining Services has also committed to 'walking the talk' as one of their values by stating "we will demonstrate the mission and core values in everything that we do."

One action, which demonstrates Dining Services commitment, is their contribution (measured in financial, infrastructure investment and quantity of food waste) to the compost program. The success of this program is due to their

partnership with Northern University's Sustainability Institute and the Agricultural Research Station. Dining Services produces the food waste, the Sustainability Institute oversees the student interns responsible for collecting the food waste and the Agricultural Research Station maintains the windrows where food decomposes. Since 1998, the compost program has diverted more than one hundred tons of food waste from the landfill to the compost windrows.

Northern University Hospitality Services (NUHS) is comprised of the Conference Center, including the hotel and restaurant, student union food services, catering, and the dining halls. All personnel on campus as well as visitors are considered to be dining customers. Staff and faculty tend to be serviced more frequently by catering and cash operations while students tend to be the primary customers in the dining halls. Data illustrate that trends in students eating habits are leading Dining Services to provide more opportunities for "grab and go" services across the country. Students desire access to quick food at all hours of the day.

Bryan, a Dining Services staff member explained:

In regards to demands, we see society being more 24 hour, 7-days a week operations in everything. Wal-Mart for example is expanding their hours to be more 24 -7... from November right through January they are 24 -7. And they are opened over 14 hours a day even when they are not opened 24 hours a day. Students are demanding food around the clock, and more on the go.

In addition to providing nutritional food for the customers, Dining Services is partially responsible for creating the second aspect of the student's experience which is the socialization component. Dining feels that they are responsible for exposing students to flavors and choices that they may not have been exposed to growing up.

Dining Services works as though they are a support service and not part of the educational mission. Nonetheless, they are committed to nutrition education and a permanent full-time staff nutritionist is responsible for menu planning, educational outreach and working with student dietician interns.

Equivalent to the National Association of Educational Buyers [NAEB] to which the Purchasing Office belongs, Dining Services is an institutional member of the National Association of College and University Food Services [NACUFS]. Institutional members include schools, colleges or universities that provide a food program either directly or through a campus auxiliary association. The mission of NACUFS is:

...to promote the highest quality of food service on school, college and university campuses by providing educational and training opportunities, technical assistance, related industry information, award scholarships, and support for research to the membership.

NACUFS provides information about nation wide food service trends. The purpose of NACUFS is to:

...advance the highest standards of food service on school, college and university campuses; to provide a media through which its members may jointly advance and promote their common interest, goals, and objectives; to provide information and assistance to membership by means of conferences, programs, publications, discussions and research; to advance the cause of good nutrition; and to work cooperatively with professional associations in the fields of higher education and the food service industry towards the attainment of compatible objectives.

The goals and purpose of NACUFS supports the mission and objectives of Dining Services on a university campus.

Under the current budget model, if Dining Services committed to integrating sustainability into their decision-making model, any incurred costs would be placed upon the customer. Within the current decision framework,

Dining Services will not make any decisions that decrease revenue and increase their expenses.

Waste Management. Everyone on campus regardless of position or department is dependent upon the waste management system for disposal of either the solid or hazardous waste that they generate. Aside from the standard stream of recycled paper, refuse from the dining halls, and other office waste, solid waste generated on a university campus tends to be sporadic and influenced by: the types of activities, the beginning and ending of projects, the end of a semester, the renovation of a building, the relocation of an office or the accumulation of several years of wastes in a lab (Creighton, 2000).

The disposal of waste at Northern University is the responsibility of two different departments since the solid waste stream and the hazardous waste stream are managed as two separate entities. One of the primary reasons for the distinction is due to regulatory compliance of hazardous waste from the state and federal level. Solid waste is managed by Facilities Services and therefore is ultimately overseen by the Vice President of Finance and Administration. This waste stream includes both disposable and recyclable material ranging from wrappers and packaging to paper and mixed containers. Hazardous waste disposal is overseen by the Environmental Health and Safety Office which reports to the Vice President of Research and Community Service, and includes a range of items such as chemicals from the labs, pesticides, electronic equipment and computer monitors. Each of these items requires a specific means of disposal specified through state and federal regulatory compliance standards. The cost for solid waste disposal is accounted for within the square foot charge

established by the Responsibility Centered Management budget model; whereas hazardous waste disposal is included in the Environmental Health and Safety budget.

The other personnel division moderately involved with the waste management system is Housekeeping Services, which is situated within Facilities Services. The housekeepers are responsible for transporting all solid waste including recyclables from the main buildings outside to the dumpsters and appropriate recycling containers. The only exception to this is within the residence halls in which the students are responsible for carrying out their own recyclables.

There are no regulations on campus for how much waste can be produced per individual or per department. Waste Management and recycling is perceived to be a necessary service but one that loses money as opposed to a cost incurred by producing trash. The trash collection service is contracted out to Waste Management Incorporated (WMI) while the recycling is picked up by students paid through work-study. WMI is responsible for collecting from the approximately eighty-eight containers that they have distributed throughout campus. A WMI truck comes to campus five days a week and empties out different dumpsters each time. The garbage is then brought to a nearby landfill. The waste that is generated by Northern University is weighed at the landfill and a bill is generated on a per ton basis.

The student-run Recycling Office reports to a designated individual within the Facilities Department. The Recycling Office is responsible for both pick up of paper and mixed containers throughout the calendar year as well as educational outreach during the fall and spring semester. At the time of this

study, the Recycling Office had no designated funds for conducting educational outreach. The Recycling Office employs approximately twelve to fifteen students for the duration of an academic year. Both the paper and the mixed containers are brought to the Grounds and Roads shed where they are sorted and prepared for being sold on the market.

Summary

In summation, there are three unique aspects to Northern University as a study site:

- (a) Northern University has an institutional commitment to sustainability through the development of an endowed Sustainability Institute and as signatories to the Talloires Declaration.
- (b) Within the last five years Northern University adopted a Responsibility Centered Management budget model which is frequently being adopted by universities throughout the country as a budget model.
- (c) Within the last two years, Northern University, through a consensus process developed a strategic plan in which it articulated institutional values and goals.

¹ In 1990, a meeting of 35 university presidents was held at the Tufts University campus in Talloires, France to discuss the universities' role in environmental protection and education. The Talloires Declaration emerged from this meeting which proposes ten points of action for universities to commit to as they strive to become sustainable institutions. The declaration is overseen and supported by the non-profit University Leaders for a Sustainable Future and has over 350 signatories.

¹¹The Convention on Biological Diversity is one of the pivotal agreements adopted at the 1992 Earth Summit. This pact among the vast majority of the world's governments sets out commitments for maintaining the world's ecological underpinnings as we go about the business of economic development. The Convention establishes three main goals: the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of the benefits from the use of genetic resources.

Source: <http://www.biodiv.org/doc/publications/guide.asp>

¹¹¹ In response to the working group's proposal, the United Nations General Assembly at its 1990 session set up the intergovernmental Negotiating Committee for a Framework Convention on Climate Change (INC/FCCC). The INC/FCCC was given a mandate to draft a framework convention and any related legal instruments it considered necessary. Negotiators from over 150 States met during five sessions between February 1991 and May 1992. They adopted the United Nations Framework Convention on Climate Change on 9 May 1992 at UN Headquarters in New York.

Soon after, at the June 1992 United Nations Conference on Environment and Development (known as the Rio "Earth Summit"), the Convention received 155 signatures. Other States have since signed, and a growing number have ratified.

Source: <http://www.unfccc.org>

^{1v} Agenda 21 is a 300-page plan for achieving sustainable development in the 21st century. The twenty-seven principles and thirty-six chapters of Agenda 21 articulate action items that can be adopted by decision-making bodies such as institutional administrators, community leaders, or heads of state.

^v Budget Center: Business Service Center at Northern University

^{v1} Karl Weick (1967) defines Loosely coupled system as, "...image that coupled events are responsive, but that each event also preserves its own identity and some evidence of its physical or logical separateness...loose coupling also carries connotations of impermanence, dissolvability, and tacitness all of which are potentially crucial properties of the "glue" that hold organizations together" (p.68).

CHAPTER III

RESEARCH PROCEDURES

...understanding is achieved by encouraging people to describe their worlds in their own terms (p.2).

- Rubin and Rubin, (1995), Qualitative interviewing: The art of hearing data

In an effort to contribute to the emerging field of sustainability and higher education, I chose to conduct a qualitative study of the decision-making process, in an institution of higher education through the application of a grounded theory research methodology. There is no predetermined research methodology for analyzing sustainability and higher education nor is there ample empirical or theoretical data, which indicates a preference for the selection of one method over another. This chapter characterizes the research procedures and fundamental constructs that I applied to frame, collect and analyze my data as well as some of the specific challenges and questions that emerged throughout the process.

Research approach: Field study utilizing a grounded theory methodology

Creswell (1998), proposes that qualitative research is:

...an inquiry process of understanding based on distinct methodological traditions of inquiry that explore a social or human problem. The researcher builds a complex, holistic picture, analyzes words, reports detailed views of informants, and conducts the study in a natural setting (p.15).

Similarly, Strauss and Corbin (1998), widely acknowledged grounded theory scholars, write that qualitative analysis is:

...a non-mathematical process of interpretation carried out for the purpose of discovering concepts and relationships in raw data and then organizing these into a theoretical explanatory scheme (p.11).

For the purpose of this study, I applied a qualitative methodology referred to as grounded theory. The role of the grounded theorist is to use a systematic procedure to collect data, identify categories, and connect these emerging categorical themes to explain a procedure and form a theory, at a broad conceptual level, about a process, an action, or interaction (Creswell, 2002; Strauss & Corbin, 1998). Strauss and Corbin (1998) emphasize that when conducting a grounded theory study the researcher must not begin with a preconceived theory in mind, but rather assure that the explanation emerges from the empirical data.

Strauss and Corbin (1998) write:

Theory derived from data is more likely to resemble the "reality" than theory derived by putting together a series of concepts based on experience or solely through speculation (how one thinks things ought to work). Grounded theories, because they are drawn from data, are likely to offer insight, enhance understanding, and provide a meaningful guide to action (p.12).

Charmaz (2000), who has adapted Strauss and Corbin's systematic approach with a constructivist slant, reasons "grounded theory methods keep researchers close to their gathered data rather than to what they may have previously assumed or wished was the case" (p.676). I determined that the application of this approach would be the most appropriate since I anticipated that the experiences of the decision-makers coupled with institutional policies and observations would provide unique insight bearing upon my initial

questions. Charmaz (2000) proposes three general assumptions of a grounded theory research procedure. These points assisted me as a new researcher as I prepared for and conducted the interviews.

- a) Multiple realities exist: As the researcher I needed to remain non-judgmental and open-minded throughout the data collection process.
- b) Data reflect the researchers and the research participant's mutual constructions: The success of the data collection process was dependent upon the interaction between myself as researcher and the participants.
- c) The researcher, however incompletely, enters and is affected by the participant's worlds: After I entered into the worlds of the participants I was more attuned to the biases I brought to the study as an observer.

Strategies for conducting research: Interviewing as qualitative research

Interviewing is a fundamental mode of inquiry (Seidman, 1998). The essence of an in-depth interview process is not to gain pre-determined answers to specific questions, nor to test a particular hypothesis but rather an interest in "understanding the experiences of other people and the meaning they make of that experience" (Seidman, 1998, p.4.) Qualitative interviews are a means by which to engage people in their place to describe how they understand and interact in the worlds in which they live and work (Rubin & Rubin, 1995). Rubin and Rubin (1995), who bring in-depth expertise to the field of qualitative interviewing, assert that extensive qualitative interviewing helps to explain "how and why culture is created, evolves, and is maintained" (p.19). Qualitative interviewing can be characterized as both an academic and a practical tool by which to share the world of others by learning about what is going on, why people do what they do, and how it is they understand their world (Rubin & Rubin, 1995).

Because of my particular area of interest in the decision-making process within an institution of higher education, I chose to conduct a structured interview process (Seidman, 1998) or what others call a focused format (Rubin & Rubin, 1995). Interview specialists, such as Seidman (1998), recommend the development of an "interview guide" when preparing for a structured or focused format. Regardless of how the interview is structured, the ultimate goal is to avoid dominating your interviewees by imposing your world on theirs (Rubin & Rubin, 1995). The intention is for the interviewer to begin the conversation with a list of preset questions to which she seeks answers or about which she desires data (Seidman, 1998).

Though organized as a grounded theory research methodology, this study used methodological pluralism, often referred to as triangulation. In addition to in-depth interviews with institutional personnel, the other two primary data sources that I sought while conducting my research were observations (ie. meetings, administrative actions, press releases) and documents (ie. mission statements, general information, contracts, regulations and existing codes of ethics). The observations that informed my study were informal by nature. They consisted of attending twenty-five meetings on-campus relevant to my area of study, and recognizing trends in administrative behavior portrayed through public memos or campus media, and remaining informed about campus policy via public campus-wide memos. The application of "triangulation" within a qualitative study is well supported in the literature (Creswell, 1998; Lincoln & Guba, 1985; Maxwell, 1996). Triangulation is one method that enables a researcher to reduce the risks of forming conclusions that reflect the systematic bias or limitations of a specific method (Maxwell, 1996). Engaging in a research

methodology that taps into multiple sources of data provides the researcher with a more accurate assessment on the validity of the conclusions (Maxwell, 1996).

Each of the three operational units that were represented by the participants, Dining Services, Waste Management, and the Purchasing Office, has a web site as well as printed information that relays general procedures, mission statements and other relevant information. The first task necessitated that I read these essential documents to provide background information in preparation for the interviews. The intent of the document analysis was to attain a thorough understanding of each of the selected operational divisions on campus and identify apparent contradictions and similarities between the mission statements and actual practices.

Structuring the inquiry

The manner in which I shaped the inquiry, the people who I interviewed, and the documents that I accessed patterned the data that I gathered and the narrative that I relay. The overall purpose of the interviews was to explore the participants' professional experience in the decision-making process within a cultural organization, more specifically, an institution of higher education. As I prepared for the research, I recognized that I needed to conceptually envision what I believed I needed to 'understand'; this led to the development of more specific interview questions to reflect that which I needed to 'know' in order to respond to my primary questions that I proposed. Distinguishing between interview questions and guiding questions, Joseph Maxwell (1996) writes:

Your research questions formulate what you want to understand; your interview questions are what you ask people in order to gain that understanding. The latter are judged not by whether they resemble

the research questions, but by whether they provide the data that will contribute to answering these questions (p.70).

In anticipation of the interview process, I compiled guiding questions for myself the researcher, which framed the information that I sought through the research process. In this section I distinguish between the guiding questions that prepared me for the study and the interview questions that I posed to the participants. The manner in which I present the guiding questions depict the very order in which they evolved, from broad to more specific. I first state the guiding question and then a brief explanation as to how the question(s) assisted in directing the research procedure and later the more specific interview questions. The explanation of the guiding questions is followed by an explanation as to how I formulated the research questions.

Sustainability:

- What is sustainability?

In the early stages of the research I identified a definition of sustainability to ground my questions and my thinking. Establishing a fixed definition of sustainability for myself as the researcher provided an initial point from which to consider the perception and experience of the participants. In transitioning from a guiding question to an interview question, I initially grappled with assuming a definition of sustainability versus asking the participants how they defined sustainability. In the end, I chose to query the participants, which provided unanticipated insight into how individuals construct meaning of sustainability.

Sustainability and decision-making:

- Can sustainability be applied to a decision-making framework for institutions of higher education?
- Is the concept of sustainability and the policies, which it might imply, compatible with institutions of higher education in its current state? If yes, how?
- How can sustainability principles guide decision-making at the institutional level within higher education?

I deliberately grouped these three guiding questions together, which reflects my initial bias and presumption that there ought to be an interrelationship between higher education and sustainability. These questions emulate the evolutionary process of my own thinking, moving from “what is sustainability?” to how do these principles relate to, impact, and influence an institution of higher education. So as not to become absorbed by the broader discussion of barriers to integrating sustainability into higher education, I focused upon the decision-making process as one means of integration.

- What factors currently guide the decision making process of institutions of higher education with respect to food services, purchasing and waste management systems?
- Do institutions of higher education in their decision-making in these areas (purchasing, food services and waste management) see themselves as relying upon values that are thought to address the interests of the wider university community? And vice-versa?

I continued to progress from the more general to the specific as I formed this next set of questions. Because I was interested in how the principles of sustainability could be integrated into the decision-making process within the university I selected three operational units

which I believed would offer extensive insight into my initial questions. For the intent of this research, I focused upon Dining Services, Purchasing and Waste Management within the university. To best understand this, I was determined to decipher how decisions are made on a daily basis within these three areas. These later evolved into questions about the how, what, where and the why of decision-making within each of the three operational units.

Ethical and moral considerations of decision-making:

- Is there a formalized code of ethics governing decision-making? If yes, how is this used? How is the code of ethics developed?
- Do decision-makers offer moral considerations in their rationale for decisions?

The code of ethics establishes criteria for the decision-makers to defer to for the purpose of remaining ethically consistent from issue to issue or purchase to purchase. For this reason, I was interested in how the current code of ethics is understood by the participants and how these influence the decision-making process. The application of a code of ethics contributed to my understanding of how universities both guide as well as hold personnel accountable for making value-laden decisions.

These guiding questions were a skeletal beginning to the queries that I posed to the participants during the formal interviews. Although the interviews were structured for organizational and research purposes, there was still room for the

participants to elaborate on aspects relevant to their expertise, position, and personal experience.

In preparation for the structured interviews, I proposed four parallel matrices of specific questions to assist with the development of the interview guide. The parallel matrices refer to questions specific to personnel from Dining Services, Purchasing Office, Waste Management and Administrators. Examples of my guiding matrix can be seen in Table 2. The format of each table delineated what, why, where and whom I needed to contact. The formal interviews were scheduled, audio recorded and transcribed verbatim.

Initially derived from the two diverse components of the conceptual framework, the questions were structured to qualitatively identify the hurdles to integrating principles of sustainability into institutional policy. Certain questions inquired about how the decision-making process is influenced by the economic and other hegemonic factors within the institution. The remainder of the questions examined the other issues such as relevant research information, past practices and moral considerations. The goal was to have a comprehensive set of questions that reflected the theoretical framework that I had proposed.

What do I need to know?	Why do I need to know this?	What kind of data will answer the questions?	Who do I need to contact? Where can I find the data?
What is the role of dining services at Northern University?	To explain the responsibility of dining services	Mission statement; Hospitality services guidelines	Northern University dining services web site; interviews
Who does dining services cater to?	To understand the target audience for dining policies and practices	Mission statement	Northern University dining services web site; interviews
What are the educational messages that students carry away with them after eating in a dining hall at Northern University?	To recognize the role of dining within the context of an educational institution	Mission statement; formal interviews with dining personnel; informal interviews with students; observations	Northern University dining services web site; Formal and informal interviews; observations within the dining halls

Table 2: Example of the interview matrix

The matrices were fluid in nature, in that the questions evolved as my understanding of each case deepened. The questions were ordered in a manner from more general to more specific. The general questions were meant to provide insight into the role of the operational division within the university. The more specific questions inquired about particular aspects of the way in which the department conducts their operations. I minimized the use of the term sustainability within the matrices so as to draw out responses that more accurately reflected the ethical perspectives. There were specific questions, which asked about ethical codes of conduct and impact of materials on ecosystem health and human well-being. The matrices did not represent an exhaustive list of questions but merely a framework from which to begin

planning for the interviews. In the end, influenced by my guiding questions and framed by the questions in the matrix, I approached each interview with a form specific to that participants' affiliation on campus. With feedback from the first three participants, I grouped the questions in three sections – division specific, sustainability, and institutional structure (Appendix D).

Preparatory research and strategizing

Prior to beginning the interviews, I familiarized myself with institutional policy and structure to determine who ought to be interviewed. At the start of the research procedure, I read university-wide policy such as the documents on Responsibility Centered Management and the Academic Strategic Plan to more specific documents about the three operational units including unit-specific mission statements and codes of ethics.

In the early stages of my research, I set aside my guiding questions, to think more broadly about the university system and raise additional questions that I had not anticipated during the proposal writing. I kept track of those questions throughout this phase but was careful not to become drawn away from the focus of my research. I used these questions to inform my thinking and as a way to ensure that I would not be entering into the interview process too narrowly. In the process of examining these university documents, questions concerning the role of faculty as well as institutional values arose which I had not planned on responding to in this study. Those questions that I do not respond to can guide future research. Some examples of such questions that informed my thinking process as I prepared to conduct the interviews were:

The role of faculty expertise in institutional decision-making:

- Is there a place in which knowledge and research provided by the faculty can be applied to the university?
- How is the expertise of the faculty applied to the operational decisions within the university?
- Does the tenure track system conflict with the core value of 'community' by promoting the role of the individual?

Linking institutional values to educational outcomes:

- Does the university ever take the time to reflect upon the messages and values conveyed by its actions?
- How are university operations meant to reflect the values established by the proposed academic strategic plan?
- Do students set the "moral conscience" standard of the university? If so, how?

Though I did not specifically respond to these questions in this research, these thoughts assisted in directing and shaping the questions that I asked those who participated. I expect these questions to be used to guide further empirical studies related to sustainability, higher education, decision-making and organizational theory.

Perspectives of an ethical framework for sustainability

At the onset of the research procedure, one aspect that I was determined to examine in the interview process was how individuals define and act upon both personal and institutional morals and values when making decisions within the workplace. As I explain in this chapter, I promptly learned that this was

more difficult for participants to articulate than I had anticipated. In this section, I outline the interview framework that I had initially proposed to organize my interview questions and explain how that shifted as I began interviewing the participants.

In the proposal phase of my research, I presented a conceptual framework and a rationale for investigating the obstacles to integrating principles of sustainability into the decision-making procedure within institutions of higher education. I had identified four primary areas of interest, which shaped the interview guide. These areas were:

- The role of economics and other hegemonic factors
- Relevant research information
- Past practices
- Moral considerations

I designed what I termed a “matrix of understanding” (Appendix E) to structure the research procedure and ground my analysis. The matrix provided an initial guideline that articulated what I have taken to be the pertinent factors at work and serve as a framework through which to assess whether and how these concepts act as obstacles to integrating sustainability principles into higher education. These three areas were identified based upon previously published research regarding sustainability and higher education (Creighton, 2000; Filho, 2000; Sharp, 2002) and professional experience within the university.

- (a) Economics and other hegemonic factors refer to the locus of the decision-making procedure. There are three considerations

within the hegemonic structure of the university that I anticipated examining. These were: (1) the economic system, (2) the political influences, and (3) the hierarchical configuration of personnel. The interview responses coupled with policy documents enabled me to explore how each of these factors both independently and in relation to one another, effect the decision-making process.

- Relevant research information pertained to the available scientific or other research based data that could have an impact on institutional decisions. My reasoning for this was, there may be some instances in which available research data was not accessible five years ago when a contract was written or a policy established. Examples of this range from information on climate change and air pollution data that bear upon transportation policy to human health data linked to the chemicals used on the lawn. I was determined to explore if and how the 'relevant research information' is sought and applied by the decision-makers.

- Past practices refers to the customary manner in which the university administers its operational policies. Examples in which this may be reflected in the three cases were: the standards that have been set for food that is served in the dining halls, the brands of computers available through the computer store on campus or the manner in which waste is disposed of on campus. I was curious if and how past practices

provided a rationale for and standard that bears upon the decision-making process of the institution.

- Moral considerations were defined quite broadly, as values bearing on human interests and welfare as well as ecological systems. By examining the ways in which these kinds of factors or considerations enter into decision-making about operational policies, I thought that I would be able to observe what the obstacles may be to adopting more sustainable policies and practices. Within this, I had further classified the considerations into three perspectives characterized in relation to the concept of sustainability. I anticipated that the moral considerations reflected by the decision-makers would fall under one of these three views: (1) an anthropocentric perspective, (2) an ecological perspective or (3) a sustainability perspective.

Initially I thought that it was going to be essential for me to distinguish between these three categories in advance for the purpose of being able to delineate the decision-makers responses during the coding procedure as positions that influence the decision-making process. I proposed the following definitions for the intention of making sense of the empirical data:

- Anthropocentric perspective advocates that all decisions are in the interest of humans and that nature is valued and viewed as a commodity.

- The ecological perspective upholds the importance of the value placed upon the entire natural system including biotic as well as abiotic organisms.
- The sustainability perspective strives to reconcile and promote ecosystem health and human well-being in the context of society and over the long run.

In the end, these categories assisted in organizing my interview questions, however, I placed these categories aside when it became apparent that the participant's responses were not as easily aligned with my prescribed categories as I had anticipated. Though with that said, I do note that overall the responses tended to fall somewhere in between the ecological and the anthropocentric perspective.

Interviewing participants and transcribing

I initiated the interview process by identifying and contacting what I had understood to be the essential personnel in each of the three operational units. I entered the interview process with a list of potential participants determined by preliminary research of the operational divisions. As the interviews proceeded the list evolved with recommendations from other participants. My initial list focused on the decision-makers within each of the divisions and soon grew to include the administrative position responsible for that division. In the end, the addition of the administrative positions became a fundamental component of

understanding the decision-making process. The selection process is referred to by Maxwell (1996), as purposeful sampling.

Purposeful sampling is a strategy in which particular settings, persons or events are selected deliberately in order to provide important information that cannot be gotten as well from other choices (p.71).

Maxwell (1996) continues with a more in-depth explanation of this process:

There are at least four possible goals for purposeful sampling. The first is achieving representativeness or typicality of the settings, individuals, or activities selected...to adequately capture the heterogeneity in the population. The purpose here is to ensure that the conclusions adequately represent the entire range of variation, rather than only the typical members or some subset of this range...to select your sample to deliberately examine cases that are critical for the theories that you began the study with, or that you have subsequently developed...to establish particular comparisons to illuminate the reasons for differences between settings or individuals (p.72).

I deliberately selected the participants based upon their professional role and status in the decision process and solicited additional names from these participants at the close of an interview.

I conducted the interviews between May 10th and September 27th, 2002. Each participant was initially contacted with a letter in which I introduced my study and myself. Of the twenty-eight people that I contacted, twenty-four were available to participate. Once the individual agreed to participate, I provided a more in-depth explanation about my study and how the interview would proceed, including an explanation of the letter of consent approved by the Institutional Review Board for the Protection of Human Subjects (Appendix F).

As recommended by methodological scholars Rubin and Rubin (1995), and Emerson, Fretz and Shaw (1995), I maintained two field study notebooks throughout the data collection phase and through the analysis. One notebook was a reflective journal in which I tracked my thoughts, observations and ideas.

By articulating these thoughts in the journal I was able to leave them outside of the interview process. The second notebook was reflexive in which I tracked daily activities, tasks and next steps. This methodology assisted me in remaining on track and consistent in my actions from interview to interview.

I structured each interview with a set of questions relevant to the operational division with whom that participant worked. So as to remain engaged in the conversation and able to link the questions that I asked to the participant's responses, I took minimal notes. I found this technique to be the least distracting for the participant's and thus relied upon the recorded interview and transcripts for further study and review (Appendix H). Though the questions evolved, as I became a more confident interviewer, overall each participant responded to a parallel set of questions within each division.

The interviews took place over a four-month period to allow time for me to concurrently transcribe and begin the process of open coding. Creswell (2002) explains coding data:

...typically begins with the identification of open coding categories and using the constant comparative approach to compare data with incident and incident to category until the category is saturated (p.439).

I maintained a broadly defined list of themes and patterns that gradually emerged as the interviews proceeded. I did not evaluate this list nor remove items to avoid drawing specific conclusions throughout the duration of the interview process. The list expanded as I continued to interview participants and transcribe the remaining texts.

When I affirmed that information was beginning to repeat itself from one interview to the next, I reevaluated my list of emerging categories and data to

determine if more information needed to be collected. Strauss and Corbin (1998) refer to this as “theoretical saturation”:

The general rule when building theory is to gather data until each category is saturated. This means until (a) no new or relevant data seem to emerge regarding a category, (b) the category is well developed in terms of its properties and dimensions demonstrating variation, and (c) the relationships among categories are well established and validated (p.212).

Analysis

I shifted from a focus on data collection to data analysis when I had determined that I had reached ‘theoretical saturation’. The intention of the analysis is to build theory guided by grounded theory methodology. Strauss and Corbin (1998) write:

Although we do not create data, we create theory out of data. If we do it correctly, then we are not speaking for our participants but rather are enabling them to speak in voices that are clearly understood and representative (p.88).

Emerson et al (1995) notes a complementary perspective on the analysis.

They offer these words for guidance to the researcher preparing for analysis.

Efforts to analyze now become intense, concentrated and comprehensive: the fieldworker begins to sift systematically through the many pages of fieldnote accounts of discrete and often loosely related incidents and happenings, looking to identify threads that can be woven together to tell a story (or a number of stories) about the observed social world. The ultimate goal is to produce a coherent, focused analysis of some aspect of the social life that has been observed and recorded, an analysis that is comprehensible to readers who are not directly acquainted with the social world at issue (p.142).

As prescribed by Strauss and Corbin (1998), I found myself shifting between the more specific and the more general as the theory unfolded from the data throughout the analysis. I queried the data at the onset of the analysis which enabled me to receive and understand the information that I was gathering in

new ways. I wanted to assure that I was not reaching conclusions based upon my own assumptions that I brought to the study. I began to compare responses and seek unanticipated patterns. An example of this is my focus on ethical reasoning with which I commenced the study and how the data broadened my understanding of what is actually taking place in the decision-making process.

I was also influenced by the words of Emerson et al (1995) who write:

Analysis is less a matter of something emerging from the data, of simply finding what is there; it is more fundamentally a process of creating what is there by constantly thinking about the import of previously recorded events and meanings (p.168).

The ability of the researcher to recognize the important information that emerges from the empirical data is referred to as “theoretical sensitivity” (Strauss & Corbin, 1990). My ability to perceive and make sense of the patterns of information that I gathered was grounded in my conceptual understanding of the system and the manner in which I constructed the interview process and later conducted the analysis.

In retrospect, there were eight stages to the analysis which commenced as a linear sequence and soon turned into a dynamic and iterative process in which I revisited each of the analytic phases as my understanding of the empirical data progressed. I have identified the stages of analysis as:

Micro-analysis: Throughout the micro-analysis I read and re-read the transcripts as well as listened to the taped interviews with the intention of absorbing the data and examining specifics. Strauss and Corbin (1998) assert that the micro-analysis:

...compels the analyst to listen closely to what the interviewees are saying and how they are saying it...This prevents us (the researcher)

from jumping precipitously to our own theoretical conclusions, taking into account the interviewees' interpretations (p.65).

Though I was careful not to come to any conclusions until the interviews were complete, the micro-analysis was a continuous process throughout the data collection period in which I maintained a list of trends and patterns that emerged as the interviews proceeded.

Review of field notes and journal entries: Throughout the entire data collection phase and analysis, I relied upon both my reflective journal and reflexive notes as a way to keep me in check with the process and inform my thinking. I referred to Emerson et al (1995) for guidance on how to best make use of my notes. They suggest that the researcher begin to link the field notes to the broader analytic issues by writing "a word or short phrase that captures and signals what is going on in a piece of data in a way that links it to some more general analytic issue" (p.146). Emerson et al (1995) recommend the following guideline for examining one's data, which I found useful for organizing my thoughts:

- What are people doing? What are they trying to accomplish?
- How, exactly, do they do this? What specific means and/or strategies do they use?
- How do members talk about, characterize, and understand what is going on?
- What do I see going on here?
- Why did I include this item in my notes? (p.146)

Open-coding process: In the early stages of the micro-analysis, I began a lengthy list of codes from which to detect patterns in the data (Appendix G). According to Emerson et al. (1995), open-coding is:

...a way of opening up avenues of inquiry: the researcher identifies and develops concepts and analytic insights through close examination of and reflection on fieldnote data (p.151).

More specifically, the researcher:

...should seek to generate as many codes as possible, at least initially, without considering possible relevance either to established concepts in one's discipline or to a primary theoretical focus for analyzing and organizing this ethnography...any particular code category need not necessarily connect with other coding or with other field data; integrating categories can come later, and one should not ignore or disregard codings because they suggest no obvious prospects for integration within a major focus or with other emerging categories (Emerson, 1995, p. 152).

I developed a list of coded data within each case example as well as cross coding for comparison.

At the time that I had concluded the interviews and transcribed them verbatim, I organized the data with the assistance of the computer program Hyper-research. Hyper-research provided a mechanism through which to do selective coding, as well as sort, compare and access the transcripts. "Selective coding" implies the integration of concepts around a particular category and the filling in of categories in need of refinement (Strauss & Corbin, 1998).

The coding categories evolved and expanded following several reviews of the transcripts. Rather than assigning the data to the categories that I had anticipated prior to the data collection process (ie. ethical categories), I developed codes based upon the patterns that emerged from the information (Emerson, Fretz, & Shaw, 1995). Though some of the patterns reflected prior assumptions, the final analysis lead to a broader understanding of the decision-making process embedded within the

institution of higher education. Though strictly a qualitative study, there was an aspect of quantitative reasoning that prevailed as I determined trends based on the number of times an issue was referenced.

Reread the policy documents and other documents recommended by the participants: The participants in their responses referenced documents such as those from the National Association of Educational Buyers and the National Association of University and College Foods Services. Access to these documents provided greater depth and insight to the institutional regulations and trends that shaped the participants decisions.

Compared transcripts to policy documents looking for contradictions and relationships: I engaged the process of triangulation to assure consistency by comparing statements and assertions from participants with written documents (ie. policy, codes of ethics) and observations (ie. actual circumstances). In this process I searched for paradoxes and connections.

Conceptualized the data into categorical themes: I devised the initial framework for a coding system for the data which led to the analysis and development of the grounded theory (Creswell, 1998). Strauss and Corbin (1998) write:

...concepts that reach the status of a category are abstractions; they represent not one individual's or group's story but rather the stories of many persons or groups reduced into, and represented by, several highly conceptual terms (p.145).

I organized the final list of codes into ten categories: Accountability, communication, economics, ethics, hegemony, morals, perceptions of

sustainability, personal stories, trends and values. There were specific headings within each of these categories that I applied which assisted in sorting through the specifics of the data. Categorizing the data eventually assisted in determining which data would be integrated into the discussion and which would be temporarily placed aside.

Determining the theory that emerged from the data and justifying which data would not be used in the dissertation: Following several attempts to refine the codes and categorize the data I was able to determine which information would respond to the initial question that I posed and which had to be temporarily dismissed. As indicated by Strauss and Corbin (1998), I needed to reach the point in which the findings could be presented as interrelated concepts and not merely a list of themes. Strauss and Corbin (1998) explain this process as, "...it is not until the major categories are finally integrated to form a larger theoretical scheme that the research findings take the form of theory" (p. 143).

Emerson et al (1995) support Strauss and Corbin's recommendations:

...theory does not simply await refinement as analysts test concepts one by one against events in the social world; nor do data stand apart as independent measures of theoretical adequacy...assumptions, interests, and theoretical commitments enter into every phase of writing an ethnography and influence decisions that range from selecting which events to write about to those that entail emphasizing one member's perspective on an event over those of others (p.167)

Comparing the emerged theory to existing literature: Once the themes and categories were confirmed I returned to the literature which initially informed this study as well as literature that I had not previously reviewed to explain unanticipated trends that emerged. Chapters IV, V and VI

reflect this process.

What may appear to be a linear progression due to the format in which I have presented the steps is misleading since I consistently remained fluid throughout the process.

Trustworthiness, validity and credibility

Maxwell (1996) emphasizes that:

...methods and procedures do not guarantee validity, nonetheless [they are] essential to the process of ruling out validity threats and increasing the credibility of your conclusions (p.92).

A number of research methodologists such as Maxwell (1996), Guba and Lincoln (1985), Miles and Huberman (1984), Eisenhart and Howe (1992), and Jansen and Peshkin (1992), provide a variety of research 'checklists' which can be applied for the purpose of reassuring a credible study. The articulation of these comprehensive research strategies encourage researchers to test the validity of, as well as potential threats to the conclusions as opposed to trying to verify them.

Lincoln and Guba (1985) challenge the researcher to "persuade his or her audiences (including self) that the findings of an inquiry are worth paying attention to, [and] worth taking account of " (p.290). The checklist that they suggest in validating a research project includes testing for truth, value, applicability, consistency, and neutrality.

I clarified my biases and hypothesis for the purpose of maintaining an impartial study prior to entering into the research (Lincoln, 1985). I developed a clear and concise approach for data collection that solicited information from a diverse range of individuals and settings through a variety of methods. The

reason for this approach was to decrease the risk of unintentional associations as well as systemic biases on account of a specific method. The intent of this approach was to yield an accurate assessment of the generality of the explanations that have been developed (Maxwell, 1996).

Rubin and Rubin (1995) contend that:

Most indicators of validity and reliability do not fit qualitative research. Trying to apply these indicators to qualitative work distracts more than it clarifies. Instead, researchers judge the credibility of qualitative work by its transparency, consistency-coherence, and communicability; they design the interviewing to achieve these standards (p.85).

Transparency insinuates that the reader is able to see the basic processes of data collection, assess intellectual strengths and weaknesses, biases, and conscientiousness of the researcher (Rubin & Rubin, 1995). To respond to the need to be transparent, I transcribed each of the interviews verbatim, including pauses and redundancy. The interviews were recorded on a tape with permission of the participant. During each of the individual interviews, I used a standard questionnaire that I designed to guide the question and answer process as well as to jot down any specific comments, thoughts that could be relevant to the data analysis.

Rubin and Rubin (1995) maintain that:

A credible final report should show that the researcher checked out ideas and responses that appeared to be inconsistent...In qualitative research the goal is not to eliminate inconsistencies, but to make sure you understand why they occur. When people present different versions of the same event you either have to offer evidence why you accept one version or the other, or show why in these circumstances people can hold contradictory understandings (Rubin, 1995, p. 89).

As defined by Rubin and Rubin (1995), having consistency – coherence requires that the researcher provide grounded reasoning as to why there are

contradictions from one interview to the other and what those mean.

Consistency becomes apparent when thematic patterns arise from the interview process.

I sought out thematic patterns in the interview transcripts as well as paradoxes and contradictions in responses to assure consistency and coherence. These patterns and paradoxes became the basis for determining which data would become the basis for the text of this dissertation and which would be temporarily put aside. I engaged the process of triangulation to assure consistency by comparing statements and assertions from participants with written documents (ie. policy, codes of ethics) and observations (ie. actual circumstances).

The final variable proposed by Rubin and Rubin (1995) is that of communicability. They allege:

Readers who have never been in your research setting should feel confident that they now can find their way around the arena that you describe. The richness of detail, abundance of evidence, and vividness of the text help convince those who have never been in the field that this material is real (Rubin, 1995, p. 91).

I have sought to portray the validity of the material and the richness of the narrative in this document. Due to the breadth and amount of material that I collected throughout this process, it was not feasible to portray all aspects of my findings. However, I have selected what I have determined to be the most pertinent material that emerged from my dialogue with the participants to respond to the questions and conceptual framework that guided this study.

Ethical issues

As a responsible researcher I applied a code of ethics that I abided by throughout the research process (Maxwell, 1996). The intent of an ethical code of conduct is to protect the participants who are willing to participate in the research process (Rossman, 1998).

Research ethics are about how to acquire and disseminate trustworthy information in ways that cause no harm to those being studied. To obtain high quality information in interviews, you are dependent on the cooperation of your conversational partners. When you encourage people to talk to you openly and frankly, you incur serious ethical obligations to them.... These ethical obligations require avoiding deception, asking permission to record, and being honest about the intended use of the research (Rubin, 1995, p.93).

I assured the participant, through both written and verbal communication, that I would protect his or her identity and not use any of the information that I acquired during the interview against them. I provided the participants with an opportunity to clarify concerns or questions that they may have about the research at any point before, during or after the interview process. All of the participants, program names and the study site have been assigned an alias so as to protect the identity of the individuals. I remained in contact with each of the participants after the interviews were complete to assure a sense of openness and availability. By no means were any of the participants slighted during the process due to differences in race, status, gender, language, or any other social identity consideration.

Due to the hierarchical nature of the university, I chose to assign alias names using formal and informal designations. The more formal titles such as Dr., President, or Chancellor, are indicative of the position the individual holds

within the administration. The designation of Mr. or Ms. represents the middle management level of director or manager. Lastly, an individual referred to by first name is a staff member with no particular position or title that implies political power.

Because I am a professional working in the field of sustainability and higher education, I needed to be conscious of the language that I used and the biases that may have emerged during the interviews with the participants. One of the greatest challenges that I faced through the data collection process was making the familiar strange throughout the course of the research. My familiarity with the subject material made it essential for me not to take anything for granted in the data collection process.

There were two cases in particular in which I had to ask participants to explain an issue in greater detail when I recognized that they were assuming that I had previous knowledge of a particular incident. In these instances, I queried further into issues that I may have already been familiar with in order for the participant to further expand on their perspective. A perfect example of this scenario was the movement to introduce rBGH-free (recumbent Bovine Growth Hormone) milk into the campus dining halls. The participant assumed that I was familiar with rBGH as an issue and merely referred to this as a Dining Services issue. In the interview, I reminded the participant that I was seeking as much information about her work as she was willing to share and not to assume that I had prior knowledge. In other instances, if I detected that the participant was refraining from sharing more information with the assumption that I already knew, I prompted her to continue her frame of thought and elaborate on the incident. This reinforced my need to be explicit about the information that I

sought. I needed to pay attention to the assumptions that I brought to the discussion.

As I embarked upon the interview process, I did not exploit any person under any circumstance for the purpose of retrieving answers to the questions that I posed (Rossman, 1998). Throughout the interview process I took copious notes in a journal as well as audio-recorded the personal interviews. I monitored my behavior by reviewing my notes and transcripts on a regular basis. I assured the participants that any documents that I attained would be used for the purpose of this research and not to advance my work professionally.

In my communications with the participants, I was very clear in identifying myself as a graduate student and not as a professional in the field of higher education and sustainability. A relationship needed to be established in the interview process that allowed me to: (1) solicit truthful responses to my questions, and (2) reassure the participants that I was asking the questions only for the purpose of the research that I was conducting. I remained conscientious about which aspects of my research that I shared with the participants throughout the interview and data collection process.

As a graduate student conducting these conversations, the participants were extremely open and eager to share their thoughts, experiences, opinions, and ideas in response to the questions that I posed. They were intrigued and engaged by the focal point of the research and enthusiastic in their responses. All of the participants illustrated a sense of humor as well as a sense of commitment and were engaged in the discussion as they responded to my questions.

One of the most difficult challenges that I observed and struggled with early on in the interview process was the need to separate that which I was learning in the interviews from my professional responsibilities at a university. During the data collection process I was learning information about the institution that I had not previously understood or been privy too. I also recognized that this new information would enable me to enhance the work that I was conducting on a campus. I was cognizant of a need to separate that which I learned in the interview process from my professional responsibilities.

I observed that administrators tended to be more defensive than the staff in response to a number of questions that I posed regarding the role of students as well as how personal and institutional morals and values influence the decision-making process. My questions at times seemed to push people beyond their comfort level but that did not seem to impact the depth or the quality of the response that I would receive. Once I developed a better sense as to how different personalities responded to particular questions, I learned how to carry on the conversation and remove any sense of discomfort.

Limitations of research

The burden of transferability of the knowledge gained in this research project lies in the hands of the reader. My hope is that the conclusions will provide assistance to decision-makers and administrators embedded within similar cultural institutions and interested in encouraging the integration of sustainability into an institution of higher education. This may be referred to as analytic generalizability but not actual context.

In the process of simultaneously collecting and analyzing the data, I continually remained vigilant of the numerous perspectives that emerged from the interview process. I carefully selected the testimony depicted in this document to illustrate the breadth of opinions and experiences representative of the emerging trends. Potential discrepancies in the interview responses that emerged may have been linked to the length of time the person has been in her position at the university, or the level of familiarity the individual had with the subject. Moreover, as I acknowledge in my personal statement, I bring to this study my own bias as a practitioner and researcher interested in contributing to the vision of a sustainable university.

I identify four potential limitations inherent within the research procedure. These include:

- Interview questions posed to the participants may have been interpreted differently by each participant as claimed by the educational constructivists.
- I chose to focus on three operational units to develop a manageable project, however it would be more complete if I also looked to other operational divisions such as Transportation Services or Grounds and Roads.
- The study could provide in-depth knowledge if there was allotted opportunity to compare the non-academic decision framework to academic decision-framework.
- I brought to the study my own bias, interest and belief that higher education should take a leadership role in achieving sustainable development.

Though these limitations do not alter any of the data that I have presented or conclusions that I have proposed, I do recognize that a qualitative approach to research is not inherently incomplete.

Summary

In conclusion, I found the application of a qualitative grounded theory study to be an appropriate methodology to seek the data, which best responded to my initial questions. Choosing to conduct my research in a university setting that was familiar – proved to be both challenging and beneficial. I was challenged to make the familiar strange, particularly in the early stages of the process. I did so by asking participants to provide more in depth explanations of particular instances and concepts, which in certain contexts they assumed I would know. I too had to reflect on my own questions to assure that I was not interfering with the data collection process by interjecting my own assumptions. The benefits were reflected in how my knowledge of the system influenced my interview questions.

If I were to conduct a similar study in the future, I would feel confident applying the same methodological framework. The experience of the decision-makers from across the hierarchical divisions of the university proved to provide insight into the decision-making and administrative process of an institution of higher education that cannot be derived from theory alone. This study could be strengthened with more in-depth knowledge of the decision-making process, which I have since obtained, prior to conducting the interviews. In retrospect, now that I have a greater intellectual grasp on decision-making theory, I would have framed some of my questions differently. More specifically, I anticipate expanding this study in the future to include a broader range of comparative groups within the university such as academic departments.

CHAPTER IV

THEORETICAL FRAMEWORK

Everything else changes, but the university mostly endures (p.115).

- Clark Kerr, (1995), Uses of the University

At the most fundamental level, this research analyzes through empirical evidence, how institutional decision-making reflects organizational structure and values. A primary concern of this research is with the rational nature of the conventional decision-making process within an institution of higher education. I chose to focus upon the decision-making process as one means of integrating sustainability principles into an institution of higher education, so as not to become absorbed by the broader debate of how a university becomes sustainable. Though there is a substantial amount of research on organizational theory, decision-making models and administrative behavior, there are two fundamentally unique aspects of this research. Grounded in empirical data and accompanied by theoretical analysis I attempt to respond to the questions: (a) What parameters characterize the current decision-making process? What within the process obstructs the integration of sustainability principles? (b) What influences a decision-makers construction of a rationale for embracing or rejecting sustainability in everyday decisions?

In this chapter, I construct a theoretical framework that extends the decision-making models presented in the literature to sustainability. I do this by building upon and combining literature about organizational, decision-making, and higher education theory with the discussion on sustainable development. Literature on higher education provides insight into the role of the university within society and the challenges facing these institutions at the start of the new millennium. Organizational and decision-making theory applies to how the university functions as well as provides theoretical grounding for views about power structures and how decision agents understand and realize their role within the institution. Constructivist theory helps to explain how decision agents make meaning of sustainability and rationalize their embrace or rejection of sustainability principles.

There are three interrelated questions that guide this study that can be examined through the combination of the theories presented in this chapter:

- What are the obstacles to integrating sustainability into the decision-making process within higher education?
- How does the organizational structure of the university coupled with professional/personal experience shape the decision-making process that leads to the rejection or integration of sustainability principles?
- What enables the decision-makers to rationalize unsustainable decisions?

This chapter is divided into two sections, one on sustainability and the other on the interaction between higher education, constructivist theory, and organizational and decision-making theory. By placing these two seemingly independent discussions within the same chapter, I have attempted to develop a

unique theoretical construct through which to understand and explain the empirical data collected in this study.

There are two terms that I wish to clarify early on, that I frequently reference throughout the dissertation. These terms are 'sustainability' and 'rationality'. I explore each of these terms in greater depth later in the chapter but I introduce both terms at the outset to clarify my position for the reader. First, following an extensive literature review on sustainability, I have chosen not to propose yet another definition (of sustainability) to contribute to the extensive debate. Nor do I subscribe to a particular definition. I regard sustainability as a framework which stems from an international consensus that the pursuit of economic viability as an end in itself does not maintain or enhance ecological health and human well-being. With respect to this explanation, I reference sustainability as a set of principles, which at the core assert the desire to balance economic viability with ecological health and human well-being. The context of this study is the institutional structure of higher education within which sustainability principles could be integrated. Second, I defer to Simon's (1997) definition of rationality. He writes:

...[it] is concerned with the selection of preferred behavior alternatives in terms of some system of values whereby the consequences of behavior can be evaluated (Simon, 1997, p.84).

The theoretical framework is divided into the following sections: The search for sustainability; Multiple interpretations: An exploration and critique of the complex nature of sustainability; Making meaning of sustainability within an institution of Higher Education through a constructivist framework; Organizational theory and higher education; Ethics and values in decision-

making; An institution embedded in culture: A rationale for the intersection between sustainability and higher education.

The search for sustainability

Michael Redclift (2000), Sylvie Faucheux (1998), Martin O'Connor (1998), Jan van der Staaten (1998), Lester Brown (2000), Michael Common (1995), and Stephen Viederman (1995) have all contributed to the literature on sustainability. Independently they assert that the sustainability movement is grounded in the assumption that industrial economies, societies and ways of life on the current growth and development trajectory, undermine the natural environments capacity to continue to perform its resource, waste-absorption and life-support functions on which the economies, societies and ways of life themselves depend (Common, 1995; Faucheux, O'Connor, & van der Straaten, 1998; Redclift, 2000; Viederman, 1995).

Sustainable development and sustainability are often used interchangeably. The notion of 'sustainability' is portrayed in contemporary papers as the interaction between environmental resources and economic development (Froger & Zyla, 1998). Despite the fact that there is no agreed upon definition, the success of sustainability as a concept lies in its ability to play a heuristic role that brings together the apparent necessity for economic growth, the need to preserve the environment and the role of cultural integrity (Froger & Zyla, 1998). The term 'sustainable development' which tends to be ambiguous and at times contradictory in nature, became popularized in 1987 with the publication of the Bruntland report and strengthened through the discourse that began with the 1992 Earth Summit. The Bruntland Report entitled Our Common

Future produced by the United Nations World Commission on Environment and Development (WCED), proposed the commonly cited definition of sustainable development (WCED, 1987):

...development that meets the needs of the present without compromising the ability of the future generations to meet their own needs (p.43).

The definition contains within it two key concepts: the concept of the needs, in particular the essential needs of the world's poor, to which priority should be given; and the idea of limitations imposed by the state of technology and social organization in the environment's ability to meet present and future needs (WCED, 1987). The Bruntland Commission determined that the four basic components of development, identified as – peace and security, economic development, social development, and proper governance – also required environmental protection (Dernbach, 1998). Further research illustrated that national economic development objectives tend to lead to the destruction and/or degradation of natural systems. Examples of their findings included unsustainable agricultural practices that contributed to desertification, soil erosion, polluted groundwater, and loss of soil fertility. Similarly, the continued dependency upon fossil fuels including coal and oil for energy has been identified as a primary source of greenhouse gases (Dernbach, 1998). In summary, no nation faces these risks and challenges alone. Dernbach (1998) notes:

The futures of developed and developing countries are inseparable. Developed countries have tended to be primarily interested in global environmental problems, recognizing that their high level of economic development is responsible for most of these stresses. Developing countries have tended to be primarily interested in development because they see it as a way of escaping poverty (p.20).

The Bruntland Report endorsed the notion of 'sustainable development' with the intention of offering a third choice to developed and developing nations to shift the direction of the current trajectory. This publication coupled with the 1992 Earth Summit has fostered on-going international dialogue about the meaning of sustainable development and sustainability to which scientists, environmentalists, social scientists, economists, activists, social justice advocates, and citizens have contributed. If adopted by governance structures, the application of sustainability principles which calls for balancing economic viability with ecosystem health and human well-being, could potentially change the purpose of national governance, decision-making processes and educational institutions (Dernbach, 1998). The intended outcome would lead to maintaining a healthy ecosystem and greater equity within and among nations. Meadowcroft (1999) notes:

... 'sustainable' and the related term 'sustainability' can be combined with a vast array of terms other than 'development': thus we have 'sustainable growth', 'sustainable biosphere', 'sustainable living', 'sustainable resource management', 'sustainable cities', the 'sustainability of ecosystems', 'cultural sustainability', and so on. This proliferation illustrates the fluidity of conceptual categories and boundaries in the relatively open-textured context of political and social debate. And it reflects the complexity of the theme invoked when development and environment are juxtaposed (p.13).

The discourse on sustainable development is a response to the failed system of economic development which has resulted in a world which is: one-fourth rich and three-fourths poor; half democratic and half authoritarian; a place where poor nations are being denied equal access to global economic opportunities; where the income disparity between the richest 20% and the poorest 20% of the world's population has doubled over the past three decades; where one-fourth of humanity is unable to meet its basic human needs; and

where the rich nations are consuming four-fifths of humanity's natural capital without being obliged to pay for it (Brown, 2001; Dernbach, 1998; Kaul, 1994). Other indicators include an increase in greenhouse gas emissions leading to global warming, loss of farmland and grazing land, depletion of fish stocks in the oceans, and the growing and improper use of chemicals (Dernbach, 1998). In summary, the global scale and severity of environmental degradation and poverty are unprecedented in human history (Redclift, 2000).

A team of leading scientists from around the world have published a statement on "Sustainability Science" confirming that the complexity of today's challenges ought to be considered as threats to humanity (Kates et al., 2000). The essential life-support systems provided by the natural environment are being undermined through the on-going efforts to meet the needs of an ever-increasing global population (Brown et al., 2001; Downs, 2000). They contend that these ecological variations are coupled with:

...social transitions including a population that is growing more slowly, while aging and urbanizing; an economy that is globalizing while increasing wealth and inequality in the face of persisting poverty; and a system of resource utilization that in the energy, manufacturing and agricultural sectors is making more with less even as it increases its overall demands on the earth to unprecedented levels (Kates, 2000 , p.1).

Though the definition proposed by the Bruntland report is one of the most widely cited definitions, it remains at the center of the debate for disagreement, critique and powerful dialogue about how to assess the current societal and environmental trajectory. In this section I provide an overview and critique of some of the alternative definitions of sustainability that have emerged as a response to the one proposed by the Bruntland Report.

Multiple interpretations: An exploration and critical analysis of the complex nature of sustainability

Sustainability proposes a new political philosophy through a direct critique of the dominant neo-liberal ideology. Varying and at times contradictory perspectives of sustainability have been interpreted in international agreements, national strategies, regional management plans and local policies. Sustainability requires us to think differently about social, economic, and environmental goals and how to achieve them (Warburton, 1998). In this section, I present eleven definitions of sustainability that have emerged from distinct disciplines: public policy, economics, science, social theory, organizational theory and public health. I illustrate how each discipline has contributed to the broader discussion on sustainability.

I begin with one of the more prominent interpretations of sustainability, proposed in the literature on economic theory, that distinguishes 'weak' and 'strong' sustainability. Within the context of this dissertation it is not essential to provide an in-depth analysis of the complexity of 'weak' and 'strong' sustainability, however, the underlying meaning of these two terms prepares the reader for the ensuing discussion. The term 'weak' sustainability originated with two neoclassical economists: Solow, a Nobel Laureate, and Hartwick a resource economist (Neumayer, 1999). In response to 'weak' sustainability, the term 'strong' sustainability was developed to represent the opposing paradigm depicted by the earlier definition.

Weak sustainability stems from a neoclassical economic framework. Neumayer (1999) who comments on the proposed interpretation of 'weak' sustainability (ws) writes:

...what matters for future generations is only the total aggregate stock of 'man made' and 'natural' capital but not natural capital as such. Loosely speaking, according to WS, it does not matter whether the current generation uses up non-renewable resources or dumps CO2 in the atmosphere as long as enough machineries, roads, and ports are built up in compensation (Neumayer, 1999, p.1).

The term 'capital' that is referenced in this definition can be defined as "a stock that provides flows of service" (Neumayer, 1999, p.9). 'Weak sustainability' suggests that society will persist as long as technology is developed to compensate for the role of lost natural systems. This interpretation implies that the neoclassical economic paradigm can continue to thrive and maintain a society defined by material goods.

Unlike 'weak sustainability' which has a clear definitive meaning within the context of the neoclassic economic framework, 'strong sustainability' is more difficult to define, as is reflected in the subsequent discussion (Neumayer, 1999). Neumayer's (1999) definition of 'strong' sustainability entails that, "natural capital itself should be preserved for future generations in addition to the total aggregate capital stock" (p.1). 'Strong sustainability' depicts a vision of society in which conscious decisions are made in the present to conserve natural systems for future generations. This interpretation suggests that a change in behavior may be required to attain the goal of conserving resources for future generations.

Though presented together, 'weak' and 'strong' sustainability yield two opposing paradigms. 'Weak sustainability' can be referred to as the 'substitutability' paradigm, whereas 'strong sustainability' is the 'non-substitutability' paradigm. In the context of this discussion, substitutability refers to the ability of technology to substitute for the role of natural systems in the production and consumption of goods. I commence the discussion on

sustainability with these two opposing interpretations to create a context for understanding how and where additional definitions can be placed on a continuum with 'weak' sustainability at one end and 'strong sustainability' at the other.

Robert Costanza (1991) offers a definition of sustainability through the framework of an ecological economist. He notes:

Sustainability is a relationship between human economic systems and larger dynamics, but normally slower-changing ecological systems, in which (1) human life can continue indefinitely; (2) human individuals can flourish, and (3) human cultures can develop; but in which effects of human activities remain within bounds; so as not to destroy the diversity, complexity, and function of the ecological life support system (Costanza, 1991).

Costanza's definition highlights an earlier point that humanity tends to act independently from nature and the economy separate from ecology. In each of these definitions, sustainability encompasses a temporal dimension, which suggests a long-term outlook for the existence of the human population situated within a healthy ecosystem.

Expanding on a public policy perspective, Faucheux et al. (1998) define sustainability through the identification of three primary dimensions of environmental damage brought about by the expansion of the industrial economy. Faucheux et al. (1998) contend that these three threats frame the definition of sustainability:

The first is the threat posed to human life, health and continuing economic activity by impairments to the functional, productive and assimilative capacities of ecological systems. The second is the threat to the natural world – loss of biodiversity, the disappearance of particular habitats and the extinction, local and global, of particular species of flora and fauna. The third is the threat to socially, aesthetically and culturally significant environments, both rural and urban (p.1).

A scientific perspective is that of Daily and Ehrlich (1996), reknown scientists who have published extensively about the importance of carrying capacity within an ecosystem. Daily and Ehrlich (1996) propose:

Sustainability characterizes any process or condition that can be maintained indefinitely without interruption, weakening, or loss of valued qualities. Sustainability is a necessary and sufficient condition for a population to be at or below carrying capacity. Carrying capacity always embodies sustainability (p.992).

Pertaining to Daily and Ehrlich's position framed by carrying capacity, fellow scientist, Chukwuma (1996), suggests that there are some definitive conditions of a sustainable society:

...society's rate of renewable resource use must not be in excess of its rates of regeneration, the rate of non-renewable resource use must not be in excess of the rate of development of sustainable renewable substitutes, and the rate of pollution discharge not in excess of the environment's assimilative capacity (p.6).

For Daily and Ehrlich, and Chukwuma, carrying capacity of the ecological system defines sustainability within ecological boundaries of a system. Carrying capacity is generally defined as the "number or biomass of organisms that a given habitat can support" (Odum, 1993, p.138). Though a temporal long-term dimension is implied in the scientific definition, there is an absence of mention of the economic system. It is this variable that distinguishes the scientific perspective from that of an economist.

Viederman (1995), contends that sustainability is the "control of capital by a community, in all of it's forms- natural, human, human-created, social, and cultural" (p.36). This implies to the degree possible that present and future generations can attain a high degree of economic security and achieve democracy while maintaining integrity of the ecological systems upon which all life and

production depend (Viederman, 1995). Viederman suggests that humanity is in control rather than the ecological limitations of a system. He offers a second definition, which is more visionary than the first:

Sustainability is a vision of the future that provides us with a road map and helps to focus our attention on a set of values and ethical and moral principles by which to guide our actions, as individuals, and in relation to the institutional structures with which we have contact – governmental and non-governmental, work-related, and other (Viederman, 1995, p. 37).

In this definition, Viederman suggests that the notion of sustainability provides an ethical and a moral framework by which to make decisions at the individual and institutional level. Unlike the definitions proposed by some of the other theorists, which tend to be based upon ecological or economic limitations, Viederman emphasizes the role of cultural values as a determinate factor in shaping our future. In the next definition, Prugh et al also raise the question of culture and specifically identify the domination of a desire for material goods.

Prugh, Costanza, and Daly (2000) in their book, The local politics of global sustainability, agree that the common element of all of the definitions is “everybody wants something to persist” (p.5). The difficulty is that all of these definitions embody contradictions and complexity. Prugh et al (2000) raise the point that “meeting our needs” as stated in the Bruntland report is attainable, the challenge is situated in meeting the ‘wants’.

Nearly 90 percent of economic activity in rich nations goes toward satisfying wants, and those seem insatiable. “Wants” have a way of becoming “needs”: try living without a telephone in a culture where everyone else has one....How can we know what future generations will need or want? (p.5)

Prugh et al (2000) reason that “sustainability will be achieved, if at all, not by engineers, agronomists, economists, and biotechnicians but by citizens” (p. 5).

They assert that "because the conflict is about values, sustainability must be socially and politically defined" (p.6).

Building on the Prugh et al argument of how people within a developed nation distinguish between 'wants' and 'needs', Redclift (2000) places the discussion of sustainability within the context of a consumer society. He writes:

Is there anything inherently unsustainable in broadening the market for computers, TV sets, or cars? If the answer is "yes", then those of us who possess these goods need to be clear about why we consume goods unavailable to others. The response is usually that it is difficult, or even impossible, to function in our society without information or private motorized mobility. But this is to evade the question of what I would call 'underlying social commitments': the taken for granted aspects of everyday social life. We may define our needs in ways, which effectively exclude others meeting theirs, and in the process increase the long-term risks for the sustainability of their livelihoods. Most importantly, however, the implications of the processes through which we enlarge our choices, and reduce those of others, is largely invisible to us, it may take place at several removes from us, in others countries, or in the future (Redclift, 2000, p.3).

The question of whether we should continue to sustain life opportunities that are destitute and impoverished in favor of sustaining the level of materialism in wealthier nations is a point of contention in the discourse on sustainable development. The United Nations Development Program (UNDP) maintains that human development and sustainability must go hand in hand since they are essentially components of the same ethic of universal justice for all people.

The ethical framework of decision-making for sustainability

Repeatedly, actions that could prevent harm for present and future generations tend to be deferred within a decision-making process. There is an insistence that significant proof of harm first be established at which point,

however, it may be too late. For this reason, I direct attention to the precautionary principle because, from my perspective, it should factor into the ethical framework of a decision guided by sustainability principles. The precautionary principle was introduced with the recognition that policy makers and industry were failing to act quickly enough when faced with ecosystem health and human well-being concerns that were supported only by incomplete scientific information. The precautionary principle states:

...when an activity raises threats of harm to human well-being or the environment, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically (Kriebel & Tickner, 2001).

There are four central prescriptions of the precautionary principle. These are: 1) preventative action ought to be taken in the face of uncertainty, 2) the burden of proof needs to shift to the proponents of an activity, 3) a wide range of alternatives to the potentially harmful actions needs to be explored, and 4) an increase in public participation with the decision making process should be sought (Kriebel & Tickner, 2001). The precautionary principle calls for the appropriate legal and economic limits for action while accepting, as a given the need to act, despite the continuing reality of scientific uncertainty (von Moltke, 2000).

The act of decision-making under strong uncertainty is a well-recognized established issue in microeconomic theory. Yet little has been done to explore its significance for the management of the environmental problems arising from economic activities. Given that many of the environmental effects of economic activities are unknown and unknowable in advance, it is of interest to understand how uncertain environmental effects might be accommodated in a

framework of decision-making with respect to inter-temporal flexibility and the precautionary principle, (Froger, 1998, p.287).

Froger and Zyla (1998) assert that the kind of uncertainty that dominates the analysis of sustainable development, could be characterized as “strong uncertainty”, and that for this reason alone, decision-makers have difficulty integrating sustainability principles. Froger and Zyla (1998) present three reasons for the underlying uncertainty:

- The interaction between the economic system and the environment is so complex that the available theoretical knowledge, scarce and dispersed, is unable to induce consensus, even among experts.
- The empirical measures of the relevant phenomena are quite often unreliable, as in the case of the thickness of the ozone layer or the actual extent of global warming.
- Many environmental sustainable problems have not had historical precedents. As there exist no observations of the historical outcomes of environmental changes, and as the complexity of the problem forbids – even in principle – any long term prediction, it is extremely difficult to identify the possible environmental consequences of economic activities or to construct reliable probability distributions for those affects (e.g. the environmental effects of a new biotechnological product or of the progressive reduction of biodiversity.) (Froger,1998, p. 281)

I concur with Froger and Zyla’s observations. I have included these three points in the discussion because they provide insight into the reason decision-makers struggle with uncertainty when regularly under pressure to make decisions.

Summary: A critique of sustainability

Critics of sustainable development tend to emphasize the vagueness surrounding the notion of the term and the debate as to the most accurate definition. Godard (1998) notes that some mainstream economists have intentionally attempted to dismantle the notion of sustainability by “exposing it’s

lack of precision, its inconsistencies and its distinct inferiority relative to the concepts emanating from the classical theory of optimal growth" (p.308). He further argues that two divergent perspectives have emerged from the discussion on sustainability, which can be categorized as either biocentric or anthropocentric. The biocentric view tends to be assumed by scientists and environmentalists advocating for environmental preservation, at times referred to as environmental sustainability (Godard, 1998). Daily and Ehrlich (1996) and Chukuwuma's (1996) definitions would fit into this category.

The call for sustainability is due to the recognition that the pursuit of economic viability as an end in itself does not maintain or enhance ecological health and human well-being today or in the future. In summary, I look at the definition proposed by Jennings and Zandbergen (1995), scholars of organizational behavior and ecological risk assessment respectively. They draw from the laws of ecology as a way to argue that institutional theory can be used to inform how sustainability relates to organizations. A term that they introduce in their study is "organizational sustainability" implying the long-term carrying capacity or survival of a system (Jennings & Zandbergen, 1995). Jennings and Zandbergen (1995) contend:

Sustainability is a concept embedded in a larger theory about how the ecological system and the social system must relate to each other in order to remain intact over long periods of time (p. 1018).

This conception of sustainability provides a vision, though vague, that suggests the need to find balance between the environment, society and the economy that will continue indefinitely. With numerous definitions to chose from, the question pertinent to this discussion is how do decision-makers not familiar with the literature and unable to decipher the fundamental points inherent in each

conception of sustainability learn to integrate sustainability into their daily responsibilities.

Making meaning of sustainability within an institution of higher education through a constructivist framework

In this section, I turn to constructivist theory to determine how it is that an individual, embedded within an institution of higher education, makes meaning of sustainability. The term 'constructivist' is a variant of the term 'construction' (Velody & Williams, 1998). In the literature the terms 'constructivist' and 'constructionist' tend to be used synonymously (Velody & Williams, 1998). The fundamental purpose of constructivist theory is to describe what "knowing" is and how one "comes to know" (Fosnot, 1996). Constructivist/constructionist theorists have grounded themselves within the disciplines of sociology, psychology, and education. For the purpose of this discussion I turn to two educational constructivist theorists - Ausubel (1997) and Gowin (1981) - and one social constructionist theorist - Hannigan (1995). Each of these theorists offers varying perspectives on how individuals construct knowledge. In the context of this study, I have explored a constructivist framework informed by these three theorists, to understand what influences affect a decision-makers rationale for their behavior, and more specifically, what influences their construction of a rationale that involves the integration or rejection of sustainability principles. My interest in applying the principle of constructivism to this discussion is to develop an understanding as to how individuals situated within institutions make meaning of sustainability. Is a decision-maker's understanding of sustainability influenced by the structure of the institution? Institutional policies?

Institutional values? Or do personal experiences or values influence the decision-makers notion of sustainability?

Those coming from an educational perspective tend to emphasize how knowledge is formulated through pedagogical experiences. Educational constructivists tend to differentiate themselves along a theoretical continuum that ranges from a perspective which advocates that knowledge is created within the head of the individual apart from its surroundings; to the notion that knowledge is created through the interaction between the individual and its social environment. Educational constructivists are equally interested in learning and knowing, recognizing these as distinct functions. Learning is a personal endeavor and unique to each individual while knowing is public and shared. A variety of learners can share the same experience however the meaning of that experience can be completely different for each person. For example, we might say that this different constructed meaning is represented in participant testimony, in response to the same set of interview questions that are part of this study.

Within a learning theory model, culture is the vehicle by which people acquire the concepts that have been constructed over time. Though the participants in this study are not students in the formal sense, they are individuals who strive to make meaning of their experiences within Northern University. I begin the discussion with a brief explanation of the two educational constructivists, Ausubel and Gowin. Ausubel advocates the view that the "single most important factor influencing learning is what the learner already knows. Ascertain this and teach him accordingly" (Mintzes, 1997). The challenge for the educator is to discover the elements in the learner's existing

knowledge store that are relevant to what is to be taught. Ausubel believes that knowledge within the brain is highly organized and the objective of the educator is to identify the relevant subsuming concepts that are available in the learner's cognitive structure. This organization enables linkages to be formed between already attained elements and new ones. Ausubel contends that because every individual has a unique experience in a common educative experience, the resulting network of concepts of one individual will vary from that of another.

On the other hand, Gowin's theorizes that shared experience generates meaning, which is shaped by knowledge when human beings interact through the sharing of information. Gowin suggests that human behavior is a quest for meanings, which are extractable and transferable. Gowin maintains that "educational value arises out of the construction of meanings that tie things together and thus create our world" (Gowin, 1981; Gowin & Novak, 1984). Following the immersion in an educative event, the meaning of experience has changed for that individual because of the interaction with other learners. The change can range from the trivial to the profound. The construction of meanings enables the individual to connect knowledge gained in the past to both present and future experiences (Gowin, 1981).

Hannigan (1995), an environmental sociologist, applies constructionism in his work as both a theoretical stance and an analytic tool. From a social constructionist perspective, Hannigan suggests that environmental problems are constructed through a combination of scientific fact and societal influences. He claims that there are six factors that are necessary for the successful construction of an environmental problem. These factors are:

- Scientific authority for and validation of claims

- Existence of 'popularizers' who can bridge environmentalism
- Media attention in which the problem is 'framed' as novel and important
- Dramatization of the problem in symbolic and visual terms
- Economic incentives for taking positive action
- Emergence of an institutional sponsor who can ensure both legitimacy and continuity (Hannigan, 1995, p.55).

Hannigan (1995) states that the concept of environmentalism itself is "a multi-faceted construction which welds together a clutch of philosophies, ideologies, scientific specialties and policy initiatives" (p.56). In his application of constructionism, Hannigan makes an explicit distinction between social and environmental problems. He suggests that the construction of social problems calls upon ethical and moral concerns whereas environmental problems (which are morally charged) are distinguished and made apparent through scientific fact (Hannigan, 1995). The significance of Hannigan's approach to this dissertation, is the relevance of his argument to sustainability. Sustainability is a combination of social and environmental issues, which rely upon both ethical and moral principles and scientific fact.

A constructivist analysis is concerned with how "people assign meaning to their world" (Hannigan, 1995). New knowledge is constructed with the observation and experience of events conjoined with the concepts that one already retains. Based on the discussion of constructivism, I have raised additional questions of concern for future research:

- How do the implicit and explicit educational messages (Apple, 1979) of the university shape the knowledge base and actions of it's decision-makers?

- How does 'constructed' meaning impact the development of a sustainable university?
- How does the organizational structure of the institution influence the experience of the decision-makers and therefore their understanding of sustainability?
- How does the organizational structure of the institution shape the learning outcomes of the students?
- How does the culture of higher education influence ones constructed understanding of sustainability?

The application of a constructivist theory to this study reminds the reader that the decision-makers are learners too, and are continuously striving to make meaning of their experiences. I assert that the application of a constructivist theory is one way to discern how the decision-makers understand sustainability and discover what factors influence their experience.

Institutional structures: University as bureaucracy

Throughout the second half of the nineteenth century, institutions of higher education in the United States have been responding to a rapidly expanding and changing nation (Gardner, 1999). Gardner (1999) notes that during this time period, universities in the United States were reshaped by:

...holding on to the best of the past – the liberal arts college modeled on the British undergraduate experience – borrowing the best of the new from continental Europe – the German emphasis on empiricism, research, and graduate study – and adding ideas of their own – the land grant concept embodied in the Morrill Act of 1862^{xi}, which increased student access, reconfigured and broadened both the curriculum and public service, and laid the foundation for the country's great public universities (p.18).

North American universities face new challenges brought on by globalization, a revolution in technology and telecommunications, an ever evolving political environment and an uncertain economic outlook (Gardner, 1999). Gardner (1999) identifies some of the most essential challenges in the years to come to be:

...diminishing sovereignty of nations, the growing balkanization of countries and societies, the increasing gap in wealth between developed and underdeveloped countries, the relentless growth of world population, the mass migration of peoples, the rising level of religious fundamentalism, gross environmental degradation, shrinking stocks of basic food supplies relative to need, including water, and the education of the young for the world they will live in – not for the one with which they are familiar now (p.20).

Gardner (1999), in response to this global outlook, suggests that institutions of higher education, particularly in Western nations, have a vital role to play in finding solutions to these challenges. Universities have the greatest capacity to define, analyze, and examine these issues while taking a leadership role in developing creative ways to respond to them. He asserts that universities have the ability to approach these issues with less political bias and ideology and with greater impartiality and objectivity than other institutions, public or private

(Gardner, 1999). Gardner's (1999) rationale as to why the university has the capacity to embrace this role is:

...it is the institution with sufficient experience, independence, and authority to carry out its work while possessing a credible reputation in the larger society. In coming years, the university should be more central to efforts to comprehend and cope with these forces for change. The university, more than any other collective and credible enterprise in our society, should be playing the key role (p.21).

Gardner (1999) supports my notion, presented earlier in the paper, that universities have a vital role to play in responding to these global issues. However, he does not provide insight into the how the university works and what prevents a university from taking a leadership role in coping with these global challenges. In this section, I introduce Apple (1979) and Bok (1990) who complement Gardner by providing in-depth insight into the organizational structure of a university. They attempt to discern the reasons why universities do not play a more active role in promoting global justice and or sustainability.

Apple (1979), author of Ideology and Curriculum, maintains that hegemony within educational institutions reflects the fundamental ways in which institutions, people, and modes of production, distribution, and consumption are organized and controlled (Apple, 1979). I refer to hegemony for the purpose of this study as a way to discern the organizational structure and administrative behavior reflected in the empirical data collected in this study. The concept of hegemony is an important tool for cultural analysis and social critique. It addresses how social practices, relationships, and structures are negotiated among diverse social forces. The term hegemony as it is employed in this study means the process within which relations of power, structure systems

of meaning within an organization (Apple, 1979). In his analysis of hegemony within educational institutions, Apple (1979) draws upon Raymond Williams to summarize hegemony:

[Hegemony] is a whole body of practices and expectations, our assignments of energy, our ordinary understanding of man and his world. It is a set of meanings and values which, as they are experienced as practices appear as reciprocally confirming. It thus constitutes a sense of reality for most people in society, a sense of absolute because experienced [as a] reality beyond which it is very difficult for most members of a society to move in most areas of their lives. But this is not, except in the operation of a moment of abstract analysis, a static system. On the contrary we can only understand an effective and dominant culture if we understand the real social process on which it depends (p.5).

Apple maintains that this system of power relations dominates what western society recognizes as our culture. Through the lens of a social-constructivist framework, hegemonic structures help shape and make meaning of the experience of the individual situated within an institution. Through a comparative analysis of the education system with social structures, Apple contends that the cultural resources and symbols selected by the education system are arguably related to both the normative and conceptual consciousness of a stratified society (Apple, 1979). Apple distinguishes between the 'overt' and 'covert' knowledge that is taught in schools. He illustrates how the relationship between education and economic structures, is linked to the connection between knowledge and power. Apple analyzes how the economic structure of society lays the groundwork for the power structure within educational institutions (Apple, 1979). His discussion of hegemonic relationships within educational institutions stresses the existence of the organized bodies of meaning and practices and the dominant systems of values and actions.

Apple argues that institutions of higher education are one of the primary agencies of the transmission of a dominant culture. Universities do not work independently of the other societal institutions such as the family, the work place and the community. In combination, these forces are involved with the continual making and remaking of the common paradigm (Apple, 1979). When this common paradigm is challenged, it opens up the possibility of inquiring: Whose knowledge is taught? Who selected the curriculum? Why is the education system organized in this way? What is the role of education in society? The response to such questions would begin to open up the bigger question of the linkages between economic and political power, environmental values and sustainability and which knowledge is readily made available to students. Moreover, it raises the value question: Which knowledge and whose knowledge ought to frame the decision-making process? It is these very questions which underlie the nature of this study.

Institutions of higher education have been known to lay claim to a position of neutrality (Apple, 1979; Bowers, 1995; Kellogg Report, 2001; Orr, 1994). The underlying assumption is that by not taking a political stance on an issue, universities are being objective and thus neutral. The knowledge that gets into the schools is merely one choice from the larger pool of available knowledge and principles. Knowledge may be described as a form of cultural capital. More often than not, available information offered as "knowledge" tends to reflect perspectives and beliefs of the more powerful segment of our social community as a whole. Both social and economic values are already embedded in the design of the institutions, in which people work and study. According to Apple, these values are reflected in our actions, modes of teaching, and in our principles,

standards and forms of evaluation (Apple, 1979). Hardly a situation in which one can reasonably lay claim to neutrality.

Building upon Apple's argument, I shift the discussion from hegemony within the university to the hegemonic structures within society that influence how a university operates. He proposes an argument in, Universities and the future of America, as to why universities have not been more responsive to social and environmental issues. Bok (1990) notes:

If one were to ask the average person why universities have not done a better job of responding to the challenge of competitiveness, poverty, and related social needs, the most common reply would undoubtedly be that universities are "ivory towers", too detached from society to be keenly concerned about its problems (p.41).

Bok argues that the very opposite of the "ivory tower" assumption is true. He maintains that on account of the competitive nature of higher education, these institutions need to pay close attention to what is happening within the larger society. Every year, over 3,000 competitive universities and colleges are vying with one another for students, faculty and financial resources (Bok, 1990). This atmosphere of competition forces the university system to pay close attention to and prioritize the desires of particular groups and constituencies from outside of the university system. The constant struggle for funds to support university infrastructure (buildings), research, programmatic development, and scholarships forces institutions of higher education to "adapt to priorities established by foundations, government agencies, corporations, and other donors" (Bok, 1990, p. 42).

Bok (1990) writes:

...it is no accident that universities have failed to address the issues of poverty and competitiveness more effectively, for universities are captive to the very social values and priorities that caused these

problems in the first place (p.42).

Higher education is given an enormous amount of respect and freedom for the role it plays in educating citizens. Wilcox and Ebbs (1992), both of whom are educational research specialists, state that there are four factors that have led to this status. Initially, a college education was thought essential for the intellectual and socially elite of society. The activities and intellectual stimulation that took place within these institutions were thought to be beyond that of the average citizen. At one time, the demand on the public dollar for higher education was small compared to today's figures. Colleges and universities, along with the church, were regarded as the moral leaders of society (Wilcox & Ebbs, 1992). The high moral and ethical standards upheld by higher education established such institutions in positions of leadership. Although colleges and universities are regarded as one of the most important social institutions in our society, its role of leadership has changed over time.

Today, among other goals, higher education is expected to prepare individuals to become employees who are able to meet the needs of business as defined by the 21st century. Consequently, institutions of higher education are expected to respond to that demand by preparing students for a technologically based work environment (Gardiner, 1994). Today a majority of all new jobs in the United States require an educational degree beyond high school (Gardiner, 1994). Moreover, college graduates are going to be found in the primary problem solving roles of every major social and environmental problem confronted by society. Influenced by the changing political, social, technological and environmental changes in the world, higher education is responsible for both inciting and responding to these demands.

Some of these on-going public challenges that college graduates are being forced to respond to involve ineffective schools, unstable families, international and ethnic based conflict, resource depletion and environmental degradation (Brown et al., 2001; Gardiner, 1994). The integrity of society depends upon current and future graduates who have a practical understanding of themselves and others who differ from them. Moreover, these graduates need to have the values and intellectual, social and, professional skills that are required as social workers, politicians, ecologists, educators, citizens, business people, and community leaders, to lead society today and into the future (Gardiner, 1994) (Bowers, 1995).

Drawing upon a survey of university faculty, Bok (1990) notes:

...in leading universities, research is valued over teaching and pure research gains more respect than applied research aimed at solving problems in the real world. Of course, those who believe most strongly in the overriding importance of pure research are not uncaring about society and its needs. They simply feel that universities will make their greatest contribution to society by seeking knowledge for its own sake, leaving to others the task of applying the results to help solve practical problems (p.51).

Bok contends that the competitive framework embraced by institutions of higher education cannot prevail in alleviating poverty, halting environmental degradation, improving public education or even making the United States participants in the world economy (p. 55). He maintains that to achieve these broad based goals, higher education needs to:

...link individualism and competition with a set of qualities of a very different kind – qualities of a more cooperative and communal nature rooted in a strong sense of personal responsibility toward institutions, communities, and other human beings (p. 52).

The ethical choices of both colleges and universities is illustrated through institutional actions and choices (Apple, 1979). Institutions face the question of whether to be a part of community that values its resources in such a way as to leave a legacy to benefit only future generations, or one that uses its resources to benefit the present generation (Milbrath, 1984).

Another prominent assumption about institutions of higher education is that they are 'custodians of knowledge' (Kerr, 1995). The ability to possess and generate knowledge is heeded as a source of power within society that can have significant effects on the quality of economic and social life throughout the world (Kerr, 1995). Since universities have the ability to create and disseminate knowledge, they are looked upon as institutions with ethical and moral responsibilities to both preserve and advance the well-being of society with this knowledge (Miller, 1998; O'Brien, 1998; Wilcox & Ebbs, 1992).

Frederic Barnard, President of Colombia University in 1870, argued that education reform was a continuous cycle of meeting the demands of a changing political society (Reuben, 2000). Not unlike today, education reformers maintained that colleges were ill equipped to meet needs reflecting new economic, social and political conditions. In a reply, Barnard asserted that:

the education problem of the day was to discover how to shape colleges and universities that would meet the demands of a modern, industrial society (Reuben, 2000, p.61).

The sustainability movement of today continues to build upon Barnard's assertion.

Marketlikeⁱⁱ behavior in higher education

Apple (1979) advocates for higher education to become a more just enterprise. He believes that institutions of higher education must commit to a new set of standards different from the ones that are grounded in the common paradigm of neo-classical economics. He writes:

The progressive articulation of and commitment to a social order that has at its very foundation not the accumulation of goods, profits, and credentials, but the maximization of economic, social, and educational equality (Apple, 1979, p.83).

Apple (1979) declares that if people have the capacity to create these systems, then they have the capability of restructuring them with new commitments. He (1979) asserts that the successes and failures of the education system need to be understood within the context of the economic structures of society, which perpetuate systems of inequality. At present, economic feasibility appears to be the overriding criterion employed in conducting business within universities while concerns of ecological health and human-well being tend to be overlooked in the process.

We see some examples of this imbalance in the following: parking lots are valued more than green-space, unlimited garbage disposal is provided rather than mandatory recycling, processed food is purchased instead of locally grown unprocessed food, more-than-enough food is the standard leading to food waste, energy abundance is assumed while the need to conserve is ignored, and chemically treated shorn green grass is preferred to a wild flower meadow. I offer these examples to illustrate that economic concerns coupled with operational standards tend to outweigh ecological health and human well-being as the fundamental decision-making criteria.

An understanding of the economic factors offers one explanation for why institutions of higher education perpetuate unsustainable practices. The predominant economic model within the United States and other democratic western nations assumes a neoclassical framework of economics and thus relies on a strategy grounded in free markets and private forms of capitalism situated within a global economy (Ruccio, 1993). This system tends to place pressure on individuals to produce and consume at high rates while giving little thought to the availability of resources for the long-term (Milbrath, 1984). The neoclassical model tends not to take account of the materials, energy sources, physical structures, and time dependent processes that are fundamental to the stability of the natural ecosystem. Decisions within a neoclassical economic model perpetuate privatization of public activity, deregulation of private activity, cuts in social spending, and the encouragement of market solutions to social problems (Ruccio, 1993). This model portrays the non-human world as having only instrumental value for human gratification (O'Neill, 1993).

Assuming neoclassical economics as the predominant economic model, Slaughter and Leslie (1997) introduce the term "academic capitalism". The term is designed to explain economic activity within a university and to refer to how a university operates within and interacts with the global economy. Their primary use of the term is explained as follows:

The central argument to our book [Academic Capitalism] is that the structure of academic work is changing in response to the emergence of global markets. As national competition for global market shares increased, Australia, the United Kingdom, and the United States developed national higher education and R&D (research and development) policies that in the end reshaped faculty work and both undergraduate and graduate education. Increased global competition interacted with national and state/provincial spending priorities so that less money was available from government when measured as a

share of higher education revenue or in constant dollars per student
This precipitated campus reactions of a resource-dependent nature
(Slaughter, 1997, p. 209).

Slaughter and Leslie (1997) argue that marketlike behavior is changing the nature of higher education. They define marketlike behavior as:

Institutional and faculty competition for moneys, whether these are from external grants and contracts, endowment funds, university-industry partnerships, institutional investment in professors' spin-off companies, or student tuition and fees (Slaughter, 1997, p.11).

The term "academic capitalism" grew out of institutional and professional market or marketlike efforts to secure external funds (Slaughter, 1997). By way of case examples from public research universities within the United States, Britain, Canada, and Australia, Slaughter and Leslie (1997) illustrate how the conception of academic capitalism provides insight into the financial state of university campuses today:

When faculty find themselves spending increasing amounts of time in the pursuit of external relationships that might yield more students, contracts, or partnership arrangements, thus increasing unit revenue, the concept of academic capitalism may help them put their activities in a meaningful context. Faculty and administrators may begin to view the rapid rise of costs for academic professionals as a way of funding academic capitalism and may begin to wonder when entrepreneurial activity on the periphery will begin to reshape the academic core definitively (p.210).

Based on research, Slaughter and Leslie (1997) note that these new fiscal patterns are the result of a shift in responsibility for higher education support from government (ie. block grants) to other sources. As the government source of fiscal support declines, there continues to be an increase in the use of the market funding mechanisms (Slaughter & Leslie, 1997). These shifts in funding impact both Research and Development agendas and permeate the university as a whole as well. Slaughter and Leslie (1997) claim that in response to this market funding

mechanism, university administrators will push to expand the university's sales and services functions. This will manifest through a shift in fiscal behavior:

Institutional resources very likely will be committed to support academic personnel or professional officers (non-tenure-track, non-instructional academic professionals) who will help faculty apply for and execute grants, contracts, partnerships, technology transfer, and other entrepreneurial activity...more institutional funds will be expended on managing entrepreneurial endeavors (offices for patenting and licensing, technology transfer, arm's length foundations, research parks)...stocking university shops with products bearing logos and mascots, privatizing food services by licensing concessions to fast food chains such as McDonalds's, Pizza Hut and Burger King (Slaughter, 1997, p.216)

Reinforcing the recent trends portrayed by Slaughter and Leslie (1997), Bok (2003) too, discloses evidence that supports a growing pattern of behavior amongst universities mimicking that of corporate America. He refers to this as the 'commercialization' of higher education. Bok (2003) writes:

Part of the explanation lies in the growing influence of the market throughout our society. Commercialization has plainly taken root, not only in higher education, but also in many other areas of American life and culture: health care, museums, public schools, even religion. Entrepreneurial initiative, high executive salaries, and aggressive marketing techniques are all spreading to fields of endeavor quite outside the realm of business. Such practice legitimates the use of similar methods in universities. Nevertheless, merely noting the existence of a trend does not explain why it came about, let alone account for its sudden and deep penetration into an academic culture long considered an "ivory tower" set apart from the marketplace (Bok, 2003, p.5).

Bok (2003) and Slaughter and Leslie's (1997) principal concern is to bring awareness to the manner in which corporate practices are being adopted by university administrators and seeping into the educational mission of higher education (Bok, 2003).

Organizational theory

Modern societies are saturated with organizations – families, corporations, educational institutions, religious associations, and many other social assemblages (Alexis & Wilson, 1967). Clark Kerr (1995), author of the Uses of the University, states that an estimated eighty-five institutions established in the Western world by 1520 still exist today in recognizable forms. These institutions include the Catholic Church, the Parliaments of the Isle of Man, Iceland and Great Britain, and seventy universities (Kerr, 1995). Organizations may be characterized as viable, dynamic and enduring while others may be short-lived, resolute and inert. Nonetheless, organizations such as government, universities and religious associations have existed for centuries. Kerr (1995) writes that universities have endured since they continued to be called upon to:

...educate previously unimagined numbers of students; to respond to the expanding claims of national service; to merge its activities with industry as never before; to adapt to and rechannel new intellectual currents (p.65).

The process of administration is as old as human societies and the creation of organizations. It can be argued that all social systems require some form of organization, albeit simple or complex. Regardless of the organization, goals need to be established; structures based upon preferences; resources must be designated; and some form of control must be sustained (Alexis & Wilson, 1967). Thus the need for administration in some form becomes universal.

In providing a theoretical basis of organizational theory and interpretation to support the empirical data, I introduce the work of Simon (1967,1997), who is known as a pioneer for his theory on human choice, administrative decision-making and bounded rationality. I also reference three organizational theorists,

Meyer (1991), Rowan (1991), and Weick (1976) who have been influenced by Simon's work.

Organizational behavior studies purport that policies and institutional structure have a powerful effect on the behavior of the members of that organization (Meyer & Scott, 1991; Simon, 1967). Simon (1997), in his book Administrative Behavior: A study of decision-making processes in administrative organizations, proposes this widely applied definition of an organization. Simon (1997) writes:

Organization refers to the patterns of communication and relations among a group of human beings, including the processes for making and implementing decisions. This pattern provides to organization members much of the information and many of the assumptions, goals, and attitudes that enter into their decisions, and provides also a set of stable and comprehensible expectations as to what the other members of the group are doing and how they will react to what one says and does (p.19).

Expanding on his definition, Simon (1997) notes that organizations are important for three fundamental reasons. He argues that organizations:

- (a) Render an environment, which influences a person's habits and behavior.
- (b) Provide individuals in positions of responsibility with the means to exercise authority and control.
- (c) Determine the circumstances for decision-making dependent upon the manner in which the communication system is organized (p.18).

Based upon his observations Simon (1997) proposes that administrative organizations tend to be organized around specific tasks and thus characterized by specialization. This can take the form of a 'vertical' or a 'horizontal' division of labor (Simon, 1997). A 'vertical' division of labor tends to respond to a hierarchy of authority while the 'horizontal' division characterizes the distribution of work.

The participants interviewed for this study represent sectors that involve both vertical and horizontal divisions within the university hierarchy.

Simon (1997) concludes that there are three prominent reasons for the vertical division of labor in an organization:

First, if there is any horizontal specialization, vertical specialization is absolutely essential to achieve coordination among operative employees. Second, just as horizontal specialization permits greater skill and expertise to be developed by the operative group in the performance of their tasks, so vertical specialization permits greater expertise in the making of decisions. Third, vertical specialization permits the operative personnel to be held accountable for their decisions (p.23).

His observations offer insight into the formal structure of an organization and the interaction of personnel across a hierarchical system. In the article entitled, "Institutional organizations: Formal structure as myth and ceremony" Meyer and Rowan (1991), who build on Simon's theory, write:

...organizations are generally understood to be systems of coordinated and controlled activities that arise when work is embedded in complex networks of technical relations and boundary-spanning exchanges (p.41).

Relying on Simon's theory, Meyer and Rowan recognize that organizations tend to incorporate practices and procedures that are defined by universally rationalized concepts which have become institutionalized in society (Meyer & Rowan, 1991). The incorporation of such practices tends to increase the legitimacy of that organization as well as their prospects for survival. Meyer and Rowan (1991) argue that these very same universally "rationalized concepts" that are institutionalized in the form of policies, practices, services, and programs are actually "powerful myths, and many organizations adopt them ceremonially" (p.41). Meyer and Rowan (1991) note:

Many of the positions, policies, programs, and procedures of modern organizations are enforced by public opinion, by the views of important constituents, by knowledge legitimated through the educational system, by social prestige, by the laws, and by the definitions of negligence and prudence used by the courts (p.45).

For the organization to maintain what Meyer and Rowan (1991) refer to as “ceremonial conformity” in the midst of institutionalized rules, the organizations tend to buffer their formal structures from the uncertainties of technical activities. This leads to an institution becoming ‘loosely coupled’ (Weick, 1976) resulting in “gaps between their formal structures and actual work activities” (Meyer, 1991, p.41). This is a notion that I have explored in this research by observing how the formal structure of the university influences the decision-making process and the interaction between the three operational units.

Meyer and Rowan (1991) reference Weick (1976) in their explanation of formal systems. Weick (1976) contrived the phrase ‘loosely coupled systems’, when he proposed that educational institutions do not reflect the predominant image that an organization depends upon related institutionalized structures, positions, rules, and regulations, but rather are made of disparate elements that are vaguely connected (Weick, 1976). Weick portrays the term ‘loose coupling’ as an:

...image that coupled events are responsive, but that each event also preserves its own identity and some evidence of its physical or logical separateness...loose coupling also carries connotations of impermanence, dissolvability, and tacitness all of which are potentially crucial properties of the “glue” that hold organizations together (Weick, 1976, p. 68).

He argues:

...the organization does what it does because of the plans, intentional selection of means that get the organization to agree upon goals, and all of this is accomplished by such rationalized procedures as cost-benefit analysis, division of labor, specified areas of discretion,

authority invested in the office, job descriptions, and a consistent evaluation and reward system (Weick, 1976, p.68).

The combination of the theories proposed by Simon, Meyer and Rowan and Weick, provide a baseline understanding as to how the structure of an institution purports to function. For the purpose of this study, I have applied these theories to both gain further insight into organizational theory and to have a basis on which to interpret my own data. The combination of organizational theory and the constructs of sustainability discussed at the beginning of the chapter, along with the views of higher education provide the basis of a theoretical framework through which to interpret the data.

Decision-making and ethical implications in organizations

All decisions made within a university or college are apt to reflect the educational objectives and values of that institution (Wilcox & Ebbs, 1992; Orr, 1994). Most universities are bustling and decentralized, leaving the decisions to be made with considerable independence from any centralized power, and frequently constrained from the pressure of time and lack of financial resources (Bok, 2001). Each decision-maker within the institution beholds different levels of responsibility for decisions that have local and broad implications with short and long-term timelines.

It is the cumulative effect of these decisions that reflect what Simon (1997) refers to as the "patterns of action in an organization" (p.19). Decision-making processes take place within and are organized by the institutional structure in which the decision agent is embedded. Simon (1997) defines decision-making as:

...something more than factual propositions. To be sure, they are descriptive of a future state of affairs, and this description can be true or false in a strictly empirical sense; but they possess, in addition, an imperative quality – they select on future state of affairs in preference to another and direct behavior toward the chosen alternative. In short, they have an ethical as well as a factual content (p.7).

Similarly, Mumby (1990) writes:

Because organizational activity and organizational structure exist dialectically, decision-making is not a phenomena that is independent of the structure within which it occurs (p.67).

Mumby (1990) asserts here that there is an essential connection between organizational behavior and organizational structure. Mumby suggests that:

...“making decisions” is not the most important exercise of organizational power. Instead, this power is most strategically deployed in the design and imposition of paradigmatic frameworks within which the very meaning of such actions as “making decisions” is defined (p.67).

In 1967, when Simon first disclosed his theories on decision-making within organizations, he deconstructed the concept of “economic man”, who in the course of being “economic” was also assumed to be “rational”. He writes:

This “man” is assumed to have knowledge of the relevant aspects of his environment, which if not absolutely complete, is at least impressively clear and voluminous. He is assumed also to have a well-organized and stable system of preferences, and a skill in computation that enables him to calculate, for the alternative courses of action that are available to him, which of these will permit him to reach the highest attainable point on his preference scale (Simon, 1967, p.174).

In the development of this theory referred to as “bounded rationality”, Simon rejects the notion of economic man and proposes a notion of rational behavior that is in accordance with access to information and the computational capabilities that are actually possessed by people (Simon, 1967). Simon (1997) defines rationality as being “concerned with the selection of preferred behavior

alternatives in terms of some system of values whereby the consequences of behavior can be evaluated" (p.84). Simon applies the notion of rational behavior to organizational decision-making and contends that "the central concern of administrative theory is with the boundary between the rational and the non-rational aspects of human social behavior" (p.118). He refers to the behavior within an organization as 'intendedly' rational since it tends to be task oriented and efficient at attaining its goals (Simon, 1997). Simon (1997) concludes:

As will become increasingly evident – it is precisely in the real world where human behavior is 'intendedly' rational, but only 'boundedly' so, that there is room for genuine theory of organization and administration (p.88).

He claims that employees within an organization are governed in their actions by both their immediate personal gain and by an intent to contribute to the overall goals of the organization. Likewise, individuals and groups within organizations struggle for power, and at times, work to advance their own goals, which may not always be in accordance with organizational goals. Simon (1997) writes:

It is only possible for organizations to operate successfully if, for much of the time, most of their employees, when dealing with problems and making decisions, are thinking not just of their own personal goals but of the goals of the organization. Whatever their ultimate motivations, organizational goals must bulk in large in employees' and managers' thinking about what is to be done (p.21)

Simon emphasizes two distinct forms of rational behavior in decision-making that he refers to as deliberate and conscious. Recognition of an underlying purpose and consciousness forms the basis of a deliberate rationale. Whereas, an habitual rationale may serve a purpose but happens in a conservative cost and time saving manner. In this case, the decision is likely to occur according to the rules and regulations of the organization. Simon would argue that the establishment of such routines and rules in itself is a rational decision of the

administrative body. When observing decision-making behavior, the analysis must turn to routines to understand the process that created them.

Simon proposes that in every rational decision, the decision-maker contend with facts and values. He defines factual propositions as "statements about the observable world and the way in which it operates" (Simon, 1997, p. 55). These statements, in principle, can be proven to be true or false dependent upon available information. Nonetheless, Simon argues that decisions are more than factual statements. He notes:

... they are descriptive of a future state of affairs, and this description can be true or false in a strictly empirical sense; but they possess, in addition, an imperative quality – they select one future state of affairs in preference to another and direct behavior toward the chosen alternative. In short they have an ethical as well as a factual content. The question of whether decisions can be correct and incorrect resolves itself, then, into the question of whether ethical terms like "ought", "good", and "preferable" have a purely empirical meaning (Simon, 1997, p. 56).

Exuding the behavior of deliberate rationalizing, the decision-maker is responsible for inserting ethical considerations into the decision calculus. Simon (1997) continues:

In order for an ethical proposition to be useful for rational decision-making, (a) the values taken as organizational objectives must be definite, so that their degree of realization in any situation can be assessed, and (b) it must be possible to form judgements as to the probability that particular actions will implement these objectives (p.60).

A question raised in this study is whether the decision-maker alone or the institutional structure is responsible for determining the ethical criterion employed in decisions. In response to this question, Guy (1990), whose theory of ethical decision-making, is grounded in Simon's work, writes "to understand ethical decision making in organizations requires an appreciation of the

contingencies that surround each decision" (p.27). Through her research, Guy has determined that what might be considered to be the 'right' decision is influenced by the availability of information and the external organizational pressures from all sides. Guy (1990) refers to these challenges as "ethical moderators" since they temper the quality of decision-making. She asserts that these stem from the fact that the decision-maker "must balance competing demands from superiors, peers, and subordinates while pursuing organizational goals" (Guy, 1990, p.27). She defines ethical decision-making as:

...the process of identifying a problem, generating alternatives, and choosing among them so that the alternatives selected maximize the most important ethical values while also achieving the intended goal (Guy, 1990, p.39).

Commonly, ethical theories propose moral principles for how we ought to treat people and/or the environment, as well as, what types of actions are morally permissible. An ethical theory cannot merely assert these principles, but ought to provide a formal justification for acting on them. Overall, the basis for a philosophical ethic strives to offer general moral principles backed by a thorough justification for their adoption and utilization in a variety of situations in which people might find themselves.

Decision theory tends to portray the decision-maker as a rational agent who has the ability to pick the optimal available choice (Vercelli, 1998). According to Guy (1990), a decision-makers ethical 'code' is "grounded in values that provide the framework for principled reasoning and ethical decisions" (p.3). Guy asserts that legality, free choice, and integrity, are the three values that shape administrative actions. Laws define constraints and limits; free choice represents complete freedom of personal choice to chose as one so desires; and

integrity represents the unspoken ethical guidelines for which no legal mandates exist. Contradictory values within an organization can lead to diminishing ones in order to maximize the others.

Different decision theories propose distinct decision criteria that lead to modified policy interventions. This rationale could lead to the argument that to clarify the meaning and the properties of alternative rationality criteria, and to choose the most suitable approach for sustainable development, it is advisable to begin the analysis from a decision-theory perspective.

Conclusion - An institution embedded in culture: A rationale for the intersection between sustainability and higher education

Whether we recognize it or not, we are embedded in culture. At times we live in it without always noticing how much it determines our actions (Artz & Murphy, 2000). Culture has been defined as learned behavior and includes all the patterned, habitual actions, ideas and values we perform, hold or cherish as members of an organized society, community or family (Shapiro, 1957). Artz and Murphy (2000), scholars of social justice, and authors of Cultural hegemony in the United States, argue that culture is social and encompasses all of human life. They contend that culture includes all that has been created, built, learned, conquered, and practiced in the course of human history and comprises a way of life. They assert that humans as individuals, groups, and societies can choose to create, build, and practice a variety of ways of living depending, on the availability of resources (Artz & Murphy, 2000). The fundamental point of their argument is that human life involves choices. The choices we make depend

upon the meanings that we give to the actual and potential social relations and practices. Artz and Murphy (2000) explain:

Meanings are generally constructed based on existing social relationships, and hegemony negotiates practices based largely on verbal and non-verbal understandings that reinforce dominant-subordinate relationships (p.15).

Generations depend on the values, norms, beliefs, and institutions within society, which are adapted to maintain the social and economic standards of that culture. An underlying assumption about the prevailing social paradigm is that society endures within a system of beliefs in which humans are separate from nature, and the economy separate from ecology (Wackernagel & Rees, 1996). Scholars such as Kuhn (1962) and Milbrath (1984) have argued that a paradigm shift can change the way in which the world is seen and understood and perhaps modify the way in which people behave (Kuhn, 1962; Milbrath, 1984). One way to speculate why people within institutions of higher education behave the way they do, is to consider the cultural social paradigm in which these institutions are embedded. A social paradigm can be characterized as "society's dominant belief structure that organizes the way (that) people perceive and interpret the functioning of the world around them" (Milbrath, 1984).

A contemporary body of literature suggests that this current paradigm is grounded in an anthropocentric ethic which emphasizes that the role of nature is to serve the production of material goods for human use (Milbrath, 1984). Sustainability represents a paradigm shift that recognizes that humans exist and persist within natural systems therefore, the pursuit of economic viability as an end in itself does not maintain or enhance ecological health and human well-being. A summary statement by the theologian and scholar John Cobb helps to

contextualize the application of sustainability with respect to institutions of higher education. Cobb's statement describes a picture of universities I share, and one that motivates my study:

Overall, universities embody elements of injustice, fail to be fully participatory, and employ unsustainable practices in their own activities. For example, few universities even consider questions of sustainability in their buildings and grounds policies or in their purchasing. What takes place in most classrooms also fails the test of justice, participation, and sustainability. Although much has been found out over the years about how students learn, most classrooms continue to encourage relative passivity on the part of students and to model hierarchical and competitive relations. Rarely are students truly invited to participate as responsible adults in determining what they need to know and how they will acquire this knowledge. For these reasons, what the student really learns in the university is how to excel in meeting heteronomous expectations. This may prepare them for success in a hierarchically structured and intensely competitive society, but it does not prepare for democratic leadership in reshaping that world toward justice, participation, and sustainability (Bowers, 1995).

Cobb provides a critical analysis of how knowledge is organized within the university, claiming that the disciplines are out of touch with society and the needs of the students. He argues that the stress on research is primarily geared for the advancement of the single disciplines and is not conducted with the intention of providing for society. While the disciplines individually provide knowledge to address issues, the power of combined wisdom is lost in the fragmented structure. He suggests that the knowledge gathered within the university becomes self-serving and fails to be used for the greater good of society.

Cobb is not the only scholar to express such disappointment in the system of higher education. Others have expressed similar criticisms of the fragmented system of academic disciplines such as, Wilson in Consilience, Orr in Ecological

Literacy and Bowers in Educating for an ecologically sustainable culture. Each of these writers discerns the importance of unified knowledge and the responsibility that those who produce knowledge within universities have to respond to and contribute to a sustainable world. This fragmentation of knowledge is reflected in the departmental structure of the university system. The research that is required for academic success within the institution is geared toward the advancement of the discipline and not to the benefit of society in solving complex problems.

The interaction between economics and the environment, in itself is complex. Moreover, the available knowledge on these issues, to some degree, remains limited, particularly for the types of decisions made within a university on a daily basis. The intent of this study is to view this interaction between economics and the environment with the context of making decisions within an institution of higher education in which decisions have educational implications for the students and broader community.

¹ Natural capital is defined as the natural resources and ecological systems that provide vital life-support services (Hawken, Lovins, & Lovins, 1999).

ⁱⁱ Marketlike behavior as defined by Slaughter and Leslie (1997) as "Institutional and faculty competition for moneys, whether these are from external grants and contracts, endowment funds, university-industry partnerships, institutional investment in professors' spinoff companies, or student tuition and fees" (p.11).

CHAPTER V

ORGANIZATIONAL STRUCTURE AND RATIONAL CHOICE WITHIN HIGHER EDUCATION

Insight into the structure and function of an organization can best be gained by analyzing the manner in which the decisions and behavior of such employees are influenced within and by the organization (p.2).

- Herbert Simon, (1997), Administrative Behavior

In this chapter, I disclose and analyze the parameters wherein decisions are made at Northern University within the Purchasing Office, Waste Management, and Dining Services as well as the decision rationale of the administrators who oversee each of these operational divisions. The participants in this study represent the vertical and horizontal configuration of the university hierarchy, as classified by Simon^{xiii} (1997), from the level of student, staff, and administrator at the campus and the system's level. The fundamental question that I address in this chapter is this: What constitutes the current decision-making process at Northern University, and what within the process obstructs the integration of sustainability principles into the decision-making process?

This chapter provides an in-depth look at the two categorical-levels of obstacles that emerge from the data. The first level reflects an initial interpretation of the data that supports previously published research on the obstacles to achieving sustainability in higher education (Creighton, 2000; Dahle & Neumayer, 2001; Filho, 2000). More specifically, it examines the direct

response by the participants to the question of “What do you see as the obstacles to integrating principles of sustainability into the university?” The most common, albeit non-exhaustive list of direct responses fall into eight themes. The following themes express the reasons why sustainability principles are not more readily accepted and integrated at Northern University: “requires top-down support” (14), “not fiscally responsible” (24), “costs too much money” (14), “interferes with culture of choice and convenience” (13), “not enough time – due to short term thinking” (14), “too abstract” (8), “must respond to student’s as customers” (15), and “requires leadership and vision” (21). Rather than expand here on these specific topics, I believe a more in depth explanation arises through the extensive discussion of these underlying obstacles.

The second level of obstacles is framed by the decision-making parameters that emerged from the participant comments and provides a deeper understanding of the systemic structure of the university. The compilation of the interviews renders a view of the system that exposes the underlying organizational structure of the university, and what guides a decision-makers choice. Guided by the organizational structure of the educational institution, the analysis of the data reveals that the decision-making process, regardless of the operational function (ie. purchasing, dining services, waste management) is bound by three consistent parameters:

- Fiscal constraint is influenced by marketlike behavior and shaped by a temporal scale and a customer service model.
- Academic and operational divisions within the institution define the roles and motives of the decision-makers

- Institutional values both written and implied, ground the ethical framework and justify the outcomes.

These three parameters are further influenced by the manner in which knowledge is transmitted, power is structured, and relationships are built. For the purpose of this discussion, I refer to this as *patterns of communication*. In this chapter, I illustrate two fundamental points: 1) how these parameters shape the decision-making process, and 2) how the combination of these parameters is influenced by the overarching organizational structure of Northern University. I introduce the parameters in a visual format with the intention of illustrating the decision-making framework that emerged from the empirical data in its entirety. At the beginning of each section I highlight the parameter that will be discussed followed by an explanation.

Fiscal constraint

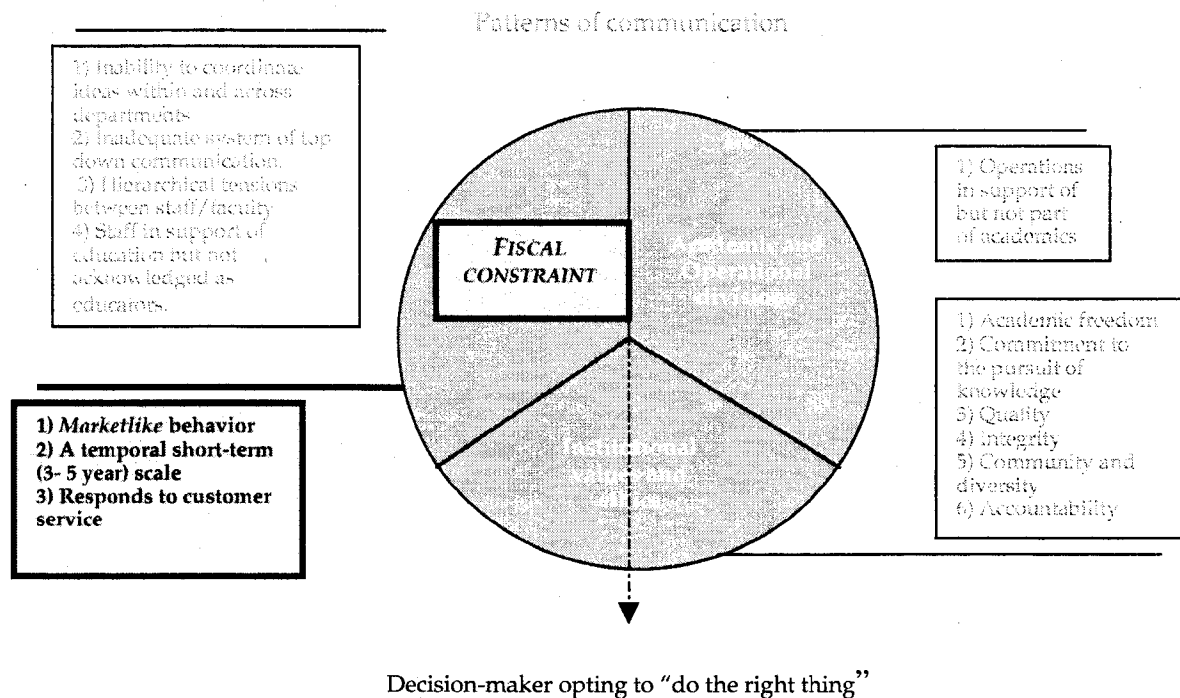


Figure 1: Decision-making framework - Fiscal constraint

Northern University ranks near the bottom of a nationwide list of universities when it comes to allocated state funding for Higher Education. The fiscal constraint the university feels from the lack of state support is a major factor influencing the manner in which decisions tend to be determined within the university. As described in the literature, Northern University is not alone in its struggle to attain financial resources. Gardner (1999) maintains that public higher education funding continues to ebb and flow throughout the United States. There appears to be a direct correlation between the public's attitude

towards “government, taxes, the universities themselves, and with the public’s assessment of the universities’ work and worth” (Gardner, p.21. 1999).

The primary criterion for decisions at Northern University that repeatedly surfaced throughout the interviews was the role of bottom-line economics or what I have classified as fiscal constraint. The data revealed how fiscal constraint manifests itself at Northern University with the emergence of three primary decision parameters.

- Marketlike^{xiv} behavior guides and shapes participants decisions.
- A majority of decisions tend to be based on a short-term scale.
- Customer service is a predominant criterion within the marketlike behavior framework.

In response to fiscal constraint, there is a visible trend amongst universities to: seek a reduction in services and operations efficiencies, defer plant and equipment maintenance, reduce administrative staff, raise tuition rates and increase university service fees, and erode the student/faculty ratio (Gardner, 1999). Initially these responses were assumed to be temporary and in time have become institutionalized behaviors (Gardner, 1999). Northern University is not unique in that it has responded to the challenge of fiscal constraint in many of the same manners identified by Gardner. Some of these actions include outsourcing of services (ie. housekeeping/facilities), a steady increase in tuition rates and university fees, and a reduction in administrative staff.

Bok (2003) correlates economic patterns within the university community with the roots of commercialization in higher education. He writes:

The need for money, therefore, does not merely occur now and then in the wake of some ill-considered decision on the part of state officials to cut university budgets. It is a chronic condition of American universities, a condition inherent in the very nature of an institution forever competing for the best students and faculty (Bok, 2003, p. 9).

Northern University staff members are under pressure by the administration to continuously cut costs without compromising the quality of work. To illustrate the point, I select examples from each of the sectors in which participants explicitly stated how they had to work within a system bound by fiscal constraint. The challenge of fiscal constraint supports the previously published research that declares economics as a primary obstacle to integrating sustainability into the decision-making process. Though this is certainly a concern of Northern University, I note that fiscal constraint does not stand alone as a primary barrier.

The participant responses that best set the context for understanding the challenge of fiscal constraint are university administrators Chancellor Lesser, Dr. Clark and Mr. Kaufman. Chancellor Lesser is the Chancellor for the University System of Northern University (USNU). Within the organizational structure of the university, he holds a position of authority that influences the direction of all of the state universities. Dr. Clark, the Vice President of Finance and Administration is responsible for financial transactions at the University and oversees departments such as Computing and Information Systems, Facilities, Purchasing Office, Office of Human Resources, and Hospitality Services. Mr. Kaufman is the assistant to the President.

Chancellor Lesser confirms that being a poorly funded public institution influences and limits decisions. As an administrator at the

system's level, he works continually with the state legislature to secure funds for each of the state universities. He explained:

We are, relatively speaking, one of the most poorly funded public university systems in the United States. So financially, it's always a struggle. When you are always struggling, you don't have the financial leisure or the inclination to think about things beyond the struggle. You should, but you often don't. It's very human. I think that there is also a feeling sometimes, well, will this make all that much difference? I think that that is a human factor that comes in.

The reality of being a financially stressed institution was reiterated and emphasized time and again throughout the interviews. Chancellor Lesser's statement "when you are always struggling, you don't have the financial leisure or the inclination to think about things beyond the struggle", depicts the reality of the tension felt by the administrators between setting a vision for the university and staying afloat financially. The administrators suggested that fiscal constraint within the current economic and political conditions would be prioritized before sustainability. The underlying rationale for this comment was based on the assumption that the integration of sustainability is costly and could lead to a decision that would be considered fiscally irresponsible. This in itself is interesting in that rather than approaching sustainability as an integrating framework, sustainability is perceived as a competing goal.

From the perspective of the Vice President of Finance and Administration, Dr. Clark emphasized:

... you have got to have more revenue than expense, you have to have economic sustainability. You have got to have a revenue and expense structure where the lines are going in the right direction. In order for that to happen you have to have stable enrollment, you have to have good management of financial resources, long term management such as endowments, and you have to have incentives for cost effectiveness.

Reflecting her primary responsibility at the university, Dr. Clark stressed the need to assure that the revenue generated by institution needs to be greater than the expenses incurred. The RCM model pressures the auxiliaries to make financially sound decisions and increase revenue when feasible. Dr. Clark commented on how a decision guided by sustainability principles which could require additional funding might fare against other perceived institutional needs that do not integrate sustainability. She drew from the example of her experience working on the development of the campus Transportation Policy document. She claimed:

Under the current economic constraints of the university, if money came in to the university totally unrestricted and the president could use it for anything at all... I don't think in our current environment it would go to that [fuel-efficient sustainable] vehicle...in the short view, is it really my job to improve air quality in the city of Summit.

Of course in the long view the answer is Yes, and it's better for the university if the air quality in the City of Summit is better because it enables us to attract and retain faculty and staff and students...it's a more pleasant environment, it's healthier, people live longer, people are healthier... we have greater health benefits... you can do all the big calculus around why that is better for us but in the short term... we are actually doing some of these alternative fuel things... but the reason that we are able to do them is that there is federal money that makes it attractive for us to do it. If it weren't for the federal money and I am looking at a conventional fuel vehicle that costs \$20,000 and an alternative fuel vehicle that costs \$50,000 and there is nothing over here from the outside like the feds to make that more affordable... and someone tells me I ought to do this anyway because in the long run it will improve the air quality in the City of Summit, it's really hard to do it. It gets back to what one's time horizon is given the resource constraints.

Dr. Clark alludes to the assumption that if money were donated to Northern University, it would not be instantly earmarked for a sustainability project. The vehicle that she refers to is an electric or natural gas vehicle, implying that such a decision would incorporate sustainability principles but would ultimately cost

too much money. Therefore, under the current budget scenario an up-front expense with future pay out would not readily be considered. Unless there was specified grant money for such a purchase, most likely an alternative fuel vehicle would not be a prioritized item.

The irony of the current budget model is that as auxiliaries struggle to make ends meet and increase revenues, the economic burden is placed on the campus community. Both student and campus service rates are increased to meet demand. More recently, costs for campus services have increased to the point that some offices are choosing to bypass these options by either contracting off-campus or taking care of the task themselves. The observation of these trends at Northern University are supported by data presented by Bok (2003), Slaughter and Leslie (1999), and Gardner (1997) which illustrate that institutional funds continue to be more commonly used to manage entrepreneurial endeavors rather than non-profit educational programming.

Mr. Kaufman, assistant to the president recognized this trend as a concern, which has surfaced in the context of Northern University's budget model:

One of the difficulties that I see with RCM is that those units that are dependent on generating revenue to support their operations like printing and mail services and instructional services, dining, housing, and all that... have a bit more flexibility than other units because they can raise their rates which have a real impact on those units that don't have revenue sources.

Mr. Kaufman expresses a valid concern in his observation of the behavior triggered by RCM. Supported by Jarzabkowski (2002), studies have demonstrated that a decentralized budget system has the potential to favor existing areas of strength since it is these areas which tend to be self sustaining

and attract resources (Jarzabkowski, 2002). Under this scenario, the departments that are doing well tend to attract resources enabling further growth, whereas the departments that are already less viable have inadequate resources for reinvestment, and thus have a tendency to perform at an unsatisfactory level and may be forced to close or reorganize.

Marketlike behavior

The desire for fiscal constraint in all decisions made within the university has led to the acculturation of marketlike behavior. I have adapted the term marketlike behavior from Slaughter and Leslie (1997). They define marketlike behavior as:

Institutional and faculty competition for moneys, whether these are from external grants and contracts, endowment funds, university-industry partnerships, institutional investment in professors' spinoff companies, or student tuition and fees (Slaughter, 1997, p.11).

Participant testimony depicted that a majority of the decisions on campus are made within and shaped by marketlike behavior in which bottom line economics outweighs educational value. Spurred by fiscal constraint, Northern University is not alone in its effort to adopt a managerial model for keeping costs down.

There is a trend among Western universities to adopt what is being referred to as the 'new managerialism'. Deem (2001) writes:

Current changes in Western universities which are attributed to global and other international economic, social and cultural developments are variously referred to in a number of different ways, including new managerialism, academic capitalism and academic entrepreneurialism ...New managerialism is a concept used to refer to ideas about changes in the way that publicly funded institutions are managed, following the widespread restructuring of welfare services in Western societies (p.8).

Not unlike capital corporatization, the marketlike behavior is disguised as the desire to serve the customer (Deem, 2001). In the end, the provider is more concerned about bottom line and providing financial support to other aspects of the university than the well-being of the customer. Within this framework, the data illustrated that the financial implications of a decision, tends to transcend the ethical and educational implications of the outcome outlined by the academic strategic plan. A lack of state funding and a hesitancy to raise tuition compels Northern University to turn to the auxiliary units, such as Hospitality Services and Facilities Services for revenue. Parallel to the notion of customer service for a standard "fee for service" business, when adopted by a university, students become the customers who pay for the product as opposed to learners who have invested in an education.

To illustrate this point, I have selected excerpts from participants in each of the three auxiliary units, Purchasing, Dining Services and Waste Management. Andrea, a purchasing agent, is responsible for overseeing contracts for products ranging from dairy and produce to office supplies. Andrew is responsible for Dining Services procurement for Northern University Hospitality Services. Mr. Jones, the Director of Dining Services, has been at Northern University for five years and left the private sector to work in Higher Education. Cathy is the staff nutritionist for Dining Services and committed to the nutritious value and variety of food served in the dining halls while working to accommodate and advise students as food consumers. Mr. Martin is the Director of Business Services for the Facilities Department. He too left the private sector to work within Higher Education.

Andrea, a purchasing agent, became familiar with the principles of sustainability while working on a community wide project to increase the recycled paper content of the standard copy bond paper on campus. Andrea reflected upon her experience working to integrate sustainability principles into the decision-making process for paper. She emphasized:

You can't just walk up to a higher ed institution and say this is what you should be doing. It's going to cost you. It won't fly, it won't move. It won't work. They are a business. There are going to be some business considerations, they have got to have some profit in there, they have got to have ways to save money and then move the money around.

Andrea has been with the university for three years now. In her experience writing and overseeing vendor contracts, she experiences the university as a business, which responds to market behavior and price fluctuations. She is expected to act with fiscal restraint and to foster positive working relationships with outside vendors. In her experience working to change the purchasing standard for paper on campus, Andrea recognized that the most efficient approach is to engage in a discussion that takes into account the marketlike behavior exuded by the university. Her comment implies that a purely ethical argument will not change the behavior of the institution.

Andrew, a procurement manager, who manages the Dining Services contracts, characterized his experience since the 1999 transition to the RCM model:

...what the message is now from the administration is... drive revenues because you are here to make money and to keep our customers happy.

According to Simon (1997), the organizational behavior requested by the administration of Andrew is compatible with how a business tends to operate.

Simon (1997) explains:

In order to survive, the organization must have an objective that appeals to its customers, so that they will make the contributions necessary to sustain it. Hence, organization objectives are constantly adapted to conform to the changing values of customers, or to secure new groups of customers in place of customers who have dropped away (p.143).

Dining Services maintains a constant vigilance on outside competition. They make it a point to remain attentive to their customers needs and cutting edge in their practices to maintain an attractive choice for students seeking meal plans. The knowledge of external competition from both local food businesses and large contractor's forces the dining staff to be aware of national trends, local desires, and creative opportunities.

Mr. Jones, the Director of Dining Services, stated:

We're driven to just go do it... "just do it" (laughter). I mean I think we listen to feedback and react to it. We might not like the feedback we get but we listen to it and we make changes to make it better. I think that there are probably a lot of departments out there with the attitude... 'we've done it this way all of the time and I am not going to change this'. We don't have this in our organization. I don't care what it was like before. We have got to continue to improve our processes and do things differently.

Mr. Jones alleges that the competition is healthy and encourages dining to act strategically, keeping both short and long-term benefits in mind. He is very supportive of innovative suggestions on how to please the ever-changing customers, which he sees as leading to the growth of a business.

Cathy, in her role as a dietary nutritionist, discussed the unique position of Dining Services as a business that is in competition with other

local food services, primarily in the Summit community. Cathy's comment confirmed what the other five Dining staff explained:

We have a business to run and what are other people doing and where are they (the students) spending their money and what can we do to compete with that kind of thing... this is the kind of business that you have to be responsive to your customers. If you're not gonna be let me tell you, somebody else will be. The whole team ... all of us share that focus which has made things a lot easier I think. But I think it has made us a lot more successful because people understand if you don't offer what they don't want then someone else will be coming here next week and somebody else will be sitting in your chair.

The continuous threat to be replaced by a contract company such as Marriot, forces the Dining Services staff to remain competitive and profitable for the university. Cathy's quote illustrates that the response to the financial threat is not founded in educational values but rather in the need to produce revenue.

The comments of Andrew, Cathy and Mr. Jones, portrays Dining Services as a business within the university that is responsive to customer desires. Simon (1997) would categorize this behavior as typical:

...although it is correct to say that organization behavior is oriented toward the organization objective, this is not the whole story; for the organization objective itself changes in response to the influence of those for whom the accomplishment of that objective secures personal values (p.143).

The final example that emphasizes the marketlike behavior on campus is an explanation from Mr. Martin, Director of the Business Service Center for the Facilities Services. He has been working at Northern University for five years and is responsible for overseeing the Waste Management system. Mr. Martin prides himself on his duty to balance the bottom line and run the most efficient and productive business as possible. From his position in overseeing a Business Service Center, he was able to clearly state his position and responsibility on campus:

If you are running an operation that is losing money on this campus... you shouldn't be running it. That's a principle.

Mr. Martin continues by explaining how these principles have been applied to evaluate the Waste Management contract for the campus:

So the Waste Collection Company wanted us to sign a seven-year deal and the money was just too expensive to prudently just to sign it...I know they have been a partner with the university in a number of ways but still... they have done some good things there... there is no question about when you are trying to run a facilities business and you are caught up in this RCM model and the rate.

There is no question in Mr. Martin's mind that the operational side of the house is a business that is responsible for supporting the academic side of the house. He further explains his understanding of how Facilities Services supports the mission of the university:

...it is an infrastructure game and the true core mission of this university is not to maintain buildings. It is to provide the education... and how we get there is for us to support them.

Mr. Martin's interpretation corresponds with the strategic plan in that the Facilities Department is responsible for assuring that the physical infrastructure is in good shape and will not get in the way of the educational process. Mr. Martin's actions are guided by a sense of responsibility to maintain a balanced budget and bring in a robust revenue stream through the services provided by his department. This task assigned by the university administration allows him to justify his decisions in a manner that removes him from the educational message of the choices made by his department. As he articulates (above) he abides by the assumption that a successful Facilities Services makes the educational process possible.

In summary building upon Simon's (1997) theory of rational behavior, Froger and Zyla (1998) concede:

...neoclassical decision-theory conceives of a rational economic agent as an optimizing decision-maker. The agent's behavior is interpreted as the outcome of optimizing choices out of a given set of options, in order to adapt to a given environment (Froger, 1998, p. 283).

The behavior illustrated by participant testimony is indicative of the marketlike behavior infiltrating university campuses (Bok, 2003; Slaughter & Leslie, 1997; Weber, 1999). According to Weber (1999), universities must learn to act globally and in a competitive market-driven environment to thrive financially. It is these outside pressures that force universities to consider students as 'clients' or 'customers' by adapting university programs to the needs and wants expressed by the students (Weber, 1999).

Temporal scale

The marketlike behavior is bound by both the need to produce revenue and make fiscally responsible decisions in a timely manner. The mixture of pressure from budget constraints, shifting trends (student demands), politics (local, state, national and international), and daily responsibilities, creates a difficult challenge for universities to think and look beyond five years at a time. At the level at which most daily decisions are made, the time line hovers between yesterday, today and next week. Management of the daily tasks enables the directors and administrators to fulfill their responsibility of assuring that the broader term goals such as balanced budgets and strategic planning are fulfilled.

Although institutions of higher education are one of the oldest standing institutions and will continue to maintain that status, there is a tension between making decisions that respond to present circumstances and those that take account of long-term implications. The common time interval for the university

on matters ranging from bid documents and contracts, to the strategic plan is five years. The longest-range plan that was referenced is the master plan, which projects twenty years out with five-year incremental time intervals. The participants who emphasized the importance of concurring with a short-term temporal scale are President Smith; Mr. Kaufman, assistant to the President; Fran, a purchasing agent; Dr. Clark, Vice President of Finance and Administration; and Mike, a manager of Dining Services.

President Smith argues that the long-term vision and fundamental values of the university as expressed through education, research, and public service will continue into the future while particular goals and objectives shift with time. She noted:

It's the action plan, what we will do in five years. This institution will always have three missions. Education, research and public service because that is deep in it's purpose of being founded. Those will not walk. What you will do with them at the beginning of this century may be different than what you do with them in 2050 but the missions will still be there. That list of values will still be there. Diversity may not be on the list in 2050 if we become a fully successful diverse community. We will not need to talk about it anymore. Academic freedom will always be on there. The political forces that surround an institution will challenge the nature of inquiry.

In her statement, President Smith implies that the goals established for a five-year strategic plan are never developed outside of the deeply rooted mission of the university. The five-year span provides an opportunity for on-going reflection, evaluation and incorporation of new ideas into an entrenched institution. Potentially, in a five year span, some goals are achieved and new goals are established.

In support of President Smith's statement, Mr. Kaufman articulated his viewpoint and raises the question as to what is actually accomplished in five years when it comes to the action steps of a strategic plan:

But the proof in the pudding really becomes the action steps and the action plan.... And to what extent we as a community can actually over the next five years or more... actually accomplish those.

The five-year time span opens up the opportunity to update and review what the leadership and community had agreed upon. While the administrative level is thinking about five year time intervals for reviewing strategic plans, the staff members responsible for writing bids and contracts are thinking closer to three years.

Fran, a purchasing agent, stresses that the time frame of a contract is an essential component to a successful working relationship with a company:

...we have actually extended dates because you find that you have just finished one and you are doing it again. I think as a minimum we like to have a three-year contract but a five-year is better for a total term. There is always an initial term so that at the end of the initial term there is room for negotiation and review. So there is a term for that contract period and the term is one that makes sense that you can... the contract won't get in the way of having a working relationship, like ending too soon but yet that's it's not so long that it's not giving you time to go out and test the market again. And you know... keep a vendor on their toes to by not making them think that there is no competition and they can get lazy.

On a daily basis, the Purchasing Office is working to negotiate contracts for the university and lure in bidders who will offer the best price while meeting the requirements of the bid. Fran explained her responsibility as a purchasing agent is:

The end user can go ahead and pick their supply source however we can get involved in any purchase that we feel that we can add some value to. So we may get a requisition for an item for \$5,000 and take one look at it and know there is another source and that there is some

potential for some cost savings. It could be cost savings, vendor history, or poor performance.

Ms. Green, Director of Purchasing, supports Fran's statement. They both maintain that a three-year contract gives the company a chance to perform and demonstrate its capabilities and at the same time the university has an opportunity to either renew or re-bid the contract after this time period. Ms. Green explained:

We might change the contracts... the number of years that were involved. We might have started out just doing a three year contract and with our experience and so forth we realize that three years on some contracts, they're just getting up to speed with dealing with the university concerns.

Although Dining Services also manages contracts, Mike, the manager of a Campus Dining Hall offers a different perspective and noted that time frames are representative of one's professional position within the stratification of the university hierarchy.

We'll run the operation and I'll worry about what's going to happen three weeks, three months down the line and the people who are running the dining halls, the Joe's and the Steve's...they worry about what is happening today in the dining hall.

Mr. Jones is out there promoting our five-year, ten-year plan and making sure everybody knows which way this airplane is heading. We're up there and trying to make sure that we're steering it in the right direction. And these guys are out there serving it everyday. That's their time frame.

The short-term time span enables the university to remain flexible in its commitment and response to evolving consumer tastes of students and university departments.

Customer service model

The customer service model plays a prominent role in the decision-making process for the three operational divisions. This was illustrated by the decision-makers explanation that they naturally respond to the demands and desires of the customers. In the context of Northern University, the customers include students, staff, and faculty. The participants only applied the term student when referencing “student as customer” and never applied the term “learner” throughout the interviews. The term’s “guest”, “consumer”, and “client” were also readily referenced.

The Dining Services staff and the Northern University administrators frequently commented on the role of the student as customer. I intentionally begin and end this section with comments from administrators to illustrate the messages that emanate from the top levels and in turn influence the institutional framework in which Dining Services and other departments operate. The participants that most clearly articulated the role of the customer on campus are: Dr. Clark, Vice President of Finance and Administration; Andrew and Bryan, Dining Services staff; President Smith and Chancellor Lesser.

Dr. Clark suggested that students work and act within a shared governance framework. The application of a shared governance structure by the university administration assures a voice for students, undergraduate and graduate, in a majority of decision-making processes through representation on a committee. Dr. Clark commented that “sometimes that voice [students] prevails and sometimes it doesn’t.” She noted:

Whether you use the word constituent, client or customer, at the end of the day you are providing a service to them about which they have something to say because: a) they are paying the bill, b) to the

extent that we provide a good service, we are producing a higher quality product at the other end. Unlike the business model where the customer at McDonald's buys the food and walks away... our so-called customer is also our product, or one of our products and so it's a more complex model and it just doesn't lend itself all that well to just trying to pick one word.

Dr. Clark noted that the assumption that the customer is also the product complicates the 'customer service' model. For Dining Services, there is a national trend to refer to the customer as 'the guest'. The model does not change, only the semantics applied to them (ie. customer service is now guest service).

Regardless of the term, the "customer service model" integrates a short-term time scale and the attributes of what Simon (1997) refers to as 'economic man'. According to Simon (1997), this economic being is assumed to be rational and able to make choices and to have a stable system of preferences. Though Simon rejects this notion, the underlying assumptions of 'economic man' that he presents are not unlike those presumed by Dining Services. The customers arrive on campus with varying tastes, eating habits, cravings, special diets, and a large appetite. Dining Services assesses what the needs and desires of the customers are and accommodates them to the best of their ability. The Dining Hall managers have become quite skilled at soliciting feedback to assist with the development of the menus through surveys, bulletin board notes, and an open door policy.

Andrew, manager of procurement for Dining Services, speaks confidently about his work at Northern University and how he strives to respond to the customers. He is well versed on eating trends, procurement techniques and maintaining a healthy revenue stream due to the professional development

seminars that he has attended as an affiliate of the National Association of College and University Food Systems (NACUFS). He explained:

We could not cover our overhead if we did not have a certain base of customers that we could count on. Where our profitability comes in is how successful we are at selling meal plans to people who live off campus... to people who do not have to buy a meal plan...in that context, you have to provide more value and more satisfaction to whomever, you know...because the bottom line is ... we are here to generate revenues for the campus. We have got to have customer satisfaction to provide the services that we need. The absolute bottom line is dollars. We can't lose money... we cannot lose money.

Andrew explained recent customer trends that have led to a shift in dining practices such as hours of service and the most recent trend of 'grab and go', in response to customer demand. He explained what the average eighteen-year old campus consumer desires and demands in this excerpt:

... one of the trends now is that our customers want to have food service available later and later and later...we have come a long way from breakfast, lunch, and dinner. 'Grab and Go' is huge, people want for the most part, at least during the day...people do not take the time or do not have the time... for whatever reason to sit down and spend a lot of time eating... they want to get something and they want to get it quickly. They want faster, longer hours, more variety and they don't want to pay extra for it in their meal plan. So we try to provide that kind of stuff. I think the satisfaction for our meal plans is tremendous. We see a lot of growth in sales.

Correspondingly, Bryan, who is responsible for education and training of Dining Services personnel, also emphasized the customer service model:

First and foremost the goal of dining is to meet our customer needs or to meet our guests.... The buzzword is now guest. It went from client to customer to now guest. It's basically feed our guest. Provide our guest...the perceived quality that they demand... from today's food service environment.

These trends are reiterated throughout all of the discussions with the Dining Services staff. Brian explained:

We try to give them (customers) everything... I mean truly one of the driving things behind the way that we approach business is that always try to get to YES.

When I inquired what would lead to a 'no' response he noted, "things that would truly hurt our profitability." One of the examples he raised was a group of students who attempted to stop Dining Services from purchasing rBGH (Recombinant Bovine Growth Hormone) milk. The students proposed a student senate resolution and circulated a petition which gathered 800 signatures, that called for rBGH-free milk to be served in the Dining Halls. The resolution did not pass because of the level of complexity and uncertainty in the science employed in the discussion as well as a lack of endorsement for such a decision on the part of the World Health Organization. Although there is an extremely valuable and important educational debate behind this proposal, in the end it was simplified and cast as an economic decision. The overall cost for Dining Services would have been approximately \$30,000 more a year if they had switched to rBGH-free milk. Ironically, six months later the contracted company changed their practices due to national consumer trends to providing only rBGH-free milk. However, because of the manner in which the switch was made, a majority of the students are not aware that they are consuming rBGH-free milk and therefore have not been educated about the debate. Dining Services has not been asked by the administration to publicize this change and thus the "customer" education in the matter is ignored. Students do not learn more about the recombinant Bovine Growth Hormones, nor how customer demand outside of the university community has led to a change in policy for the university milk supplier.

Dining Services claims that it is the customer who guides these trends in contemporary food services but no one commented on the source of these demands. The national trend in the United States reflects the eating patterns demonstrated by the food served by Dining Services:

Today, almost half the calories an American consumes comes in the form of fat and sugar... So, we're eating and drinking more processed, high-calorie-low-nutrition foods – from chips to sodas to burgers – than ever. One fourth of all Americans now eat a meal from a fast-food joint at least once a day, and if we choose a double whopper with cheese, we're downing in one meal 130 percent of the saturated fat we're supposed to eat in an entire day (Lappé & Lappé, 2002, p.56).

The tension lies in pleasing the student as customer and assuring a campus of healthy students who are demanding 'food on the go'. Fred, a Dining Services staff member, elaborates on Dining Services commitment to customer service:

I think the reason we do really well is because it's one of the places where there is a response mechanism on campus... like students will write in and say "can I have fruit loops for breakfast?" and the cereal selections and we can say 'yes'. Unlike any other department they come in contact with I think a lot of us are very receptive. I think a part of it is the conditioning.

You know, most of us now within the management team have worked for most folks we deem as contractor outside companies. It creates a sensitivity and I think the people who have grown up through the other side of this maybe didn't have like frappes. BJ who was here all of these years was not used to the idea ... this is the kind of business that you have to be responsive to your customers. If you're not gonna be let me tell you, somebody else will be. The whole team ... all of us share that focus which has made things a lot easier I think. But I think has made us a lot more successful because people understand if you don't offer what they don't want then someone else will be coming here next week and somebody else will be sitting in your chair.

Essentially, Dining Services is making food choices based upon market demand.

This could be interpreted as depending upon an industry that disconnects the providing of food from what our bodies need to thrive (Lappé & Lappé, 2002, p.57), and the source of our food and its impacts on environmental and human

health. Based on the trends in student eating habits obtained through this research, it appears as if Higher Education has succumbed to a system in which eighteen to twenty-one year olds determine the diet of an entire campus.

Working within the customer service model, there is an opportunity for students to act as change agents in support of sustainability by demanding locally grown and organic foods. Though this approach has been attempted at Northern University, as was demonstrated by the students who petitioned for rBGH-free milk, by no means should one example set the tone for how Dining Services would respond to student demand for food choices that reflect sustainability principles. One such example is the integration of vegan options at each meal in one of the Dining Halls, which was the result of persistent student appeals.

President Smith is a proponent of student engagement in university-wide decisions. She supported Dining Services decision not to serve rBGH-free milk due to the increase in cost. Likewise, she understands and supports the customer service model that underlies Dining Service's decisions, however she perceives the educational value of student engagement. President Smith argues that it is essential to balance institutional capability with student demand as well as to recognize that the institution must be responsive to the ever-evolving needs of students. She justified her view and observed:

Students need, while they are here, to learn how to influence a complex organization. And we are one. So we want them to have experience within the decision-making of this institution. We want them to go from here and be effective in complex organizations. And so we do encourage their engagement. But also, the university to a large extent exists for the students and we have got to know where they are and different generations of students are different. And we can't say well we did it twenty years ago and so we are doing it this

way. You have got to be responsive to changes in student generations.

On the other hand, Chancellor Lesser does not endorse the customer service model. While he acknowledges Northern University's financial position and the marketlike behavior standards that the auxiliaries have embraced, he is a proponent of upholding the value of the educational experience of the "student as learner" in all aspects of the university experience. He clarified his thoughts in this comment:

First of all, I don't believe that students are customers. I think that the use of the word customer is helpful in that it has kind of shaken us all up and moved us away from our view of the professorate as the high priesthood. Where, like the Roman Catholic church, we speak a language that people don't understand but they ought to be grateful because we've got the wisdom and we are here... what we do is ontologically good. I do believe that students are clients. Or to use an analogy from health care... they are patients. They come to us because they believe that we have something for them. But as we are seeing in health care and we are seeing in many other professions, they are an ever more discerning and demanding client.

While Chancellor Lesser disputes the use of the term 'customer' for students because of what the term implies, he acknowledges that student demands pose a challenge to the university. Though Chancellor Lesser in is regular contact with Northern University's administrators, it did not appear that he had much contact with the operational units. Therefore, I am not clear how his point of view about 'customer' service is reconciled with the daily activities of these units.

Summary of fiscal constraint

In as much as there is a strong sense of a need to respond to the demands of the students and to assure revenue, I interpret this as an

indicator that the marketlike behavior of the university inadvertently becomes detached from the educational mission. Simon's (1997) work upholds the customer service trends illustrated by the data. He writes:

In order to survive, the organization must have an objective that appeals to its customers, so that they will make the contributions necessary to sustain it. Hence, organization objectives are constantly adapted to conform to the changing values of customers, or to secure new groups of customers in place of customers who have dropped away (Simon, 1997, p.143).

The university is in a predicament between responding to customer demand, which leads to increased revenues or risking the potential for decreased revenues and providing food choices not necessarily expressed by the customer. Simon points out that this challenge is not unique to Northern University but rather a common predicament amongst organizations.

Bok (2003) extends Simon's (1997) observations about organizations in general to that of institutions of higher education. He writes:

Such talented, ambitious people are constantly asking for more programs, more books, more equipment, and more of everything required to satisfy their desire to pursue new interests and opportunities (p.10).

Similarly, Slaughter and Leslie (1999) argue that much of the behavior articulated by the participants may be explained by "resource dependence theory" (p.113). This theory suggests that "organizations deprived of critical revenues will seek new resources" (Slaughter, p.113, 1997). In the case of Northern University, seeking additional revenues and cost savings have become an integral criterion for the manner in which decisions are made within the Purchasing Office, Dining Services, and Waste Management.

In view of these trends, Bok (2003) emphasizes the prevalent concerns arising from the university's response to market forces ranging from the impact on curriculum to operations. With respect to curriculum, Bok (2003) notes:

...whatever value consumer demand may have in deciding what goods to produce, it is not a reliable guide for choosing an appropriate curriculum or constructing an ideal research agenda (Bok, 2003, p.29).

Bok (2003) concludes that the trend among higher education institutions of 'maximizing profit' is not an adequate guide for making decisions within a university. The behavior portrayed by the participants illustrates that Northern University has conceded to the trend of being guided by the marketplace. The dilemma that the decision-maker faces occurs when the marketplace decision is at odds with the values embraced by the university. This will be discussed in more detail in the next section.

Institutional values, ethics and morals

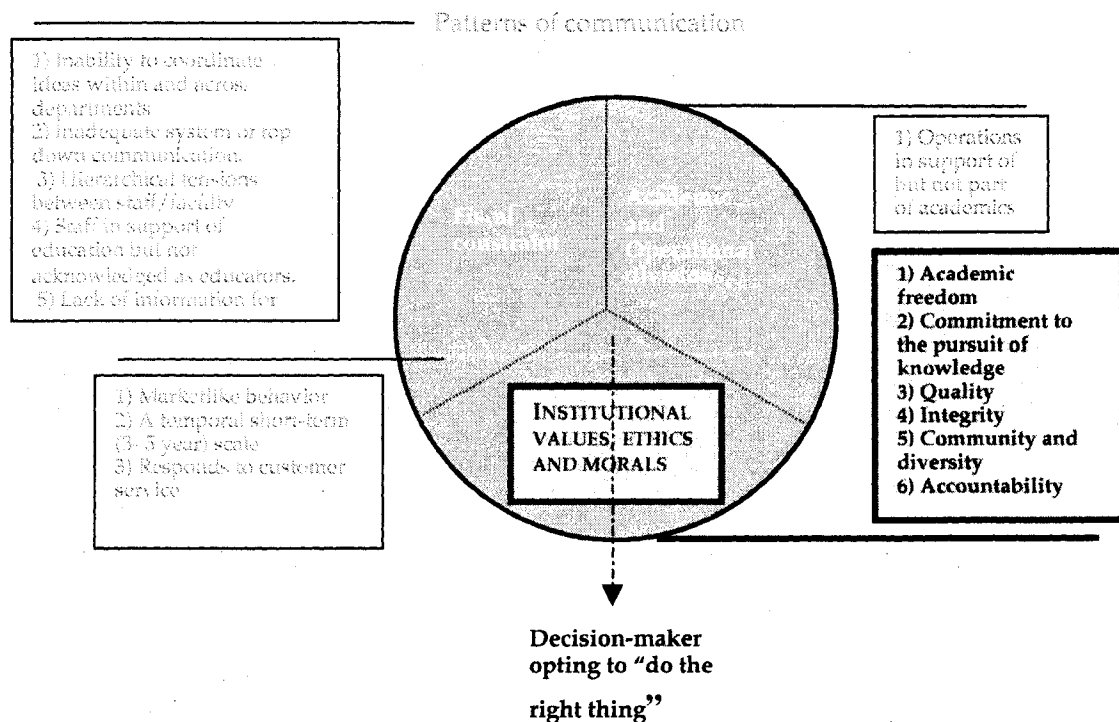


Figure 2: Decision-making processes: Institutional Values and Ethics

Values are core beliefs held by an individual about what is intrinsically desirable (Guy, 1990). Values can be defined as those things that we care about, things that matter to an individual or community, or goals and ideals to which we aspire (Weston, 2001). The values of Northern University as stated in the strategic plan are academic freedom, commitment to the pursuit of knowledge, quality, integrity, community and diversity, accountability, and engagement.

The strategic plan explains that:

Goals and strategies must be informed by a set of core values that affirm our best traditions and embody our aspirations for the future...These interdependent values influence how and what our students leave with, how knowledge is defined within and across disciplines, how faculty are appointed and supported, how resources

are obtained and allocated, and how we function as a community of teachers and learners (Northern University strategic plan, 2002).

Though stated in the strategic plan as values, these are in fact principles that the university has embraced to guide its actions. These principles do not in fact become values until acted upon when faced with a choice. The strategic plan recognizes the influence of these principles on educational outcomes. This is articulated in the statement, "these interdependent values influence how and what our students leave with...." Within this context a distinction is made between institutional values and educational values. The *institutional values* are what I refer to as principles, which are stated in the strategic plan that the university embraces as ideals by which to abide. Whereas the *educational values* are those which are reflected in the actions of the university.

Ethics can be interpreted as a way in which to think about, clarify, prioritize and potentially integrate values into actions. The same notion that applies to values that are acted upon versus those that are stated also applies to ethics. There are ethics that the university may embrace in principal and there are those that are reflected in actions. The application of ethics implies the more difficult and complex aspects of one's choices from which to determine right from wrong (Weston, 2001). Commonly, ethical theories propose moral principles for how we ought to treat people and/or the environment, as well as, what types of actions are morally permissible. An ethical theory cannot merely assert these principles, but ought to provide a formal justification for acting on them. Overall, the basis for a philosophical ethic strives to offer general moral principles backed by a thorough justification for their adoption and utilization in a variety of situations in which people might find themselves. Attention to the

ethos of higher education leads to a normative discussion of ethics, morals and values within the broader context of organizational structure and decision-making (Wilcox & Ebbs, 1992). The application of an ethical framework from which to make choices assists the decision-maker in considering the complexity in which decisions are made and actions are taken.

To connect the discussion on ethics back to marketlike behavior presented in the previous section, I refer to Freeman et al (1998). They write:

Much of the business language is oriented toward seeing a conflict between business and ethics. We routinely juxtapose profits with ethics, as if making an ethical decision costs profits. We sometimes qualify difficult choices that distribute harms and benefits to communities and employees as “business decisions,” signaling that business and ethics are not compatible (Freeman, Pierce, & Dodd, 1998, p. 340).

Freeman et al’s (1998) statement portrays the distinction that I interpreted as part of the participant’s justifications for claiming that certain decisions guided by sustainability principles could not be made. With that said, I never understood that the participants believed that at any point they were making unethical decisions. In the context of Northern University, what comes into question is how university values are reflected in their ethical framework and later interpreted by the decision-makers.

At the start of the research procedure, I proposed three categories to assist me in classifying the moral and ethical considerations that I anticipated would be taken into account in the decision-making process. I proposed the following categories:

- 1) The *anthropocentric perspective* advocates that all decisions are in the interest of humans and that nature is valued and viewed as a commodity

- 2) The *ecological perspective* upholds the importance of the value placed upon the entire natural system including biotic as well as abiotic organisms;
- 3) The *sustainability perspective* strives to reconcile and promote ecosystem health and human well-being in the context of society and over the long run.

I distinguished between these three categories in advance to be able to delineate the decision-makers responses as ethical positions that influence the decision-making process.

Although I anticipated that I would be able to categorize a participants' response, I deduced from the interview process that a participants' articulation of ethical considerations could not be easily identified with the categories that I had proposed. I do note, however, that perspectives portrayed in this section are most aligned with considerations that I termed anthropocentric. I did not expand on this category prior to collecting the data with enough depth to pursue a reasoned argument. Due to the overall vagueness of the participant responses regarding ethics, rather than present a line of reasoning that argues for a particular categorization of the ensuing comments, I present them under the broad category of ethics.

All of the participants that I interviewed suggested that when they made a decision, they were "doing what's right." While this may be reassuring for the administration, "doing what's right" does not specifically characterize the ethical and moral principles acted upon by the decision-maker. The participant responses have led me to believe that the decision-makers do not necessarily consider the moral or ethical implications beyond completing their immediate task.

Besides the purchasing employees who are required to abide by a standard code of ethics adopted from the National Association of Educational Buyers (NAEB), the others apply either personal ethics when appropriate or a professional code of ethics inherent within their workplace and position. None of the participants indicated that they were interested in harming anyone or having a negative impact on human-health, and to some degree, all of them expressed an interest in safeguarding the environment, however they had difficulty linking actions to impacts.

I begin this section with a brief explanation about the ethical framework of the university with a notable focus upon university values both institutional and educational. In my analysis of participant responses I concluded that the professional ethics overall correlate with the institutional values described in the academic strategic plan. I chose testimony from a selection of participants whose responses disclose the ethical framework as applied by the administrators, Purchasing Office, Dining Services and Waste Management. University administrators Mr. Kaufman, Chancellor Lesser, Dr. Clark and President Smith; Dining personnel Cathy and Bryan; Waste management personnel Mr. Martin, Nancy, Dana, and Bob. Of these participants I have yet to introduce Nancy, Bob and Dana. Nancy is a manager for housekeeping and has worked at Northern University for the past twenty-five years. Bob works for facilities and has worked for Northern University for forty-seven years. Both Bob and Nancy have worked their way up the managerial hierarchy within their respective departments. Dana is a student at Northern University who is majoring in environmental conservation and has been active with the recycling office for the past three years.

Ethical framework of the university

In the interview process, I asked Mr. Kaufman, assistant to the President, if there is a written ethical framework that Northern University employees are expected to defer to in everyday decisions similar to that proposed by the NAEB [National Association of Educational Buyers] for purchasing professionals. He responded:

I don't know of anything that is specifically written down but I think when we make a commitment to either teach or work at an institution like this, I think it's understood that whatever decisions we make, must be in the interest of the community, that are not self serving, that don't violate our responsibilities to insure that all members of the community are respected and rights are protected. But I am not sure that a definition any more than that is necessary because it would include the free expression of ideas and people who feel as if they can be here without feeling threatened or intimidated or harassed or any of those sorts of things. I think that would be really the essence of it.

Mr. Kaufman suggests that there is an implied ethical framework employed by university staff and faculty in the decision-making process. A professional commitment to the university leads to a commitment to make decisions that are in the best interest of the community. Though Mr. Kaufman is clear that there are implicit expectations that one acts with the interest of the university community in mind, what is not clear is how this is defined.

Similarly, speaking at the system's level, Chancellor Lesser acknowledges that there is not an explicit system wide document for ethical decision-making but rather an implicit set of ethical guidelines grounded in honesty, integrity and civility. Chancellor Lesser stated:

...words like moral and ethical, like the words religion and spirituality have taken on so many different meanings. I think that a university has a framework of values by which it operates. And at a macro level it is that we treat people honestly, that people have integrity, and

people have civility. Then you can go down to the various sectors of the institution and with more specificity translate that with what people ought to do. How they ought to act, how they ought to behave. I think very, very rarely do colleges and universities add up all of their values and policies and procedures and extrapolate from that sort of a moral or ethical framework but I think its possible. I think if you take a few key areas.

The administrators expressed an assumption that a set of ethical guidelines that embrace the universities values are applied in daily decisions. However, there is not a written ethical framework that is provided to each employee at the university that expresses this. The ethical framework suggested by Mr. Kaufman and Chancellor Lesser that embraces the free expression of ideas, ensures that all members of a community are respected and rights protected combined with honesty, integrity and civility are not in contradiction with sustainability principles however they do not necessarily lead to sustainable decisions.

In this next section, with the assistance of participant testimonies, I illustrate how university values influence the decision-making process.

President Smith explained her perception of the role of values within the university and how they are meant to influence decisions:

...the values are there first and what we say we are going to do is a response to those values. First comes the values and out of the values comes the vision and out of the vision comes the action.

Academic freedom is always the first one stated which means that our learning will be unhampered, by political pressure, by bias.

Engagement is one that says we are not only a public institution but also a land grant institution, which means that we serve the state. Public service is a mission equal to our mission to educate and our mission to do research. That is why engagement is there. And that value for example is played out in service learning, in internships in the application of research....all those things that make NU the kind of educational institution that it is.

I think that they are quite deep. In a real sense there is nothing in the goals and strategies document that is new. It is teased out of the

institution, both its deep traditions in the past and the contemporary needs that call on those traditions. It's not that all of a sudden we get some good ideas... there is no disconnect between the institution and its historic values.

Chancellor Lesser's position, notes that the very composition of the university bespeaks a value of the system:

At Northern University, take the whole sustainability project. The very fact that it's there speaks a value. Take the whole diversity and multi-culturalism set of projects... the very fact that it is there bespeaks a value. Take the whole set of procedures that has to do with proper behavior, sexual harassment policies and consensual relationship policies... add all those up. That bespeaks a value. Take the faculty constitution and by-laws. Take the faculty handbook. Take the student handbook and code of behavior. Take all of those things and add them up and you could extrapolate from them a set of values. They are there. But what we don't do because it seems a little nerdish to do it and maybe even quaint and old fashioned, is we don't extrapolate all those values and somehow articulate them in sort of a creed saying this is what we stand for. We don't do that but it could be done. In the old days, Presidents taught...sometimes as the freshman course and sometimes as the senior capstone course, a course in moral philosophy.

Chancellor Lesser's statement reveals the complex nature of a university and the values that the system upholds which guide the policies and actions of the university. What is not relayed is how those university values are weighted in the decision process and at what point in time those values surface.

In summary I present a quote from Dr. Clark:

Decisions have to be driven by what is the best avenue to ensure the highest quality, teaching, research and student life in this institution in the most cost effective way, all within the bounds of integrity and the law... etc, etc. In summary, how do we fulfill our mission and manage our resources in the very most prudent way.

Dr. Clark's statement summarizes the tension faced by university administrators routinely. They are constantly under pressure to uphold institutional values

while striving to ensure high quality education, teaching, research and student life within economic boundaries.

Educational values: Choice, convenience and non-precaution beyond regulatory compliance. Three values that are not stated in the strategic plan but appear to be upheld in many decisions within the university are: freedom of choice, convenience and non-precaution. I define 'non-precaution' as actions that have a negative impact upon ecological or human health. In this section, I illustrate the prevalence of these values and how they influence institutional decisions.

The next set of testimonies are from Cathy, the Dining Services Nutritionist; Fred a Dining Service manager; Mr. Jones the Director of Dining Services; Kelly an Assistant Director of Residential Life; and Mr. Kaufman the assistant to the President. These testimonies depict specific examples of the values that I refer to as freedom of choice, convenience and non-precaution. The data illustrates that decision-makers respond without question to the hidden values of choice and convenience.

Cathy reflects on how the evolution of Dining Services is primarily guided by student eating habits. In this instance she referred to the demand for fast and convenient food:

The whole thing about immediate... I want it now... I don't want to wait. That's a huge thing in terms of how we [Dining Services] do what we do. Getting around that. That's the trend in America. And that probably has a lot to do with the trends we have here in food service. They don't want to wait in lines. They don't want to have to wait. We have changed a lot of things to have services available on the web site for that fact. They don't want to wait in lines to get their meal plan... they want to get it on line. So that's a huge challenge and I think that that's how can you creatively get around.

In a somewhat frustrated voice, Cathy followed through with her thought about student demands:

The challenge or the nature of the beast... you can't please everybody... you can't please all of the customers. That's why we have so many choices... at least we try and communicate.

Fred supported Cathy's observation with this comment:

There is a big trend for delivery to get the products delivered right to them [students], to knock down the walls of inconvenience essentially to be able to have it...you know they want it... the trend is to eat lighter. The breakfast is going by the wayside... that people don't plan ahead of time to eat breakfast, what they want to do is grab something after their first class or after they have been up for a while so they don't back their schedule up.

He reiterates that the role of Dining Services is to provide a customer friendly, contemporary food service that is both vigilant of bottom line finances and raises revenue.

Mr. Jones explained that the financial incentive to respond to the needs of the customers is built into the RCM budget model in the form of a revenue tax. Revenue producing departments such as Dining Services are taxed to support the non-revenue departments. In this statement, Mr. Jones justified Dining Services' tendency to respond to student demand:

Let's face it, we are running a business, we are charged with covering our expenses, being able to put money away so that we can improve our services in later dates, put money away for reserves... we need to do this in an ethical way. We can't be "ripping people off" or whatever, we have to be honest and up-front. I guess I would say that I pride ourselves on being able to pass an audit with flying colors and that we have ethical business practices, accounting principles and standardized accounting principles and such.

As illustrated in the participant testimony, Dining Service's conduct is guided by marketlike behavior. What remains unresolved in this discussion, is whether the

values embedded in the marketlike behavior purported by Dining Services are on a collision course with the educational values of the institution?

Kelly from Residential Life, offers an alternative perspective. She claims that convenience is not the value but rather marketlike behavior is the conduit for the types of demands that Dining Services finds itself needing to recognize. Kelly maintains that unless disaster strikes, the demand for immediate satisfaction is going to override any implications those demands have on the environment. Her perspective is captured in this statement:

I think that its not convenience... but if we look at politics and we look at policy... if it's not an immediate screaming need, squeaky oil, grease kind of thing....if it's not an immediate need it gets pushed to the back burner, ok someday, maybe I think it's important, maybe I don't but...it isn't something that can get my attention right now...However, if there was some huge disaster... unfortunately there is no such thing as pro-activeness. If we were put in a situation where we had to react that's when you would see some people jumping and that's when we would see a whole bunch of people putting blame on other folks and why hasn't this had to happen until now.

Kelly purports that the university does not value pro-active behavior but rather responds best to crisis situations. She proposes that people become so bogged down in day to day activities that it's difficult to anticipate future issues and therefore value "precautionary" behavior. "Precautionary" measures that relate to ecological health and human health, beyond being in regulatory compliance do not appear to be a prominent value that weighs heavily in decisions at Northern University.

Mr. Martin is responsible for overseeing the Waste Management contracts for the university and asserts that a "precautionary" framework would be fiscally responsible as well as save money in the long-run. Responsible for overseeing the financial systems of Facilities Services Mr. Martin has been able to

institute preventative maintenance as a “precautionary” measure for avoiding large future repair costs. Mr. Martin explained:

The [physical] infrastructure is falling behind. We did a study four years ago saying as most universities have one hell of a back log to get done, wouldn't it be wise to spend preventative maintenance dollars and avoid the big repairs down the road... same story. But we are so dictated by reacting to problems rather than planning... so hell, if we could get a hundred thousand dollars a year in preventative maintenance money from SARC [Space Allocation Resource Committee] every year... you know... start the process... start engraining them ok... so the Vice President of Facilities is effective in that... he instituted Preventative Maintenance... it's the right thing to do... we can start building a program... part of it's new software that we are implementing... it will give us a tool to do the preventative maintenance work.

Omission of the “precautionary” principle in a decision process could have lead to an increase in maintenance costs of the physical infrastructure as well as a negative impact on human-health. Mr. Martin recognizes this impact as he recalls a situation in Printing Services in which human health was at risk on account of an air circulation problem with the large printing equipment. He noted:

So it hits you in a very small way right out here on a day to day thing. And we had a situation up at the printing and mail building that had to do with quality of air and that type of thing... just the circulation and issues like that. What was it doing to people? There were some issues and potentially some legal issues falling out of it... and why were we not more responsive to it. Why did we consider some of these things up front and now look at the potential cost of some of those issues. Technically I couldn't tell you what was right or wrong with it at the time. But you have issues and now potentially you have litigation going on that says gee... if we spent ten cents we could have saved five dollars.

In a university that supposedly values the health and well-being of its community members, there are contradictory examples recalled by the participants.

As meaning makers, the participants in unrelated conversations noted how the integration of sustainability principles would be a threat to the fundamental values of choice and convenience, as desired by the customer. Mr. Kaufman, assistant to the President, articulated an example of this:

Some of the areas where we could become more sustainable represent a certain degree of greater inconvenience for people. And I think that one of the stumbling blocks is the fact that we have a society now that essentially functions on instant gratification and convenience. I want to be able to leave my home and be in class five minutes and I don't want to have to do anything other than to drive right next to my building. And I don't care if you pave the entire campus, as long as there is sufficient parking for me to drive my own automobile to work and go to class. It's those kinds of things. I think it's balancing the convenience and the cost along with basically what is right in terms of protecting our environment for the long term.

In this statement Mr. Kaufman offered an explanation for his inability, as an administrator, to automatically integrate sustainability principles into all administrative decisions. The 'stumbling blocks' or rather obstacles that the administration faces are reflective of the values of the student population and the community at large. While there is a hint of sarcasm in his response, he speaks from personal experience in his tenure at Northern University. He asserts that at the administrative level, they must take into consideration the needs of the students and struggle with how to balance the values of the university which includes the protection of the local environment for the long term with the short term demands of the community. Mr. Kaufman also makes it a point to say that it is not feasible to have a value neutral university. He reflected:

I think it's impossible and that's not what learning is all about. My feeling is when the term value neutral occurs it's intended to mean that the university or the college is open to a whole host of values and that, except in terms of the standards to protect the ability for there to be free expression. The free study of ideas...that there are no values that impose threats upon that ability to have the open expression of ideas. That's really my sense of it. I think everything that we do and

everything that we say reflects a certain value and our actions in particular do. And in my mind there is no such thing as a value neutral institution.

Mr. Kaufman acknowledges that all university statements and actions reflect specific values thus it is not possible to have a value-neutral institution. In his comment, the "free study of ideas", Mr. Kaufman references the very fundamental value of the university, academic freedom. This is different from freedom of choice.

Mr. Kaufman emphasized that decisions at the administrative level must consider what is right for the institution and the community rather than a particular group:

Well, again I think we make moral judgements and value statements anytime that we make a decision. I think for me it's more weighing in at every point in decision-making, What is right for the institution? What is right for the community? Not what serves this group best or that group best or our own personal interest's best but what is really best overall for the institution. It becomes a question of doing intuitively what is right as opposed to anything else.

Freedom of choice, convenience and non-precaution emerge as implicit values within the framework of a market economy. In the context of this study, I reference these as *educational values* rather than *institutional values* because they are not formally endorsed in writing in the strategic plan. It is my belief that these *educational values* which are reflected in university actions have taken the form of rights. These choices range from access to product availability to parking spaces. I would argue that the actions of the institution as illustrated in participant testimony, has reinforced this notion of freedom of choice and convenience as rights, making it difficult for the administration to reposition itself on certain issues that would appear to constrain these rights. I am not suggesting that the pathway to a sustainable university calls upon the limitation

of rights, however this is important to take into consideration when envisioning the culture of a sustainable institution. The application of a sustainability framework to the decision-making process adds a level of complexity to the decision process, which questions the impact of those choices on the broader ecological and human communities.

The impact of the marketlike behavior on institutional values. Nancy, from housekeeping, reflected on the changes she has experienced in her twenty-five years at Northern University. She believes that economic constraints have had a negative impact on the behavior of university personnel:

I think what evades us is that a lot of times it comes down to money. It depends... at one point recycling paper and cardboard was important around here. Everyone was supportive of it. They were getting a lot of funding for it; they were getting a lot of money in it. And as soon as the price went down sometimes if it got left out in the rain it didn't matter so much. Or they would come in and they would find occasionally cardboard thrown in the garbage dumpster.

One of the trade-offs of making strictly financial decisions within Housekeeping is the threat to the human-health and well-being of the housekeepers. The housekeeping staff is characterized by a gender ratio of three women to one man. Nancy has worked her way up the hierarchy in Housekeeping Services, and recalled an experience that she had early on in her career at Northern University:

I can remember when I first was here ... my colleague and I were stripping the floor in the gym with this solvent type cleaner and all of a sudden I didn't have any soles left on my shoes. We used some really strong stuff over the years. But we just did it... you didn't think of all asbestos back then, you just did what you needed to do. I think of it today but not back then. We never wore rubber gloves. We never WORE rubber gloves. But I wouldn't DREAM of doing it without it now. What we use now is water based instead of the other.

When posed with the question of whether she thinks that there is a moral framework that is applied by the university to the decision making process, Nancy takes her time to contemplate a response. She affirmed:

I guess I don't always. I think there are some people who do and there are some people who actually try but when they are mandated to implement a program and come up with money or something else, they get way laid. I don't know. I guess because I have been here so long when I first came to the university, I worked in this huge family. The president cared about everyone. The president had meetings with the housekeepers. You know, would come in at night to see the housekeepers. Everyone seemed to really, really care on a personal level. Now if someone dies on our staff or a spouse, they send flowers but now it's so much more *businessy* and eventually what happens is that dedication that people ... the loyalty they had. The housekeepers, they go way out of their way to do things for people, not personal things... to assure that there building is clean. I wanted my clients to be comfortable and to be the best. But that's gone now.. you don't need this half a position because... you know... I don't think that is just here I think that is in so many businesses. I hear it from my husband, from my friends, the places that they work... the dedication and loyalty to those companies is just not there. I think that that is shown here.

The participants reiterated that marketlike behavior dominates the decision-making process. Nancy implies that a market-based system is so focused upon bottom line economics that the staff at the lower levels of the hierarchy are seen as expenditures as opposed to valued members of the community who have the right to a healthy work environment.

Summary of institutional values as ethical moderators. The examples that have emerged from the data illustrate how the university struggles to maintain and respect a multitude of community values. The university is a unique organization in that all actions and behaviors reflected by the university bespeak a value and therefore an educational message. Some of these values such as academic freedom and accountability are accepted in written form as university principles by which to abide and others such as freedom of choice and

convenience are assumed in its actions. Those values and educational messages shaped the face and identity of the university. It is not clear from the testimony how the university responds when an action either by or within the university is not aligned with the institutional values of academic freedom, commitment to the pursuit of knowledge, quality, integrity, community and diversity and accountability. In the next section I focus specifically on accountability because that was the value most prominently mentioned in the context of discussing decision-making and sustainability.

Accountability

In the Northern University Academic Strategic Plan accountability has been identified as a core principle of the university and central to the academic enterprise. To reiterate, accountability is not a value until it is enacted in the face of a choice. The manner in which accountability is acted upon shapes how the university (or decision-makers within the institution) defines accountability as a value. In the context of the operational units Purchasing, Waste Management, and Dining Services, accountability surfaced as a fundamental principle that influences decisions systematically. For this reason I separated accountability from the broader discussion of institutional values. The Northern University strategic plan states:

All members of the university community are accountable to each other and to appropriate external audiences for their decisions and contributions. To this end, we will make our work public and expose our actions to review, evaluation, and healthy critique (2002)

There is an inherent challenge in the action of isolating accountability within the context of sustainability. This is due to the belief held by some people that in order to be held accountable to the environment, the environment has to be able to have its own voice. Whereas others state that we can and ought to be held accountable for our actions that are detrimental to the natural environment. This interpretation considers the biosphere as a whole and the large ecosystems which establish it as a worth of moral consideration (Elliot, 1991). The ecological systems are valued insofar as they contribute to the maintenance of the significant whole to which they belong (Elliot, 1991). Thomas Berry emphasizes the need for people to find a deeper meaning in the relationship between the human community and the earth process (Berry, 1988). Berry believes that it is

the breakdown of this relationship that has led to human degradation of the natural environment. He believes that it is humans who are responsible for causing the extinction of life on earth at a widespread scale (Berry, 1988). In the context of the discussion on accountability, I believe that if we do not consider it our duty to recognize the impacts of our actions on the natural environment, life as we know it cannot be sustained.

In the context of a decision-making process the notion of accountability raises many questions: Who is the university accountable to? What regulations must the university comply with? Who does an individual report to? Who are the students accountable to? Are university personnel accountable for the amount of water and electricity they consume? What does it mean for a university to be held accountable to the environment? What would happen if there were no accountability to the environment or public health, such as compliance regulations established at the state and federal levels, would the university consider environmental impact as a criterion by which to make decisions?

The significance of these findings demonstrates how accountability as a value can have a significant impact on the decision-making process within an organization. Because accountability can be interpreted in a variety of ways, dependent upon the situation, the applied definition can become a definitive factor in the decision scenario. Throughout the interviews accountability was spoken of in terms of fiscal responsibility, legal enforcement, financial audits, final reports, regulatory compliance and/or hierarchical reporting lines. In addition, the university is accountable for student's tuition, to the Board of Trustees, legislators, and alumni.

In this section, I highlight a variety of interpretations of accountability that lead to the question of what definition of accountability enables a decision guided by sustainability. The participant testimonies that illustrate varied interpretations of accountability are: Dana a student manager in the Recycling Office, Bob a Facilities Services manager, Mr. Martin the Director of the Facilities Services - Business Service Center, Dr. Clark the Vice President of Finance and Administration, Nancy a supervisor of Housekeeping, Bryan a Dining Services staff member and Chancellor Lesser.

Financial accountability. Dana, a student supervisor for the Recycling Office on campus, and Bob, a supervisor within Facilities Services, both of whom are involved with the waste management system at Northern University, offer an example of financial accountability. Dana strongly believes that accountability for waste production must be placed upon the producer. She shared her beliefs that people tend to respond more seriously to cost increases than to ethical reasoning:

I think if the cost is put on people for landfills and pollution then they wouldn't be willing to pay for it. When the costs are borne by you... whether it's like health and monetary costs... it makes people more aware of it.

She contends that accountability should be delineated by financial incentives.

Bob, Facilities Services manager, expressed a similar philosophy:

You put the garbage out and it disappears. This is at an age that if people are going to start coming up ... you know young adults, going to get married, going to have a family ... if they are going to adopt a more sensitive life style it seems a big part of our whole educational process would be to impart that in them.

If we were to charge the departments for the pounds of stuff that was to go into the dumpsters you would see some operational changes. I think this would help but the market on the recyclables has to go up or

it's cheaper to take it to the landfills... so why have an incentive to have people not put it in the bucket that goes to the landfill.

Now that we are into RCM he [Mr. Martin] is looking at passing that back on to the campus... which is good. That may give people some religion to pay attention to what the hell they are throwing out... that may be good. RCM in that case may be good. Then we allocate... that goes into the square foot charge. If the rubbish removal doubles than part of your charge is going to double. And that's going to get their attention.

The RCM budget model incorporates the waste management charge into the square foot departmental cost eliminating a financial incentive to recycle. At Northern University, the decision to pay the extra cost of recycling mixed containers and other costly items is always present. Dana and Bob maintain that waste reduction would be the most logical way to reduce the costs and that could be done by holding the community members responsible for the amount of waste produced.

Nancy, a supervisor of Housekeeping Services claims that in the case of illegal dumping, in which individuals from on and off-campus place non-Northern University trash in Northern University dumpsters, there is not thorough enforcement of the regulations. Thus a lack of accountability by Northern University administrators leads to incurred expenses for the university:

Since so many towns and cities have bag and tag... a lot of people that work on campus or go through town decide to put it in the dumpsters. That's why you'll see the little signs that say they could be prosecuted. That's why you'll see a lot of the academic building dumpsters with locks on them. But the upkeep of them is not always optimal or where they should be. But the residential life dumpsters do not have locks on them because the kids need to be able to go in and out and throw their rubbish away. Often early in the morning when I am out there around I'll see somebody come along in a truck or a car and boop, in goes their rubbish. We always report that and try to get a license plate number. Vice versa at the end of the school year, a lot of people come around with their trucks and take stuff out of the dumpsters.

Nancy's example illustrates little to no commitment on the part of the university for holding an individual accountable for the production of waste. She has observed that others outside of the university community take advantage of this system. Although there are university regulations for illegal disposal of refuse on university property, some individuals have learned how to avoid the consequences of such an action. I cannot deduce from the information gathered for this study if this is an unavoidable situation.

At Northern University a mechanism for accountability in relation to energy use, water use and waste management, is currently relinquished for the sake of a simplistic budget model. Dr. Clark explained:

It is absolutely true that the way most units pay for utilities and waste disposal is tied to the number of square feet they occupy and not to the amount of the resource they use. One reason we don't charge by usage is that it would hugely complicate the model and one of our principles was simplicity where possible. But, the other (even more pragmatic) reason is that most of our buildings are not separately metered, hence we do not have the data we would need. Overall, units appreciate that the net square foot charge they pay will increase more if we use more energy and so there is at least that much incentive not to be wasteful.

Dr. Clark emphasizes the importance of simplicity and implies that a mechanism of accountability can become too complex and burdensome for the system. There are two underlying interpretations of accountability in this example: 1) the administration considers itself accountable to the departments, and 2) a mechanism of financial accountability is assumed in the framework of the budget model. Dr. Clark presented another interpretation of accountability, as it relates to institutional responsibility:

I guess I think that the university has no more and no less responsibility than others employers be they large or small, or individual homeowners on those dimensions. I mean I sometimes feel as if I am reacting a little bit to the fact that the university is in Summit and the relations that we have with Summit. Summit thinks that the

university should be doing X and Y and Z, even though they don't look in the mirror...

... Accountability to me implies some form of responsibility and then some entity that has authority over us to assure itself that we have responsibility or punish us ... when it comes to the law... of course. But I don't see a mechanism out there or some entity that would hold us accountable. Do you see what I mean? Outside of the fact that we are accountable to obey the law and to spend our resources effectively, prudently and to obey our mission.

Mr. Martin, Director of the Facilities Services-Business Services Center, reflected upon the implications of accountability within the university:

And there is a need that says wait a minute... today's world is different. To change this culture in facilities... not only to recognize that there is accountability in terms of dollar and cents but the accountability to the community to the environment.... All of those types of things are as important to the dollar because the university ... a public institution in a fish bowl everyday... we do it wrong with those considerations we will spend more money than we ever thought we would to try and fix it.

Mr. Martin references the assumption that university decisions tend to be made within a short-term framework as noted within the discussion on fiscal constraint, and that ultimately some of these decisions could be more costly. He acknowledged that for the university to broaden its interpretation of accountability in areas such as waste management, energy or water use, some benchmarks potentially in the form of fiscal incentives needed to be established. He claimed:

...if you are not going to measure something than you are never going to be held accountable to it. So how do you measure it, do you start with some benchmark, whatever which one it is or whatever combination it is... that is less important than the momentum that is created by crafting those benchmarks.

Mr. Martin's point accentuates that the university ought to have standards by which to judge certain behavior. In the case of Bob and Dana's example, this

would translate into a designated amount of waste that could be generated per person, or an amount of electricity used per department.

Jim, manager of Central Receiving within Facilities Services, responds best to the role of personal accountability. He stated, "If I make the wrong call, it's my butt on the line?" In his comments, Jim focused on the unstated notion of professional accountability as an employee of Northern University. He recognizes that his actions are a direct reflection upon himself and thus his own sense of personal integrity holds him accountable for his actions.

The scale of accountability that could be engaged by the integration of sustainability principles would extend from the individual to the community at the local, regional, national, and global levels. This extended definition of accountability could be applied to many campus wide systems such as Transportation, Procurement, Landscaping, Building Design and Construction and Food Services.

Though Dining Services claims the value of sustainability in its mission, there is little evidence of a commitment to a campus based sustainable food system in their actions. Bryan explained why Dining Services has not more readily adapted a campus based sustainable food system in practice:

... my perception is the department is more interested in... what's the bottom line and NOT what are your practices internally on producing this and where does it come from... it's show me the bottom line. What kind of bottom line are you going to show me when I order a hundred cases of x, y, z... I don't care what you do with the motor oil from the truck that gets it up here. That kind of stuff. I think you take it for granted that that's how somebody else runs their business.

Bryan notes that Dining Services is expected to meet the bottom line established by the budget process and provide meals to the customers in a satisfactory manner. Dining Services does not believe that they are responsible for any actions related to their food sources prior to delivery to Northern University. Moreover, there are no stipulations determined by the university that claims Dining Services needs to take into account the actions of a vendor.

Chancellor Lesser's statement supports what Bryan claimed to be impossible. From the perspective of an administrator, Chancellor Lesser notes that it is essential for the institution to draw some very clear and crisp lines of accountability. In his view, a sustainable food system would be established through ethical reasoning by a system that holds departments accountable for decisions that reach beyond the walls of the institution:

Somewhere there is a line that you have to draw and say the university or the university system cannot be held accountable for this and these kinds of actions....It is wholly appropriate to hold an institution or a system accountable for a certain set of actions when the university or the system controls the majority of the variables leading to that action or the factors leading to that action. When it doesn't control a majority of those variables and only a few, than I think...you could hold it less accountable.

We try in a value-defined environment to help our students understand what good behavior is and what social responsibilities are but we can't be guaranteeing the results of those efforts to the extent that we can be held accountable if they are not good ones.

Chancellor Lesser contends that boundaries of accountability need to be established by and for the university otherwise, the university becomes responsible for actions of others that work outside of the institutional framework. The message from the administrative level that supports

Chancellor Lesser's statement is most precisely reflected in the strategic plan and reiterated by President Smith:

Accountability...you know everybody in the university reports to somebody. There is an accountability structure that is quite careful. People are held accountable for levels of productivity, for conduct, for a whole range of things. It's kind of in the structure of the institution that people are accountable.

Summary of accountability

The findings illustrate that in general, the term accountability is narrowly defined as a university principle. I would argue that the interpretation and therefore the definition of accountability is one of the pivotal differences between the manner in which decisions are currently made and those which are guided by sustainability principles. There are not many institutional examples to illustrate this point. Nonetheless, one institutional example is Northern University's recent switch from 30% post consumer to 80% post consumer and 100% chlorine free copy paper. The university administrators approved the increase in cost to the university community recognizing that the recommended paper pollutes less in the bleaching process and requires a smaller amount of virgin fiber. The manner in which accountability is currently defined does not hold the university accountable for its impact on ecological systems or human health beyond that of compliance.

In support of the behavior currently undertaken by the university community, Freeman et al (1998) offers one explanation for the role of accountability within a market system:

We almost never think about the environment as central to the main metaphors of business, its strategic and people management systems, unless, of course, there is some regulation that constrains business strategy, a mess to be cleaned up or a public issue that pits executives

against environmentalists. Historically, business people have been neither encouraged nor discouraged to get involved with environmental concerns. Our models and theories of business have traditionally been simply silent on the subject of the environment (p.340).

As universities continue to adopt corporate management practices, other conditions such as those emphasized by Freeman et al (1998) are also imitated.

Conclusion of institutional values, ethics and morals

The empirical data leads me to conclude that the institution enables decision-makers to justify unethical decisions claiming fiscal constraint to be the primary criteria superseding moral and ethical implications that relate to ecological health and human –health beyond regulatory compliance. Participant testimony illustrates that there are certain values that guide decisions within each operational unit. What I refer to as the *educational values* of choice, convenience and non-precaution have not been formally endorsed by the university administration in writing, but manage to have an essential role in the decision-making process.

Organizational behavior studies suggest that policies and organizational structure of an institution have a powerful effect on the behavior of members of an organization. Meanwhile other literature raises the question of “why blame the organization? (Pfeiffer, 1995).” Pfeiffer (1995) asserts that being held accountable is a form of blame. He writes:

We level blame in the moral sense when something has gone wrong and we are offended by some untoward action, act of omission, ongoing practice, intent, belief, feeling, or state of affairs. To attribute blame is to assert that some party or parties is morally responsible for some untoward matter, and deserves to be held accountable, or responsible. Indeed, attributing blame may itself be a means of holding one accountable (Pfeiffer,1995, p.2).

Often, what is left unspoken, the absence of a procedure within an institution, is more effective at influencing behavior than what is explicitly stated. For example, if the university does not have a policy or value statement on waste reduction and prevention then the behavior that tends to follow in our consumer society is that of unlimited waste production. This is not meant to imply that the production of waste is intentional, rather such behavior becomes reflective of organizational norms.

The concept of collective inaction presents difficulties for the theories of accountability. This is especially true in the case of institution-defining policies if those policies have neglected the humanitarian and ecological goals of the institution. Within the walls of an institution of higher education, an individual may influence a policy making decision yet that individual is not usually held wholly accountable for the final decision or rewarded for considering that value. The most common case is that people feel no responsibility at all as a member of an institution or group and fail to do anything to solve the problem (May, 1992). The inaction of an individual or a group should not necessarily excuse that person or people from having a sense of responsibility.

May (1992) emphasizes though that it is not the institution alone that shapes the values of its members. Rather it is the individuals who are operating through a mixture of formal and informal structures that influence their own as well as their colleagues (May, 1992). In summary, May's theory makes it difficult for individuals to escape accountability since responsibility within groups must be shared and individuals generally are members of groups and institutions.

In summary, Bok (2003) in his exploration of the impact of commercialization on higher education, explains some of the behavior illustrated by the participants. He notes:

If there is an intellectual confusion in the academy that encourages commercialization, it is a confusion over means rather than ends. To keep profit-seeking within reasonable bounds, a university must have a clear sense of the values needed to pursue its goals with a high degree of quality and integrity. When the values become blurred and begin to lose their hold, the urge to make money quickly spreads throughout the institution (Bok, p.6, 2003).

Bok's (2003) statement succinctly summarizes the challenges faced by the ever-increasing application of marketlike behavior on higher education, and how intentionally or unintentionally sustainability principles are not prioritized.

Academic and operational divisions

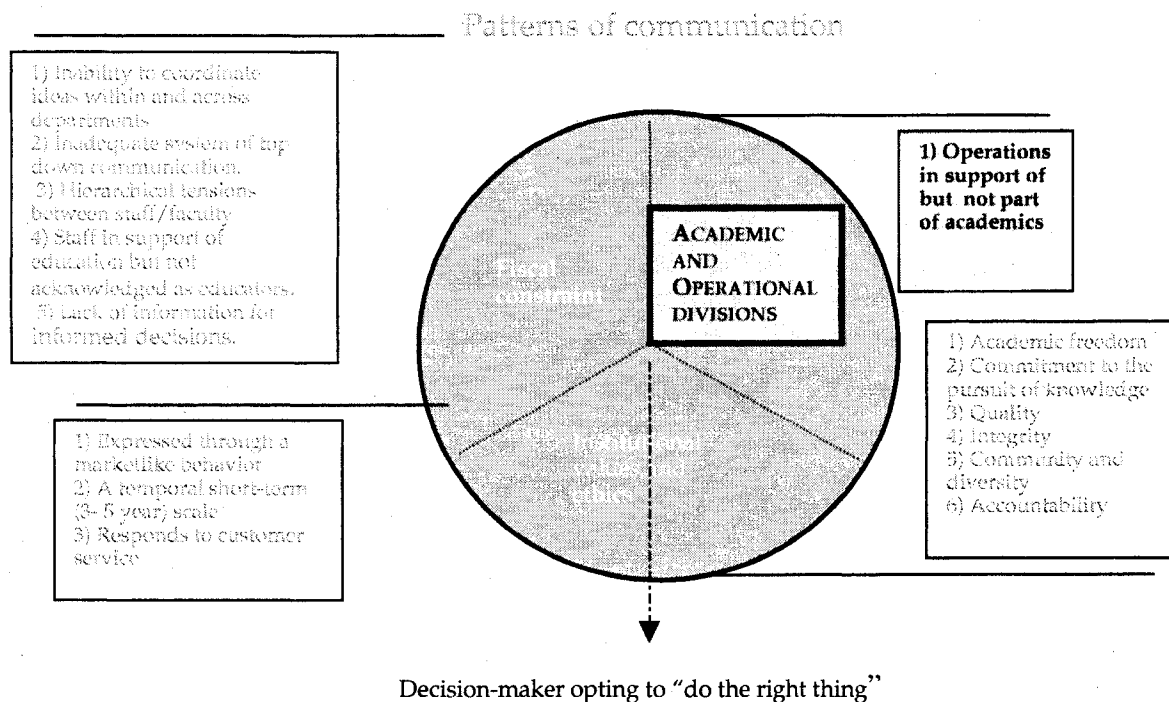


Figure 3: Decision-making framework at Northern University – Academics and operations

The Academic Strategic plan states that the university categorically distinguishes between the academic and the operational functions of the university. Though the strategic plan indicates that the operational services hold educational value for the university, this has not been explicitly interpreted through the vertical system of communication within the university. The strategic plan verifies that operations staff is responsible for supporting the academic mission through on-going maintenance of university infrastructure while the academics are responsible for teaching and learning. President Smith, Dr. Clark, Vice President of Finance and Administration, Mike, a Dining Services Manager, and Andrew, Director of Procurement for Dining Services, each

express their interpretation of the fundamental difference between the role of academics and operations at the university.

I begin with an excerpt from President Smith:

When those [academics and operations] seem not to be headed in the right direction, it probably means that there is not clarity in the institutional mission and that there is not clarity, crispness of vision because if there were the academic goals and the operational goals would be totally compatible. Both in service of some higher goals.

President Smith suggested that if academics and operations are not headed in the same direction the President of the University is responsible for clarifying matters:

At that level, that is the President's responsibility. But there are other places in the institution where you find unit goals, conflicting or at least rubbing against each other. You can find it within the same college, two departments that are not serving the same purposes and than it is the Dean's problem. You reference an example where the units that you are talking about report to different Vice President's, and that is why the resolution is the President's problem.

Though the Academic Strategic Plan states the distinction between the academic and operational functions within the university, President Smith comments on the question of who is responsible for educating the students:

Well, do they [non-academic staff] see themselves as educators? They surely see themselves in support of the education of students... the grounds people understand that our ability to recruit is dependent upon the work that they do. Our ability to educate students depends on them [non-academic staff] doing their job well. All you have to do is go talk to them... talk to the housekeepers. They tell you that the work that they do facilitates learning. They won't use that language but it's really important. You and I see that but they do too.

And when I talk to our staff across many divisions, I say we are part of something very important. Socially very important. We work for an institution that accomplishes, that has a higher burden than almost any other does, in the nation at this time. And they are important parts of that. I think they do understand.

On the high level, all of those things I have said are true, but what makes it hard not just for sustainability but to implement many things

that we have here. So I think those expectations are clear and that those departments understand that when they are able to find those ways to make sort of higher level connection... it's all the better. It is true that their very first and foremost responsibility is high quality, cost effective, customer friendly service.

Similarly, Dr. Clark, who oversees the non-academic components of the university, perceives the auxiliary units in support of the academic mission but not necessarily responsible for upholding academic values. In commenting on the role of these departments on campus she reiterated that view:

The auxiliary operations like housing and dining and the recreation center... first and foremost they need to provide high quality, cost effective, customer friendly service to students in maintenance to their life outside of the classroom. To the extent that they can provide teachable moments and linkages to the academic program in their own ways they even better serve the institution.

The viewpoints expressed by President Smith and Dr. Clark appear to be the predominant perspective expressed by staff and administrators that I interviewed. Andrew concurs with this perspective. He notes:

We looked at parts of the strategic plan that appear to be relevant to us... I mean a lot of it is very academic but we serve and have a role on this campus to support this campus.

Mr. Jones, Director of Dining Services acknowledged that learning takes place via the choices offered in the Dining Halls. Mr. Jones indicated that Dining Services has an opportunity to teach through their menus and the food they serve:

We can teach through our menus and through some of the resources that we have available. Whether once again, whether the student chooses to ... and it isn't forced on them. And I think at times we do some educational pieces... and sometimes it's even in the sustainable area where we put table tents out and those kinds of things...you know... I think that our organization, the dining area is more of a ... kind of the social conduit for the campus... I am sure there's a tremendous amount of interaction within the academic perspective that we are not even involved with ... it's a place for students to congregate and gather and talk amongst themselves. We provide that.

Though Mr. Jones acknowledges that students learn in the Dining Halls through non-formal techniques such as menus and table tents he emphasizes that the student "chooses" what to learn rather than acknowledging that students learn from everything that surrounds them.

Likewise, Mike, a manager for Dining Services, does not see himself or his colleagues from Dining Services as educators for the university. He, like the others, portrayed himself as a businessman who was hired by the university to run a fiscally responsible business that brings in revenue and responds to the customer. When queried about what the students learn in the Dining Halls, Mike replied:

... probably an experience that they are never going to have the rest of their life. Their own refrigerator is not going to have as much products as we give them with the variety ... what those kids have up there right now, they'll never see again. It's like going to a buffet every single meal, every single night... it's unlimited, as much as you want. Are we sending out the right message? That doesn't exist... that's not what really exists out there. I think we are better off with a declining balance type of system where it actually has a value. That three scoops of eggs that you took cost you a little bit more than someone else one scoop of eggs. When they throw it out at the end they think... "I bought it. My parent's paid for that meal. I can eat whatever I want, I can waste whatever I want."

That's like saying, this is my land, so I can contaminate the soil. You have no right to do that to the earth, just because you said you bought it to take it and throw it back in the trash again. You just don't get it if they are thinking that way. Unlimited as much as you can eat does not send the right message to these students.

These examples illustrate the assumed division between academics and operations. The pattern begins at the top of the hierarchical system and is reflected by those at lower levels. This is one of the fundamental frameworks and values that sets limits for the decision-making process at Northern

University. Within the current paradigm, most staff are not viewed as educators thus their actions are not perceived to have educational value.

Summary of Academics and Operations

The recognition of the inherent educational values within actions of university administrators and subsequent departments is frequently referred to as the hidden curriculum. Bok (2003) writes:

Intentionally or not, the actions and policies of campus officials carry messages to the university community about which values truly count and which are expendable. At times, these messages can be more powerful than any formal classroom lecture in setting examples that show what the institution truly stands for and what principles really matter (p.172).

The decision-making processes within Dining Services, Purchasing and Waste Management, upon which I focused for this study each carry educational messages to the broader community. Within the current organizational structure, academics are assumed to be the bearer of educational values while operations are perceived as merely supporting the task of educating. What is not currently incorporated into the decision-making process at Northern University is the notion articulated by Bok (2003), that “not all education takes place in the classroom” (p.172). If one accepts the fact that university actions have an educational impact on the students than the messages being portrayed indubitably reflect the framework of marketlike behavior.

Patterns of communication

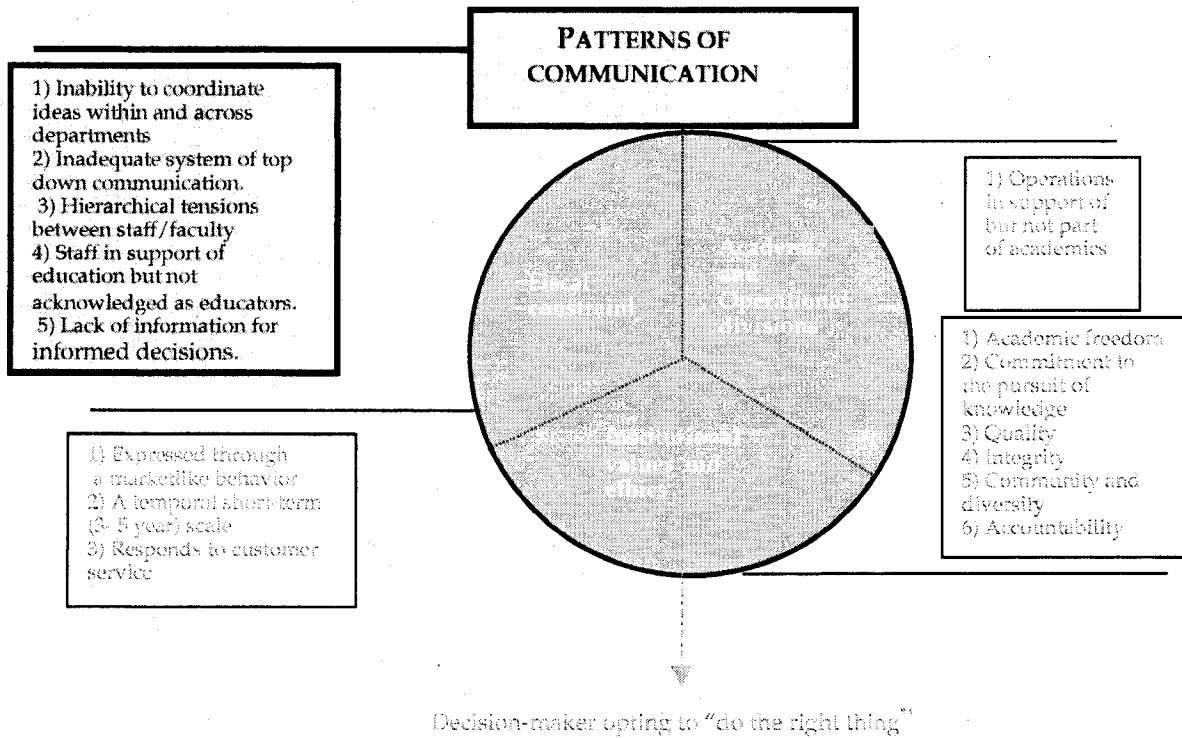


Figure 4: Decision-making framework – Patterns of communication

The outcome of a decision-making process within an organization is not only a direct reflection of the organizational values, rituals, political priorities, and desires but also of its system of communication. The decision parameters are further influenced by the manner in which knowledge is transmitted, power is structured, and relationships are built. For the purpose of this discussion, I refer to this as *patterns of communication*. As illustrated in Figure 4, I have intentionally placed the *patterns of communication* outside of the decision framework. My reasoning for this is that these patterns of communication did not emerge as criterion but rather indicative of the process in which criterion was either upheld or integrated into the decision-making process.

Mumby (1998) writes:

...the communication process serves as an information conduit – the better the organization's communication network, the more accurate the transmission of information and hence the better the decision-making process (p.1).

Guy (1990) extends this notion in her statement:

Communication and discussion rest on the tacit premise that each person believes in the rationality of the others. Otherwise there would be no point to the exchange (p.33).

Simon (1997) defines communication within an organization as, "any process whereby decisional premises are transmitted from one member of an organization to another" (p.208). He emphasizes that there can be no organization without communication, for there would be no opportunity for the group to thereby influence the individual (Simon, 1997). Simon (1997) writes:

Not only is communication absolutely essential to organization, but the availability of particular techniques of communication will in large part determine the way in which decision-making functions can and should be distributed throughout the organization (p.208).

Simon (1997) claims that communication is a two-way process that occurs upward, downward, and laterally throughout the organization. This two-way process is responsible for: 1) the transmittal of information to a decisional center for orders, information and advice, and 2) the transmittal of the final decisions from the center to other areas of the organization (Simon, 1997).

There are two distinct forms of communication within an organization referred to as the formal and the informal systems. These systems are responsible for transmitting information throughout the organizational structure. The formal system involves channels of communication that have been deliberately established. Examples of this include oral communications (ie. spoken word), and what is referred to as the paper flow (ie. media, memos,

letters, reports). The formal system is complimented by an informal system, which is built upon social relationships. Regardless of the complexity or intention of a formal system, an informal system will always exist. This is primarily based in friendships and colleague acquaintances. An inherent and at times challenging aspect of the informal communication system is when individuals behavior is oriented not only towards the goals of the institution but also their own personal ones, which may not necessarily be consistent (Simon, 1997).

Building on Simon's (1967) theory of decision-making, Tompkins and Cheney (1983) claim that:

- Decision-making is essential to organizational functioning
- Communication and decision-making are inseparable
- The examination of the decision-making process provides a means of tapping the mutual influences of people and organizations
- The decision provides a finite unit for analysis (p.124)

Tompkins and Cheney (1983) claim that decisional premises are communicated to members of the organization through the organization. The individual may abide by these premises or decide to modify them. The organization responds to such decisions either favorably or unfavorably dependent upon organizational interests (Tompkins & Cheney, 1983).

In this section I shift the focus from the decision-making model and criteria to the individual behavior influenced by the organizational structure that influences how decisions are made. For the purpose of this discussion, I have grouped this empirical data into what I have labeled patterns of communication.

I identified these patterns of communication from participant testimony to determine how the communication system influences decision-making at Northern University.

A predominant comment by the participants not within the administration emphasized that the administrators have a tendency to assume that the vertical line of command patterned by the organizational structure functions. However, contradictions in interview stories from the administrative level as compared with the staff level illustrated otherwise.

As I interviewed a cross section of people within the same department and across the administrative levels to the staff positions, I was able to identify contradictory responses between participants. More specifically, I observed that Northern University-staff present a different perspective of the communication system than the administration. Examples include contradictions in references to regulations and the strategic plan that were never transmitted beyond the director level to assumptions about university priorities.

Supported by Simon's (1997) theory of formal and informal channels of communication, many issues such as policies, updates, budget decisions and politics need to be communicated across divisions and within departments. Organizations have come to rely upon formal systems such as electronic correspondence, websites, campus newspaper, radio and telecommunications. Despite these sophisticated mechanisms, I observed that the communication system is fragmented.

In the interview process I did not explicitly inquire about the lines of communication. I asked questions such as:

- How are the core values stated in the strategic plan implemented and internalized by all factions of the campus?
- What type of research is currently conducted at Northern University that would help advance your mission in Dining Services? Waste management? Purchasing?
- Is a university wide code of ethics applied to the entire university system Purchasing, Waste management and Dining services?
- Are the values stated by Northern University's strategic plan meant to be values reflected by the university in its actions/decisions and by all personnel?
- How do the auxiliaries reflect the values in the strategic plan?

To illustrate the challenge in communication faced by the personnel within the university, I highlight testimony from within each of the three operational divisions and the administrators. Dr. Clark, Vice President of Finance and Administration and President Smith represent the administrators who most concisely verbalize the patterns of communication. The other testimony is the staff working with the Waste Management system on campus Claudia, Mr. Lee and Kelly; Jim representing Purchasing practices on campus in his role in Central Receiving; and Mike, the manager of one of the Dining Halls on campus. Claudia has worked at Northern University for fifteen years and currently holds the position of building manager for the student union. Mr. Lee is the Director of Environmental Health and Safety and responsible for managing hazardous waste disposal on campus. Kelly, assistant director of Residential Life, oversees

students in the Residence Halls. Jim manages Central Receiving and oversees procurement for the Facilities Department.

Throughout the interview process, the eight participants from the administrative level indicated that the hierarchical system was responsible for the movement of information from one level to another and across departments. One frequently referenced example was the role of the university mission statement and the academic strategic plan. The comments implied that these two documents provided a framework for university personnel to make decisions. The administrators provided both a vision and a realistic assessment of how the values stated in these documents manifest themselves throughout the university.

Dr. Clark responded:

I think very clearly they [university values] are intended to guide everyone involved with decision-making in the institution; and remember that at least in this era of Northern University, this is the first comprehensive academic strategic plan that we have had. Therefore there still are things to be done to institutionalize the values, there are still opportunities to ensure that those values statements in the plan find their way into other unit base plans, into training, into various other ways that people might as they become part of Northern University, understand what is expected and what the values are.

Dr. Clark continues by emphasizing the role that the strategic plan plays in guiding the goals and objectives of the smaller units as well. In respect to the discussion about RCM and fiscal constraint, Dr. Clark noted the danger in having the separate unit's, such as Dining Services or Facilities Services, making decisions that are not reflective of the overall values and mission of the university:

The other role of the strategic plan is not so much on the values side but on the goals and objectives, is to guide unit plans to set the guide posts so that each of the colleges, each of the administrative units of the institutions in doing their own more detailed, somewhat narrower planning is understanding part of what it will be judged against is the

fit between the unit level plan and the institutional plan. One of the worries that an institution legitimately has when it moves to a resource allocation model like RCM is market forces will be the only thing that guides decisions, and that each unit if it follows purely a market force model would be heading off in different directions that wouldn't necessarily be complimentary.

Dr. Clark confirms the importance of a unified goal for the university. She also is aware of the tension that arises between the need to make financially responsible decisions that as dictated by the RCM budget model and the challenge of advancing the educational mission of the university. For this reason each operational unit on the campus is required to produce their own strategic plan that corresponds with the campus wide objectives.

President Smith responded similarly:

It [the strategic plan] ought to manifest itself in everything from the content of academic programs to budget decisions. It ought to manifest itself in the living and learning environment we produce for students...it ought to manifest itself in most of what we do...Are they expected to buy in, sure? Are they [university personnel] conscious of it on the workday? Not necessarily.

The university administration with input from the broader community is challenged with the task to provide guidelines that state the educational mission and values and assure that those values are integrated into university wide decisions. The intention is for these institutional values to filter down through the networks of communication and influence routine decisions at all levels of the university. President Smith's comment notes that there is an expectation that all employees become aware of the institutional values but how those values influence daily decisions is unknown.

In support of this observed behavior, Simon (1997) writes:

Administrative efficiency is supposed to be enhanced by arranging the members of the organization in a determinate hierarchy of authority in order to preserve "unity of command" (p.31).

In this next section, I shift from a focus on the role and perceptions of the administrators in organizational communication to that of the staff. I begin by introducing Claudia. In the position of the Building Manager for the Student Union, Claudia's responsibilities range from overseeing housekeeping services to maintenance and construction projects on the student union premises to waste disposal for the building. Claudia claims that there is a lack of communication about the costs incurred within the RCM budget model, which lead to a sense of mistrust of the system. In an earlier comment, Dr. Clark expressed that this was not the intention of the administrators or an anticipated consequence of the RCM budget model. Claudia expressed her concern:

Before, we would know whether we were losing money or the fee for collecting recycling or waste. We would know that. But we don't know that anymore. We know that our RCM has gone up every year but we don't know what is driving those costs, those increases. We don't know if it is the cost of electricity or the cost of recycling... we don't know what is driving it. That is one of our biggest complaints here. It is awful easy for us to be paying a lot more without even knowing it. There doesn't seem to be a high level of accountability. Just like I said, it's that bottom number and we can't barter or anything. Someone from the big tower over there sends us the bill and says this is how much your RCM is going to be for next year. RCM, this is how much... ok.

Insufficient communication about RCM charges can lead to a department to question if they are being over charged. Confirmed in an earlier comment by President Smith in the discussion on RCM, the current budget model does not have an internal mode for accountability, particularly for electricity, waste management and water.

Another perspective suggests that insufficient communication between departments can lead to a sense of fragmented responsibility and potentially lost efficiency. Jim commented on the procurement process at Northern University

and what he has observed in his brief tenure in the Facilities Department. He asserted:

I think it only makes sense that the whole purchasing operation on campus regardless of what department you are in should be under one unit so there is at least some coordination. But now, there is no coordination... because printing does what printing wants to do... facilities does what facilities wants to do... up until two weeks ago housekeeping did what housekeeping wants to do. You have got all these little disparate places on campus which makes no sense ...it should be brought under one unit and in my opinion under a purchasing umbrella and then the stock rooms could be handled as a sub-set of that. It should be done as a service for the university.

Jim affirms the concern expressed in Dr. Clark's earlier quote "... and that each unit if it follows purely a market force model would be heading off in different directions that wouldn't necessarily be complimentary." With reference to the current departmental purchasing system on campus, Jim observed that each auxiliary unit currently makes independent decisions that lead to a fragmented system rather than a centralized procedure. He continued with a frustrated tone:

Coordination is one of the central challenges to integrating sustainability principles... until they start bringing these things together and get people talking about it and getting a focus. Right now there is no focus... it amazes me the amount of pigeon holing and my turf and ... this is first time that I have worked... I have always worked for small companies so when you saw something that needed to be done you always went to the people and you got it done.... And when you come here it's like oh my goodness...I get so frustrated sometimes that I feel like walking out. It's a VERY frustrating culture. It amazes me the lack of coordination at a university ... even within facilities... forget the whole university... just take facilities as one little group within the university. It's just a lack of coordination. I think it's systemic.

Nineteen of the participants commented on the need to clarify auxiliary unit roles on campus. Other comments noted how assumptions were made about one department taking care of a task when in reality the task was left

undone. I highlight an example of lack of communications between Residential Life and Environmental Health and Safety to illustrate this tension. An example of fragmented responsibility that emerged concerned the communication process by which to educate students about hazardous waste disposal, such as cleaning products and computers, in the residence halls. In the interview with Mr. Lee, the Director of Environmental Health and Safety, I queried whether students were aware of the fact that some household cleaning products, which they might use in their dorm room, were considered to be hazardous waste. If labeled hazardous, the student is responsible for contacting the Environmental Health and Safety (EHS) office to assure proper disposal of the product. Moreover, computers are now considered to be hazardous material deemed so under the Universal Waste Regulation by the federal government and adopted by state law. Mr. Lee's comment suggested that students are being informed about hazardous material disposal by residential life staff and housing:

I think there is a bit of a difference between hazardous waste generated in our laboratories and household hazardous waste that ultimately will end up in a landfill. And I believe that our housing department does a very good job in notifying students that household hazardous waste will be handled by the university if the university wants to get rid of that. And we pick that up here in Environmental Health and Safety.

Mr. Lee distinguishes between the hazardous materials generated in the laboratories and that which is considered to be household hazardous waste. Environmental Health and Safety has invested time and resources in a program that has engaged research faculty and graduate students in a process of decreasing hazardous material purchases and disposal through a micro-scale chemistry program. While the laboratories have been a primary focal point for

the EHS program, education of the residence halls have been left up to the staff of Residential Life within the Student Affairs Division.

In an interview with Kelly, an assistant director of Residential Life, we discussed how Residential Life assumed its responsibility for educating students about issues ranging from diversity to water conservation to hazardous waste.

Contradicting Mr. Lee's statement, Kelly noted:

...to have all of the resources from ground zero coming from us [Residential Life] feels weird. And so for us, to take a full fledged throttle into a recycling or waste management program would be creating something that seems like... the Waste Management or Environmental Health and Safety office on campus should be potentially supplying us.

Granted we haven't gone out and asked... so in terms of how Residential Life could look, if there were things that we thought were important we could approach that.

Kelly explained to me that Residential Life has four missions that guide their decisions and determine what type of educational programs they provide. These missions are: 1) Appreciating difference, 2) Academic success, 3) Community citizenship and 4) Personal support. She agreed that education about waste management including hazardous waste disposal regulations would fall under number three. There does not seem to be a disagreement on the point that the students ought to be educated about hazardous waste disposal, but only with respect to who is responsible for doing so.

A commonly repeated perspective articulated more so at the staff level than the administrative level concerns a lack of interaction between the auxiliary departments and the academic departments. Bryan connotes that Dining Services is not at fault for the lack of interaction between them and campus

departmental units. Unlike Kelly who previously professed that no one is actively seeking out such partnerships, Bryan suggested:

I don't think there is enough interaction between the faculty and between the dining staff on either end. Have we gone out and actively sought it, actively promoted it? NO. Have they come in as a faculty whole and said this is what they want to do? NO. Have the students stepped up to the plate and tried to make that happen? The joining of the two? NO.

The SI [Sustainability Institute] is probably the closest that we have gotten to working with any kind of faculty on food related issues aside from some of the people that I have brought in from the Thompson School. But there is not anyone from COLSA [College of Life Sciences and Agriculture]. As a whole which is primarily the whole end of things that deals with that whole thing... farm and agriculture... there is not a lotto my knowledge they don't interact.

Mike, a manager of one of the Dining Halls, provides some insight as to what might be the source of the perception of fragmentation and not feeling a part of the whole. Moreover, Mike is a businessman and is expected to run a revenue producing business within Dining Services. He has been working for the university for five years and draws from his years in working in the food service industry as he reflects upon his experience at Northern University. He claimed:

It's [Northern University] the only place that I have ever worked where the survival of the parts are more important than the survival of the whole. And everybody has got their own little regime and their tenure and they don't want anybody questioning what you are doing even though there is duplication of effort in the university. Don't you question me, and if you do I am going to.... the bridge comes up and the motes fill with the alligators and you ain't gonna get near here. And they don't communicate with each other when they do things.

Mike's experience as a dining associate does not reflect the desires expressed at the administrative level. Based on the examples that I have cited in this section as well as other testimony, Mike is not the only one experiencing a sense that

these are fiefdoms within the university in which departments first look out for themselves.

To summarize the goal of the communication system at Northern University, I highlight Dr. Clark's statement. She very succinctly established the mission and values of the institution:

A very important role of the strategic plan is to cement the fact that this is an institution that we expect to be greater than the sum of the parts and that the parts need to be meshed and need to be going in roughly the same direction.

The intention of the organizational structure and strategic plan supported by the current administration is to create policies and decision-making frameworks that lead to an educational institution that is "greater than the sum of the parts."

Working within a budget model (Responsibility Centered Management) in which the parts are responsible for their own survival, the data seems to support Mike's observation in which that "survival of the parts are more important than the survival of the whole." The irony is that the whole is dependent upon the success of the parts.

Summary of patterns of communication

The patterns of communication at Northern University depicted by the participants illustrate an administration with the greatest of intentions to oversee an organization that exchanges information upward, downward and laterally, as characterized by Simon (1997). Both the formal and informal systems of communication appear to be in place yet there is evidence of a breakdown in the overall system. I identified nine distinct patterns of communication from the data. I have classified these as:

- An inability to consistently coordinate and share ideas within departmental divisions and across departments
- An inadequate system of top down communication.
- Hierarchical tensions apparent in staff/faculty interactions.
- Staff perceived to be in support of education but not recognized as educators.
- A lack of access to data and training to make “informed” decisions as defined by sustainability.
- Mistrust in the system linked to the RCM budget model and expenses incurred by departments.
- Fragmented responsibility and lost efficiency
- Lack of interaction between auxiliary and academic departments
- Current mode of behavior sends a message to the community that the survival of the parts are more important than the whole.

Some of the observed behavior may be explained with the assistance of Weick’s (1976) theory of “Loosely coupled systems”. Weick’s (1976) analysis is grounded in a generalized assumption that:

Organizations are constructed and managed according to rational assumptions and therefore are scrutable only when rational analyses are applied to them...It is conceivable that preoccupation with rationalized, tidy, efficient, coordinated structures has blinded many practitioners as well as researchers to some of the attractive and unexpected properties of less rationalized and less tightly related clusters of events (p. 67).

The “myth of rationality” embodies the belief that the process of organizing can be characterized principally by the rational assimilation of available information, and the subsequent setting of appropriate, carefully selected goals (Mumby, 1998,p.1).

While I am unable to make a concrete statement that claims that a sustainable institution is not loosely coupled, decentralized or embrace a fragmented communication system, I can observe that the behavior observed of the current system is directly correlated with the market behavior and the RCM budget model. The current system pits department against department to increase revenue and encourages survival of the individual parts and not the sum of the parts.

Rationalizing obstacles to sustainability

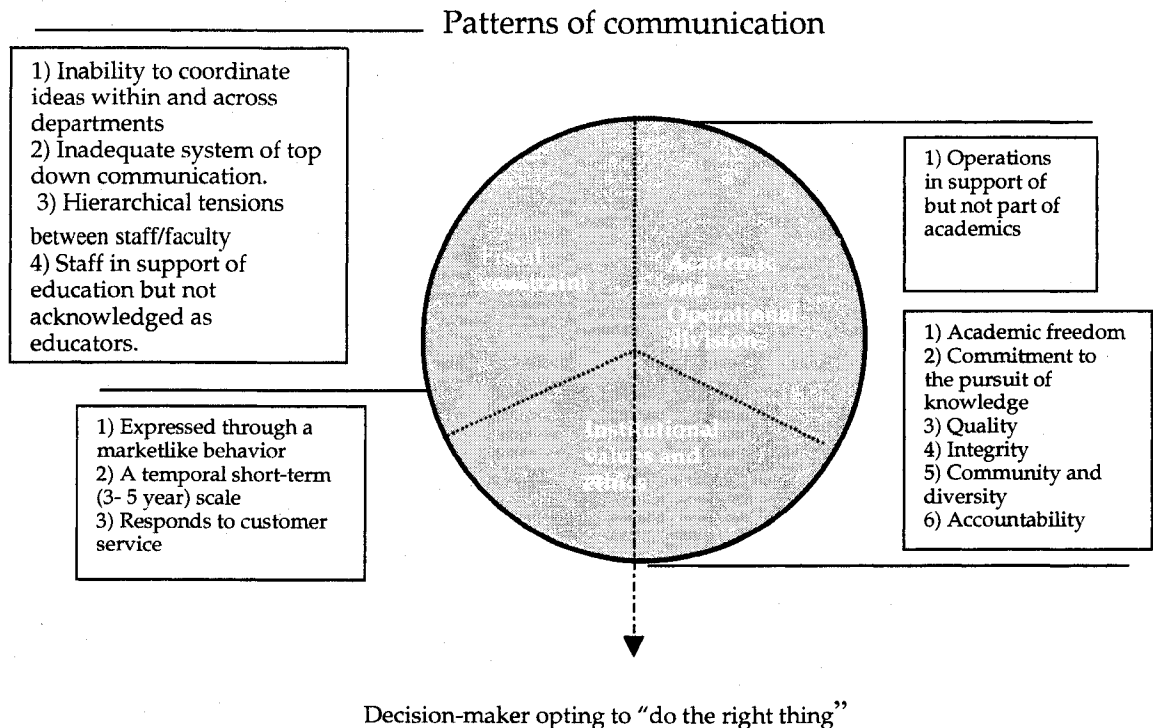


Figure 5: Decision-making framework at Northern University

In this chapter, I summarize what have emerged as the fundamental parameters for decision-making at Northern University. This is not to imply that other factors are not involved but rather, grounded in the empirical data, these components are consistently considered throughout the institution in the decision-making process. To conclude I bring the discussion back to the question of how the predominant decision framework rejects or embraces sustainability principles?

I highlight a quote by President Smith who spoke to the question of whether sustainability principles are compatible with Northern University. She succinctly and confidently noted:

I think the worst problem is that it [sustainability] may not get on the radar screen rather than people actively saying, this doesn't work. There are manifestations of sustainability that may not work but its principles are not incompatible.

And then the fact that we have a large number of stakeholders. We talked about who some of them are. They influence the decisions that are made here. They want a beautiful campus defined in their definition of beauty. And so the fact that we are public and responsive to the public makes some decisions harder than others. Because sustainability has high visibility.

President Smith claims that sustainability principles are never in collision with the university mission, implying that these principles are not a threat to the stated goals and objectives of the university.

Overall, my findings uphold Simon's arguments on administrative behavior and rational choice presented in Chapter four. He notes:

An organization is, after all, a collection of people, and what the organization does is done by people. The activities of a group of people become organized only to the extent that they permit their decisions and their behavior to be influenced by their participation in the organization (Simon, 1997, p.140).

Simon (1997) contends that the nature of institutions is as old as the institutions themselves:

If our topic were electronic computers or molecular genetics, little in a 1997 edition might survive from 1947. However, our topic is organizations. Human organizations, quite large ones, have been with us for at least four thousand years. Although the physical technology a modern army employs is wholly different from the technology employed by the armies of Nineveh of Egypt or X'ian, the processes people used in these ancient armies to make decisions or to manage people appear quite familiar to us and largely unchanged over the centuries. Basic organizational processes have not yet undergone a deep revolution. At most they have just begun, in our own era to confront major change, both social and technological (p.vii).

The data illustrates that the actual task of carrying out a majority of the organizations daily decisions and objectives becomes the responsibility of the persons at the lower levels of the administrative hierarchy. This is not to say that those who reside above the lower levels within the administrative hierarchy do not have a role to play. The task of the administrator becomes one of establishing an operative staff and superimposing a supervisory personnel that in turn is capable of influencing the operative group toward a pattern of coordinated and effective behavior (Alexis & Wilson, 1967; Simon, 1997).

Mr. Lee, Director of Environmental Health and Safety, implies that although he believes that sustainability principles are compatible with higher education, it is the hegemonic structure within the institution that will keep the university from achieving sustainability. Mr. Lee explained:

I think that the challenge is the diversity of the institution. I mean by that, there are so many different departments that you have to deal with that are sources of pollution whether it be solid waste, hazardous waste, air quality, water quality issues and the like. I think that is the biggest challenge in the institution. The sheer number of bureaucracies that you have to deal with and the decentralized approach that everyone has. As an aside... I chaired the task force on a non-smoking policy. It was quite a process. It took three years and twenty-two drafts... and I think that it was amazing. You had to meet with everybody and build those bridges to people who were diametrically opposed to this, and come up with the compromises.

Based upon his experience on the non-smoking task force, Mr. Lee strongly believes that the hierarchical structure is the primary impediment to integrating sustainability principles.

Along with this brief observation of organizational theory, I conclude with excerpts from participants who share with me their rationale as to why sustainability principles are not incorporated into their auxiliary unit and daily

decision-making routine. Though supportive of the goal of integrating sustainability principles into purchasing standards, Dr. Clark remained skeptical:

... people get into their habits and they find it hard to change. "I've always done it this way" is the phrase "so why do I have to...?" Let's say they have added more recycling bins and let's say they were colored to separate from standard papers and even a third one so you have three bins there and some people would find it difficult and say... "I don't have time for this. So with that factor it's hard for purchasing to do the requirements to. The only thing that we control is the purchase factor and the involvement of the delivery of it. Beyond that purchasing doesn't have any control.

Dr. Clark's statement reflects the customer service model in which she believes that the primary responsibility of the university is to please the customer while in support of 'freedom of choice'. In truth, the Purchasing Office does have a role to play in what products come onto campus based upon the bids that awarded to the large suppliers (ie. office equipment and supplies, research equipment, athletic equipment).

The Dining Services staff is quite clear about what they perceive as the barriers to integrating sustainability principles into their decision-making framework. Mr. Jones, the Director of Dining Services explained:

Our business is all supply and demand too. You know if we were to go that way [sustainable food system] then what happens when the growers can't handle the buying. Cause we have all these peaks and valley's you know... I could have somebody come to me today that says in two weeks from now I want to have a conference for 500 people. And then you have to get all the stuff for that and the guy out in the field down the street is going to say, "I don't have ... I don't have... they're not ripe." You know it's certainly an opportunity for us to be supportive and work with and do many things but sometimes it just isn't feasible.

Though Mr. Jones has supported sustainability as a value of Dining Services, he has not fully explored how a sustainable food system would work in the

Northeast. Nonetheless, he has concluded that it would not enable Dining Services to run at full capacity.

Fred, a Dining Services staff member, asserts that adapting sustainability principles for the Northern University food system would be "jamming ideologies down people's throats" as if to insinuate that the current modus operandi is value free. He also stated that sustainability is a threat to our closely held value of "freedom of choice."

You know... I still think there would have to be free choice. That we are not jamming ideologies down people's throats. But that part of the educational process would allow people to say, you know that does make sense. It's kind of like paper-plastic at the grocery store. What's the difference, maybe it would make a difference in the long haul.

Mike, a Dining Hall manager, focused less on the concept of a sustainable food system and explained what he believes the barriers to be:

We are a replacement society. I remember when I was growing up years ago. If a car broke down you rebuilt the carburetor, or the engine, or the motor, or the fan. Nobody does that anymore. There is no such thing as mechanics anymore. The parts change to something new.... Throw the old out. You have got to find ways of making the parts that when they do get recycled they get recycled into something else. The cycle keeps going on.

Why aren't we willing to do that? Again, it's what we said at the beginning of the conversation. Gee we need the prison, but not in my backyard. How it effects me personally. You're not going to see it in this generation. You're gonna have to get to the kid in kindergarten and those classes and start preaching a sustainable society. Just like you do with the kids today about smoking...the kids come home from school and say my teacher says it's bad for you to smoke, you shouldn't be smoking. It has reduced smoking a lot but it has influenced the parent's. Parents don't smoke in the house no more they go out on the back yard and they smoke. Or they go outside in their car and they smoke. They have learned. And it comes from their education and the kids too.

That is where sustainability has got to come from. We have got to start educating them young and what this does to the environment and how we can save it... and at the same time pushing the politicians and the manufacturers to start doing something now to improve the

situation.

I would take a bus to work if I knew the bus was convenient... but the bus is not convenient. Is the bus reliable? NO, it's not so therefore I take my car. If you had a continuous non-pollutant transportation service that was available at all times and that... than you could get cars off the road.

Kelly, from Residential Life, expresses her concern that the concept of sustainability and the manner in which the Sustainability Institute presents this to the campus is too complex for the average person and that the average person does not care:

But I think for the average person who doesn't understand this stuff [sustainability principles], it may be too complicated. Is there a way to simplify the information? And again it's sort of made me rethink ... if you look at the community citizenship concept... I mean I am immediately thinking the whole lofty part of that missionary about where people sit in their world and other stuff. I mean people sort of brought me back down to earth, and said well people need to know next door that they can tell their neighbor next door to turn down their music. Just that, "simple respect of living with other people." And that sometimes is just a hard concept for people to get.

If some of the sustainability information could be knocked down in layman's terms somewhat more, it may be able to be somewhat more effective. Not that it is ineffective but just in terms of reaching a broader range of folks.

Kelly reflects on the example of Citizenship, a programmatic objective of Residential Life. She has observed the difficulty some students have comprehending the importance of respect between one's neighbor in her experience attempting to educate students about citizenship. Drawing on this as an example, she argues that if sustainability is too complex, the concept is potentially out of reach for students making it difficult for the to both internalize the concept and turn this into an action. She explained in more detail:

I think they're people that just don't care. They just simply do not care. And this ties back relating to your question on morals and values. I think it's going to be another generation before the people, or maybe a

half a generation...the people who are being educated about our world and our impact. The impact that we are having on our world is going to then translate into people who are in positions to make policy and make change. But educating a 50 - 60 - 70 year old, it's just not part of their world. Therefore it's not necessarily deemed important. I mean folks that are completely annoyed about hearing stories about how they recycle and their recycling just ends up in the landfill anyways. So that I think that knowing what happens with it after it leaves us is an important educational tool.

Major block is that people don't care. A major percentage of people don't care. Even not just administrators but even our students too. On the other hand, I have a lot of faith that people can be educated about it. I really think that it is a very educateable issue. It's not tied so closely with someone's ...it's a value that is not a moral value...and so you are not asking someone to change their whole world... we are not asking people to change their view about religion about sexuality... about something that is so heated. We are just asking them to rethink something in a different way ... but that thing that they are thinking is not so controversial that it can't be done.

Ms. Green, Director of Purchasing, similarly expressed what she perceived to be the barriers to integrating sustainability principles into the decision-making process. She explained:

I think education is one of the biggest things. I think it is the biggest thing. Education of what it (sustainability) means and how it effects everyone's lives here at NU. I mean, we all have issues that revolve around sustainability to a certain degree whether its buying something... whether its taking a car and going somewhere...instead of walking. Reuse the other side of a piece of paper. It's truly an educational process to stop and think about this. And once again, we have morals, we have ethics, but these have to be put into daily life. Yeah, they are great visions and great principles but how do you put them into practice daily.

I conclude this chapter with a final quote from President Smith who provides an explanation for the complexity of the decision-making process at Northern University and her perception of why integrating sustainability principles into the decision-making process is a challenge, yet not an impossibility:

One is that decision making is very decentralized. So you have people making decisions on the ground all across the university on the fly.

And things can break down and people can have their own ideas about what's important so we run this in a very decentralized way, and that's one thing.

Another thing is that the calculus for the financial benefit for sustainability is long term. And this university doesn't have the luxury of much long-term financial investment because we are always just around the corner from a short fall. And so we make short term decisions sometimes because they are the only decisions that we can make when a long term decision might be preferred and that is a compromise that we make in decision making at Northern University.

And then the fact that we have a large number of stakeholders. We talked about who some of them are. They influence the decisions that are made here. They want a beautiful campus defined in their definition of beauty. And so the fact that we are public and responsive to the public makes some decisions harder than others. Because sustainability has high visibility.

....it's a matter of identifying that you have a viable operation before you start to tap institutional money. I think that's the stage we are in with sustainability. Is it permanent for this institution? I think that's it. You'll see. And in time...institutional money will start ... addressing. That will be a sign that it is institutionalized. And it won't be every project. It won't be how do we charge out the copying costs. It will be more esoteric than that.

Summary

The intention of this chapter has been to illustrate with the assistance of empirical evidence, the current decision-making process and what within the process obstructs sustainability principles from being integrated. Throughout this chapter I disclosed and analyzed the parameters wherein decisions are made at Northern University within the operational units of the Purchasing Office, Waste Management, and Dining Services and examined the decision rationale of the administrators who oversee each of these divisions. This chapter has provided an in-depth look at the two categorical-levels of obstacles that emerged from the data in the context of organizational theory. The first level that I proposed reflected an initial interpretation of the data supported by previously published research on the obstacles to integrating sustainability into higher education. These themes included: "requires top-down support" (14), "not fiscally responsible" (24), "costs too much money" (14), "interferes with culture of choice and convenience" (13), "not enough time – due to short term thinking" (14), "too abstract" (8), "must respond to student's as customers" (15), and "requires leadership and vision" (21).

The second level of obstacles emulated the complexity and intricacies of the existing decision-making framework. I have grouped the response to level two, into three points, which summarize my findings and analysis of the empirical data. I have characterized these as: *Ascertaining rational behavior*, *Ethical limitations*, and *Power structures*. *Ascertaining rational behavior* categorizes the manner in which decisions are made and justified within a marketbased system prevalent in institutions of higher education. *Ethical limitations* reflects the predominant interpretation of ethical reasoning illustrated

by the participants that advocates for decisions to be made with human interests in mind viewing nature as a commodity. *Power structures* emulate the economic and political configurations within the institutions. I provide a more in-depth explanation of each of these points below.

Ascertaining rational behavior. I cannot comfortably conclude that the decision-makers within the university currently make rational decisions, as defined by Simon (1997). Within the current decision framework, "rationale" is grounded in the knowledge and consequences of a market-based system, which defers to the bottom-line when anticipating the end result. Nor is it possible to make a rational 'sustainable' decision as defined by Simon due to the uncertainty of the circumstances surrounding many such decisions. Simon (1997) summarizes the three-shortcomings of actual rational behavior as follows:

- Rationality requires a complete knowledge and anticipation of the consequences that will follow on each choice. In fact, knowledge of consequences is always fragmentary.
- Since these consequences lie in the future, imagination must supply the lack of experienced feeling in attaching value to them. But values can be only imperfectly anticipated.
- Rationality requires a choice among all possible alternative behaviors. In actual behavior, only a very few of all these possible alternatives ever come to mind (Simon, p. 94, 1997).

I believe that the integration of sustainability principles calls upon a rationale that defers not only to bottom-line economics but also to the consequential impact of that decision on ecosystem-health and human-health. The lack of knowledge of the impact of a specific action on ecosystem-health or human-health can lead to a difficult decision-making process. Nonetheless, within the

current framework, criteria grounded in sustainability principles are not readily referenced.

To support my analysis, I reference Guy (1990) who offers additional insight into the decision-making model that has emerged from my study:

The fallacy of ideal models of rational decision-making is the assumption upon which they are based. They assume that tastes are absolute, relevant to the issues, consistent, and precise, when in fact none of these conditions are guaranteed. Furthermore, theoretical models assume that decision-makers will take the time and energy to thoroughly investigate all dimensions of the problem. The inevitable truth is that humans fall short of perfect rationality, for it is impossible to know everything there is not know about all situations and alternatives (p.30).

Decision-makers at Northern University are not unique in the challenges that they face in the process. Guy emphasizes the difficulty of making a decision unequivocally classified as being rational recognizing that to some degree it may be impossible to know all there is to know prior to coming to a conclusion. She (1990) writes:

When a decision must be made hurriedly, less information is sought in the problem-solving process than if the decision-maker has sufficient time to analyze the problem thoroughly...When presented with a choice, people will rely on an easy-to-understand decision rule rather than reevaluate a situation from the beginning and look for nuances not immediately noticeable...Even purely individual decisions involve costs. Because of this, people typically routinize many everyday choices. Routines allow people to adopt a rule that dictates the solution to many questions. This reduces the costs of decision making since it requires conscious effort only when an existing rule is to be broken or modified (p.32).

The process summarized by Guy (1990) supports the behavior portrayed by the decision-makers at Northern University. Guy's analysis emphasizes the limitations of decision-making such as time constraints and access to information and how those characteristics lead to routine actions claimed by the participants in this study. Though we are left with a clearer idea as to how decisions are

currently made and why many decisions tend to lead to unsustainable implications; I am unable to deduce from this study an ideal template for a rational sustainable decision within the current organizational structure of the institution.

Ethical limitations. In this discussion, I have concluded that Northern University enables decision-makers to justify choices that are primarily guided by fiscal constraint. Participant testimony illustrates that there are certain inherent yet unstated values that have a fundamental role in guiding the decision-making process within each operational unit. However, not all of these values have been embraced by the university in writing such as freedom of choice, convenience, or non-precaution beyond regulatory compliance. I deem these the *educational values* because that is what the actions of the institution reflect. The integration of sustainability into a decision-making process within an institution such as Northern University requires a reevaluation of ethical limitations to extend beyond the requisites of regulatory compliance.

Secondly, the literature on decision-making tends to emphasize the processes but not the criteria considered within these decision processes nor how to incorporate ethical lines of reasoning which extend beyond the human dimension. Though Simon (1997) and Guy (1990) focus upon the role of ethics and values in decision-making, these definitions do not extend beyond anthropocentric concerns when determining what is or is not ethical. More specifically, Simon (1997) and Guy (1990) frame ethics not unlike the anthropocentric definition that I introduced in the previous chapter which

advocates that all decisions are in the interest of humans and that nature is valued and viewed as a commodity.

Power Structures. The third and final point is in respect to the power structures within the institution. Admittedly, more questions were raised in this arena than answered. On numerous occasions the administrators commented that they needed to experience an uproar from the lower levels of the institutional hierarchy before they could support the integration of sustainability as a decision criteria. Conversely, those representing the lower levels, though making important daily decisions, indicated that they will do what they are told by the administration. Chancellor Lesser commented on this approach:

Maybe the answer to the question is that you first lead by ideas and then you help infuse this value by having people do it, come away with satisfactory experiences of it and talk with others about it and begin to move it more into the culture of the organization.

An emerging question is how can the process of integrating sustainability take place simultaneously with interest piqued at the ground level and imminent support from the top?

Can the principles of democracy pave the way to a sustainable system?

My analysis of the data infers that there is a fear amid the administrators to take a leadership role in integrating sustainability principles into the dominant decision structure. I believe that this fear links back to two lines of reasoning. The first line of reasoning is grounded in the customer service model in which institutional revenue is attained by appeasing student demands conjoined with short-term financial constraints. The second line of reasoning is that of power or

hegemonic relationships guided both by a structural phenomena and relations between individuals. To support these observations I turn to Mumby (1998) who is interested in how “power functions in a hegemonic fashion to structure the system of interests in an organization” (p.55). Mumby (1998) references Bachrach and Baratz who note:

...power can be exercised in order to confine the decision-making process to issues that are noncontroversial – only those issues that are “safe” are open to debate.

They explain a hegemonic structure needs a system in which to distinguish between 'important' and 'unimportant' decisions:

Such criteria, are established by analyzing the “mobilization of bias” in a community; that is, “the dominant values and the political myths, rituals and institutions which tend to favor the vested interests of one or more groups, relative to others” (Mumby, 1998, p.59).

Conclusion

These three concluding points illustrate how I can apply this study to develop a foundation from which to extend the literature on organizational theory, decision-making processes, institutional power structures and ethical reasoning into the realm of sustainability. Moreover, I can comfortably conclude that the current decision-making framework is not yet prepared to incorporate sustainability principles and needs a process of transformation. The aggregate of the concluding points from each of the sections in this chapter adds up to a list of challenges that the university faces. In this study I have discovered that Northern University suffers from a lack of: state support, communication strategies (vertical and horizontal), top-down support for sustainability, accountability beyond the realm of professional code of conduct, coordination between departments and operational units, access to data that broadens the

implications of decisions for decision-makers, and precaution beyond regulatory compliance. Though each of these challenges represents obstacles to integrating sustainability principles into the decision-making process, I cannot appropriately conclude that if these were reversed a sustainable university would ensue.

However, I do believe that these are areas within the organizational structure that ought to be reviewed through future research to determine what role these challenges do play and how might they be reconfigured to lead to decisions that integrate sustainability.

CHAPTER VI

A CULTURAL CONSTRUCTION OF SUSTAINABILITY WITHIN THE WALLS OF HIGHER EDUCATION

...cultural knowledge is a whole larger than the sum of the individual cognitions. It has a structure of its own that interacts with the individuals who also are constructing it (p. 24).

- Fosnot, (1996), Constructivism: Theory, perspectives, and practice

In this chapter I examine the data through a constructivist lens as I attempt to provide further evidence as to why sustainability principles are not currently integrated into the decision-making process at Northern University. Beyond the focus on the conventional decision-making framework established in Chapter five, I extended the analysis to examine the factors that influence an individual's understanding of the concept of sustainability and how that understanding seems to be reflected in his/her rationale as a decision-maker. The notion of constructed meanings of sustainability is not new (Wals & Jickling, 2002). However, what distinguishes this research from previous applications of constructivist theory is how the relationship between organizational structure – manifest within power structures and the decision-making process associated with professional/personal experiences seems to influence one's comprehension of sustainability.

In support of this argument, Werhane (1998) writes:
All experience is framed and interpreted through sets of conceptual schemes or mental models that function on the individual,

institutional, societal, and cross-cultural levels. We can neither experience an event nor present a story except through mental models. Still, depending on which model or models is or are operative, interpretations of a situation or event by persons, groups, institutions, or societies may differ greatly from each other. Because conceptual schemes are learned and incomplete, we can also create, evaluate, and change our mental models. Still, sometimes we become so embroiled in a particular set of mental models that shape our stories or narratives, whether or not of our own making, that we fail to compare a particular narrative with other accounts or evaluate its implications. Thus, the ways we present or re-present a story, affect its content, its moral analysis, and the subsequent evaluation (p.2).

Werhane's (1998) statement suggests that all of the participants in a global sense work within and experience the same culture and organizational framework.

Yet, they bring to their profession different backgrounds, world-views, experiences, values, morals, ideologies, expertise, politics, and education which influences their interpretation of the world that surrounds them.

Extending Werhanes statement Trondal (2001) writes:

The social constructivist approach basically argues that the social contexts embedding actors have some fundamental implications for the behavior, identities and roles enacted by those actors (Trondal, 2001).

Trondal (2001) indicates that the context influences the individuals who enter into an experience with different backgrounds. He also links constructivist theory to sustainability and higher education through extensive research looking at the behavior of decision-makers within organizations. He too draws upon organizational and constructivist theory to explain his observations. Trondal (2001) writes:

...whereas social constructivism aims at understanding how, for example, roles and identities are constructed, organization theory is geared more towards understanding how pre-existing identities and roles are activated and de-activated in particular organizational contexts (p.4).

The analysis of the decision-framework in Chapter five provides evidence that the organizational structure impacts how individuals make decisions, weighing one choice over another. The choices that the participants face range from food choices in the dining halls to criterion for awarding bids for campus contracts to how to allocate funds to support campus maintenance.

In this chapter I build upon this notion and extend this argument to explore how these organizational structures influence one's understanding of sustainability, however, not out of the context of the experience that the individual brings to the process – be it inside or outside of the institution. Though ample literature exists on organizational and constructivist theory, there is little discussion on how the two interact and moreover, influence one's constructed understanding of sustainability. Fosnot (1996) writes:

We cannot understand an individual's cognitive structure without observing it interacting in a context, within a culture. But neither can we understand culture as an isolated entity affecting the structure, since all knowledge within the culture is only - "taken-as-shared" (p.24).

The underlying premise of the educational constructivists is that new knowledge is constructed with the observation and experience of events conjoined with the concepts that one already retains. Though theorists such as Ausubel and Gowin provide unique perspectives on how knowledge is constructed, they are all in agreement that people are not blank-slates and are influenced by their surroundings and experiences. The educational constructivists have enabled me to make sense of the data to a certain degree. Nonetheless I am unable to specify how each experience is aligned with specific theories.

This study demonstrates how the decision-makers appear to be influenced by the cultural organization (an institution of higher education) in which they are

embedded as professionals shaped by personal experiences. I attempt to uncover potential parameters that influences an individual's construct of sustainability as well as leads that individual to take action that reflects sustainability. Though I suggest this relationship in the analysis, I am unable to prove this definitively. I recognize that it is not feasible to identify all of the parameters that have influenced and shaped an individual's construct. In this chapter, I attempt to synthesize and categorize the one's that did emerge to gain deeper insight as to how sustainability is understood in the mind of a decision-maker embedded in an institution of higher education.

Culturally constructing the meaning of sustainability

In Chapter five, I illustrated how decisions are made at Northern University. In summary the decision-framework has three general components: 1) Fiscal constraint, 2) Administrative and operational divisions, and 3) Institutional ethics and values (stated and inherent). Criterion within each of these three components currently provides a basis of rationale for how daily decisions are made. For the purpose of grounding this chapter, I refer to Simon's (1997) definition of rationale:

...[it] is concerned with the selection of preferred behavior alternatives in terms of some system of values whereby the consequences of behavior can be evaluated (p.84).

Each of the participants thereby selects preferred patterns of behavior in his/her responsibility overseeing the process and/or making decisions that have a potential impact on ecosystem health and human health. I remind the reader that the current decision framework does not systematically incorporate sustainability principles into the process.

There are two unique aspects to my argument. I assert that the decision-makers construct an understanding of sustainability through a combination of professional/personal experience and organizational structure manifest in decision-making processes and institutional power structures (figure 6). It is possible that this construct influences the rationale to embrace or reject the integration of sustainability principles in daily decisions. I am not suggesting that there are not other influences, however, I focus upon those that emerged through this research.

For the purpose of the discussion, I group personal and professional experience together due to the manner in which the participants responded to the questions. There was not sufficient evidence in the data analysis to distinguish between the two experiences to determine which had more of an impact in certain circumstances. For the sake of clarification, a personal point of contact tended to be referenced as an individual's interest and/or sense of commitment to environmental issues outside of the work environment often in relation to one's home or community. Professional familiarity was often correlated with the work of Northern University's Sustainability Institute or a specific project with which they were involved, such as a departmental commitment (ie. Purchasing Office Sustainability statement, Sustainable landscape standards). Familiarity with the term was associated with previous professional experience outside of the university. The two prominent influences that emerged with respect to the role of organizational structure, were the criterion depicted by the decision-making process and the position of power inherent with ones professional role (figure 6).

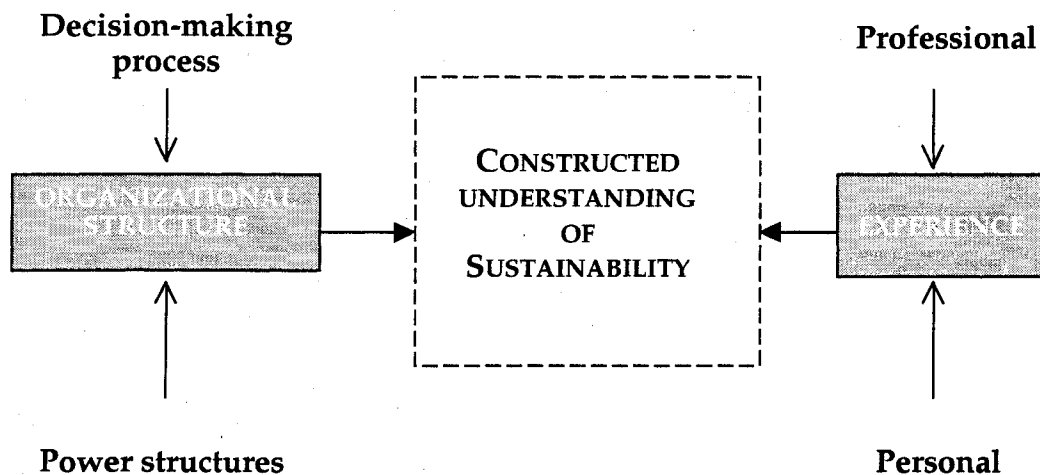


Figure 6: A cultural construction of sustainability

I apply the framework depicted in figure 6 to the definitions relayed by the participants as a way to determine what factors influenced how they constructed their meaning.

I invited participants to articulate how they understood sustainability throughout the interview process. At the time of the inquiry I had not anticipated being able to identify correlative patterns between ones understanding of sustainability relative to experience and organizational structure. Evidence emerged from the data analysis process that the participant's understanding of the term was influenced by a combination of professional /personal experiences and organizational structure manifest in decision-making processes and institutional power structures (figure 6). I also detected a connection between the participants understanding of sustainability and how their interpretations could be classified as definitions of 'weak' rather than

'strong' sustainability as characterized in the literature. The term 'weak' sustainability stems from a neoclassical economic framework and understood as:

...what matters for future generations is only the total aggregate stock of 'man made' and 'natural' capital as such...it does not matter whether the current generation uses up non-renewable resources or dumps CO₂ in the atmosphere as long as enough machineries, roads, and ports are built up in compensation (Neumayer, 1999, p. 1).

The primary difference between these two terms is that 'weak sustainability' can be referred to as the 'substitutability' paradigm in which one product is exchanged for that of another with the assistance of advanced technology.

Whereas 'strong sustainability' suggests a paradigm shift away from the current system of the domination of nature established by neoclassical economics.

There is a growing body of literature that maintains there is no precise agreement on the meaning of the term sustainability. Yet, the fundamental principles of the need to balance the economy, the environment and equity for all people are consistently emphasized in the most frequently applied definitions (Drummond & Marsden, 1999; Redclift, 2000). The unfortunate aspect of the debate is that it has led to competing and conflicting philosophies about what the term actually means, the collective vision, as well as how to classify the most desirable means to achieve the goal (Agyeman, Bullard, & Evans, 2002).

The complexity of sustainability and the task of coming to terms with its meaning are in part due to the interdisciplinary nature of the discussion. The literature on sustainability extends theories by economists, scientists, policy makers, environmentalists, and ethicists. In some cases, the explanations of sustainability are intentionally integrated (Drummond & Marsden, 1999; Redclift, 2000), while in other cases explanations are offered through a single

disciplinary perspective such as economics or ecology (Common, 1995; Faucheux et al., 1998).

The relevance of the debate about the definition of sustainability to this research supports the idea that it is not unusual for participants to express varying and at times vague definitions of the term. I have divided this chapter into two separate yet interrelated sections to illustrate the patterns of constructivism through two distinct lenses. Section I illustrates what has influenced the participants' constructed understanding of sustainability. Section II portrays the participants' visions of a sustainable campus.

Section I: Constructing an understanding of sustainability:
Applying the lens of ones professional/personal experience position embedded
in the cultural context of higher education

Though I did not directly question the participants on how they constructed their understanding of sustainability, through the stories and examples that they reference in the interviews, a pattern emerged. I assert that the decision-makers construct an understanding and therefore a rationale for embracing or rejecting sustainability principles in everyday decisions influenced by a combination of professional/personal experience and organizational structure manifest in decision-making processes and institutional power structures (figure 6).

I examined the data for references to and relations between the participant's professional/personal experiences with issues of sustainability in an attempt to determine how these influenced decision-makers constructed understanding. I compared references and explanations of sustainability from each participant across the four institutional structures that they represent [Administration, Purchasing, Dining Services, and Waste Management]. The testimonies conveyed in the interviews underscore the idea that organizational culture influences 'meaning-making'.

Administration

The rhetoric of the international declarations (ie. Talloires, Ubuntu) calls upon the leadership of the university to pave the path towards a sustainable institution. Though logical, none of the administrators that I interviewed either previously demonstrated or otherwise indicated that they would willingly

support the integration of sustainability principles unconditionally. Eight of the twenty-four participants that I interviewed hold administrative or director level positions at the university. Many of them have been exposed to the term sustainability through their professional responsibilities on campus, whether as a committee member or because of a commitment expressed through a departmental value statement. In this section I examine the responses of five administrators and directors: Chancellor Lesser; Dr. Clark, Vice President of Finance and Administration; Mr. Kaufman, Assistant to the President; Eliot, Director of Facilities Services Business Service Center; and President Smith. Their stories will illustrate how organizational structure and professional/personal experience influence their understanding of sustainability and therefore justification as to when to embrace or reject its integration.

Example one. I begin with a statement by Chancellor Lesser. His statement emphasized throughout each of the interviews with the other administrators. Chancellor Lesser reflected on his role as the chief administrator and what it would take to have a top-down approach to integrating sustainability into the state system of higher education institutions that he oversees. He reflects on his experience instilling the values stated in the strategic plan into university culture.

Unconvincingly he considered:

...maybe the answer to the question is that you first lead by ideas and then you help infuse this value by having people do it, come away with satisfactory experiences of it and talk with others about it and begin to move it more into the culture of the organization.

Demonstrated by Chancellor Lesser's statement, there appeared to be a sense of hesitation on the part of the administrators as to whether they were

responsible and prepared to lead a top down approach to cultivate values such as sustainability into the university culture. Although the administrative positions are not elected officials, it is clear that there are constituencies to respond to within and beyond the walls of the university. There was a visible sense of reluctance on the part of the administrators that was expressed as a fear of displeasing the community.

Chancellor Lesser affirmed his knowledge of sustainability with a voice of speculation:

I'll have to admit from the beginning that I don't know how people are using it [sustainability] in a technical sense. My own sort of home spun understanding of it is that ... recognizing the finitude of resources, whether we are talking about natural resources or we are talking about our own allocation of time which is known as our life.

Sustainability is using it in the most responsible way that we possibly can devise which involves using the things in ways that are meaningful, that are consistent with principles of justice, that are well informed by best practice. I'll stop there, that's really how I would see it...to leave as gentle a wake off the stern of our boat as possible.

He professes a basic understanding of the intended outcome of the application of a decision-making framework guided by sustainability principles. His comment about leaving "as gentle a wake off the stern of the boat as possible" implies that he recognizes the value of a low-impact goal within which the university would act if it were to become sustainable. Chancellor Lesser expressed a basic understanding of the questions and challenges posed by integrating sustainability into a university system in this statement:

I think at a natural resource consumption level, there is that whole question of how do we deal with things. What are the disposables that we choose to buy? And do we buy things that are manufactured with the least impact on our environment? And are they used with the least impact on our environment? And are they disposed of with the least impact on our environment?

Why is Chancellor Lesser' unable to lead the system into a low-impact system provided his position and understanding of the desired outcome? He acknowledged that in principle he supports the goals and objectives of Northern University's Sustainability Institute. However, he was not in a position to assure that the Institute's objectives were embraced by Northern University's administration. Chancellor Lesser clarified his reasoning:

It just falls fairly low on the list of priorities there are so many other things to worry about. I mean... there are whole clusters of things. Financial is one. We are relatively speaking, one of the most poorly funded public university system in the United States. So financially, it's always a struggle. When you are always struggling, you don't have the financial leisure or the inclination to think about things beyond the struggle. You should but you often don't. It's very human. I think that ... there is also a feeling sometimes, well, will this make all that much difference. I think that that is a human factor that comes in.

Chancellor Lesser also articulated, what I interpreted as his own misconception of sustainability, in his reference to sustainable landscaping:

... our choices are either to have the lawns go brown and weedy which could effect the visual impact of the institution on the perspective student and their family, which can effect enrollment, which can effect bottom line. Or labor costs go up because you bring in more people to keep the lawns weeded and tended and so on.

Chancellor Lesser's statement illustrates the mental model that he has constructed envisions the integration of sustainability as leading to a solution that depicts the polar opposite paradigm than the one in which we live. There is evidence in the participant testimony, which suggests that those who resist sustainable landscaping anticipate a campus of weeds without chemicals that students no longer want to attend. This is not the vision of a sustainable campus portrayed by the international community. Multiple presentations and memos have been presented to the Northern University administration and the broader community about the goals and objectives sustainable landscape standards.

Reflecting upon previous experience, Chancellor Lesser explained that he has had grappled with the question of sustainability in his previous position of President of a different university. He stated that he was very supportive of the grassroots effort to make change and emphasized the importance of a deliberative and well-grounded democratic process to achieve that change. He willingly acknowledges that it is impossible to please everyone in the community. In this statement he recalls one of his experiences:

At my former university the students were very successful in getting us to remove all paper towel dispensers from all of our buildings and replace them with hot air dryers. They had done a review that showed that these were less environmentally harmful so to speak. We tried an idea of asking everybody to bring his or her own towel with him or her but that didn't work. But you know, as soon as the paper towel dispensers went out people complained and then people started writing editorials in the student newspaper complaining about the fact that maybe we were using more Natural Resources to generate the electricity to run the hand dryers than the paper. You can't win. BUT... somewhere along the line I think institutions need to take those things into account. We don't always make perfect choices. If we don't use some sort of pesticide on lawns and things like that... our choices are either to have them go brown and weedy which could effect the visual impact of the institution on the perspective student and their family which can effect enrollment which can effect bottom line. Or labor costs go up because you bring in more people to keep the lawns weeded and tended and so on. It's an imperfect world and so we have to make those choices but we have to make informed choices ... and we have to make choices. And I think that in there we make the best choices we can but we should take into account the life cycle of the consequences of what we do. Both the front end, the product and what it took to put it in our hands and what it is that we are doing when we use it.

His statement upholds the challenges posed by the inherent components of the decision-making process: fiscal constraint, the tension between academics and operations, and institutional values. He reflects on his experiences at his previous university and the challenges he observed with infusing new values into a deeply rooted system. Overall he expresses a strong sentiment that

sustainability requires complex reasoning and trade-offs, which could be observed as compromising the values of 'choice' and 'convenience,' identified by this study as inherently hidden yet accepted university values. As an administrator in a state that continuously struggles to receive ample funding for education, he confirms the perceived tension between economics and an emerging paradigm guided by sustainability principles. He asserts in his statement that a choice grounded in sustainability is going to lead to a system of trade-offs.

Clearly the experience at his previous university coupled with his current struggle to ensure adequate to ample funding for the state university system has influenced Chancellor Lesser's constructed understanding, interpretation and support of sustainability. Though he professes a general support and understanding of sustainability issues, in his current position Chancellor Lesser has prioritized other pressing issues. His comments illustrate that he clearly values a deliberative process and acknowledges that there is no perfect solution when making choices that impact an entire community.

Example two. In her role as Vice President of Finance and Administration, Dr. Clark must assure that the university is able to sustain itself economically balance the bottom line figure. She emphasized the importance of economic viability when applying the sustainability framework to decisions at Northern University:

I guess I would say ... [sustainability is] a set of practices that in combination are cost effective in the broadest sense over the longest time frame and can persist. The minute the definition narrows you get these intractable situations and you end up spinning a lot wheels and a lot of people are demanding things and it's just a waste of time.

Higher education is the closest thing to a permanent institution next to the church on this earth... Higher education is also under economic pressure not unlike any organization around... so paying attention to the initiatives that can help that picture and solidify the long term are the right thing to do for the institution.

Her emphasis on financial constraint and long term thinking stem from her responsibility at the university to oversee a revenue stream that is greater than the expense stream. Dr. Clark expresses a fundamental understanding of sustainability and respects the goals of integrating sustainability principles into the decision-making process within the university, however she acknowledges, because of some experiences she has had that she still struggles to be consistent with her support of these principles. Because of the breadth of her responsibilities, Dr. Clark has been involved with three particularly controversial sustainability issues, involving transportation, land management, and landscaping, which she refers to in the previous quotation as "intractable situations." Throughout the interview she referred to the issue of sustainable landscaping:

Some people made an observation of some of the sustainability landscaping initiatives on this campus and have come away with the view that sustainable landscaping equals ugly. And of course the last thing that we can afford in recruiting and retaining students and the whole nine yards is having the campus looking ugly. So there's been this. And now that we have worked through it I think that sustainability can and should be beautiful. Sustainability does not have to be ugly. We are going to work this out still in the Master Plan but it's unfortunate when you get a pile of weeds out by the student union saying this is what sustainability is... it doesn't help.

Like Chancellor Lesser, Dr. Clark notes that one of the challenges of integrating sustainability principles is the inherent conflict with some current standards.

The example of sustainable landscaping underscores how university standards shape community members' understanding of sustainability. Dr. Clark suggests

that some members of the Northern University community believe that sustainable landscaping could potentially threaten recruitment and retention of students. If the underlying assumption held by an administrator is that sustainability means lost revenue from tuition, then sustainability principles will remain marginalized.

Sustainable landscape design principles aim to shift the current standard of a mono-cultured lawn by introducing a more complex landscape that promotes an increase in biodiversity. The shift to a sustainable landscape requires a change in attitude, with respect to what a lawn appearance, from the community at large. It is examples like these that help construct the meaning of sustainability and challenge the current paradigm in which university decisions are made. Dr. Clark responds first and foremost to the economic condition of the university which both shapes her interpretation of and justification for (or against) sustainability. Her perspective has also been strongly influenced by her experience with sustainable landscape standards. Though she infers that she has had some exposure to positive influences of sustainable standards, the negative events have left her cautious in her actions. In a position of authority she struggles to remain consistent in her support of the integration of sustainability.

Example three. There is apprehension explicitly stated in the following excerpt from Mr. Kaufman, assistant to the president, as he reflects on the meaning of sustainability and how he has constructed his understanding. Consistent with Chancellor Lesser and Dr. Clark's concern, Mr. Kaufman alluded to the political pressures of the implications of sustainability and admits to a shifting definition and framework that reflects the university climate at the time of a decision:

Well I have to be very frank...you know, my definition of sustainability will change depending upon conditions or the climate at the time and I don't mean the weather but within the community. At times when we are dealing with landscaping issues for example sustainability is the sustainable controversial areas around the student union or neighboring building what could be around the Student Infirmary or whatever [Mr. Kaufman refers to an issue of a sustainable landscape project that was piloted and removed due to controversy]. At other times sustainability is recycling but overall I think ... in a real general sense sustainability is ultimately doing whatever we can do to preserve the environment, and the earth, oceans and space for posterity. So in that sense it's being conscious about what products we use and how much waste we generate and being very conscious about what we are doing on a day to day basis and what we can contribute individually and collectively to that preservation that I was talking about.

Mr. Kaufman's statement reflects his fundamental understanding of the implications of integrating principles of sustainability into the decision process and the political connotations. Similar to Dr. Clark, Mr. Kaufman has been involved with some of the sustainable landscaping controversy. While he claims that he has not let this shape his understanding of sustainability, the political nature of the controversy has certainly made an impression. With the controversy of sustainable landscaping fresh in his mind, he indicates that the projects that he supports will vary depending upon the political climate and the breadth of the issue. An administrator's sense of responsibility to the university has elastic boundaries and the comfort level of the administrators becomes relative to the political atmosphere of the issue at hand.

I apply the term relative to an administrator's action that becomes inconsistent, from one issue to the next. As illustrated in these examples, an administrator may understand and believe in sustainability principles however, if a controversy arises in the broader community, as has been illustrated, the administrator may forgo the principles in order to avoid controversy.

The controversial nature of the sustainable landscaping issue has assisted in shaping Mr. Kaufman, Dr. Clark and Chancellor Lesser's understanding and commitment to sustainability principles. Because of the negative reaction from some members (the number was not specified) of the university and the perceived economic implications of not being able to recruit students, none of them were inclined to step in as a leader on the issue.

Mr. Kaufman agrees that sustainability principles are compatible with the university system but only when the issue is deemed non-controversial. He expressed this in the following excerpt:

Absolutely.... I would say YES, as long as we temper how we define sustainability. For example, I think we are going to always have to be cutting trees and renovating buildings and doing or adding buildings or things like that. I think that when we do those things we have to do them and be consciously aware that when we take down a tree we ought to replant a tree. Do the right thing like that. I am very conscious because of our efforts with the Moore Fields and all of that. In the name of sustainability individuals who want to preserve everything the way it is right now and not change, use sustainability as a shield. I think that we just need to be aware of that.

Mr. Kaufman alludes to an assumption that sustainability threatens growth on a campus.

Not unlike Dr. Clark, Mr. Kaufman's definition of sustainability is elastic in response to the political climate surrounding a particular issue. In this case his understanding of sustainability is constructed most prominently by the power structures and recollections of his exposure in his professional role at the university to controversial issues that range from sustainable landscape standards to parking to land conservation. This statement illustrates how Mr. Kaufman has internalized negative aspects of sustainability grounded in a

limited view as to its' intention, "in the name of sustainability individuals who want to preserve everything the way it is right now and not change, use sustainability as a shield." Though he is aware of the positive intentions of integrating sustainability principles into the university system, and evidently supports such efforts, he remains cautious in his actions.

Example four. Eliot, an administrator for Facilities Services, has been introduced to the principles of sustainability through his work on the Committee on Transportation Policy. In this excerpt, he expresses the evolution of his understanding and comfort with the application of sustainability principles through his exposure to the application of a Transportation Demand Management system as a guiding framework for developing a campus transportation system:

I am on this Transportation Committee and we were dealing with all of these issues that you have seen. At times one person was over here and I was way over here but...the committee is made up of 15 - 20 people... and you get the people that say look the only damn thing to do is build a garage and I have learned and I know that is not the answer ... It takes a little bit of balancing. You say wait a minute, it's about the transportation demand management concept and trying to get that underway and a garage is only one piece of the formula etc. So we have that responsibility to bring to the campus not just that QUICK FIX...that by itself is the wrong decision.

He explained to me that his understanding and support of the philosophy has shifted from that of skeptic to that of advocate due to the outcome of the Transportation Demand Management proposal. This experience exposed him to the system's-level solution of applying sustainability principles. He thoughtfully responded:

To me you are carrying a responsibility to the university, the community, to the state ... I could ramble on like that... but it's definitely a responsibility beyond economics and you have got to make that statement somewhere because ... you may have a very little piece of it... but dammit... it can make a difference. ...I don't care if it was the yellow bike program but it's just stuff up there that says you have got to think like that. You have got to think about the whole way you deliver services to the demand for transportation etc. So it's been something that now, I think I have internalized and it comes out in some of the ... it used to be just an economic decision and you know... now at least you can speak in terms of a longer term issue. And maybe it's the new people coming to the door that have been facing some of this in the outside world, the private world. And some of the down side is that if you don't address some of these things there is a financial penalty... those eyes are now on the campus. At least we are talking about it.

In his four years at Northern University working with the Facilities Department, Eliot has been exposed to sustainability through a variety of experiences. Like Dr. Clark, he is also responsible for managing the bottom line of the Facilities Department budget. He is expected to make fiscally responsible decisions on a daily basis, often with short-term implications.

Eliot acknowledges that integrating sustainability principles into the operational structure of a university is a slow but essential process. He recognizes that he has begun to internalize the principles of sustainability and has constructed his meaning based upon his experience with Transportation Demand Management. Though he joined the Committee on Transportation Policy, skeptical of the intentions of sustainability, he has come away with a positive experience to draw from when called upon to integrate sustainability into other aspects of his work, such as waste management. Eliot suggests that if sustainability is not infused, then the financial penalties determined by compliance regulations will be greater than the initial investment to maintain a standard defined by a sustainability framework.

Example five. President Smith has been affiliated with land grant institutions throughout her entire profession and has held the position of President of Northern University for the past five years. The movement on campus to become a more sustainable university began shortly before her arrival on campus. With support and encouragement from the community, President Smith signed the Talloires Declaration. In this statement she summarized her view on the relationship between sustainability and higher education:

The business of a university is learning. When students learn the call of education and faculty learns the call of research. But the business of the university is learning. Is that in anyway, incompatible with sustainable living? NO. They may be sometimes on parallel tracks but they are never in collision.

Throughout the discussion, President Smith reflected on the current state of sustainability at Northern University. She began her tenure at the university a year prior to the creation of the Sustainability Institute. As an administrator who has worked her way up the academic hierarchy from faculty member to administrator, she brings with her the model of the "center of excellence" in which sustainability as a program stands apart from the overall mission of the university. President Smith stated:

Sustainability is still almost in its infancy maybe early childhood but not deeply rooted. The fact that we have some endowment income helps a lot because we can do some sustainability projects without impacting the regular on-going budget. That really helps because if you have a new program that competes head on with established programs. ... whether it's sustainability or something else, it's likely to get swamped. And so right now it's a great benefit to us to have some sacred money. Some designated money for that... that couldn't be used for other things because if it could be used for other things it would always be swept away for today's crisis. So I think that is probably an important component to sustainability because if you find it competing with additional sections of freshman Spanish, it will lose. So it needs to have an identified and sacred funding base. That doesn't

mean that as we are able to integrate sustainability into essentially everything we do, that budgets across the university shouldn't include it's application.

The comparison that she draws illustrates the framework in which she is working as an administrator. She continued:

Another thing is that.... Sustainability...the calculus for the financial benefit for sustainability is long-term. And this university doesn't have the luxury of much long-term financial investment because we are always just around the corner from a short fall. And so... we make short-term decisions sometimes because they are the only decisions that we can make when a long-term decision might be preferred and that is a compromise that we make in decision making at NU.

In her position, President Smith is forced to work within fiscal constraints. She indicates that the integration of sustainability cannot happen overnight but must be a gradual evolution.

President Smith's construction of sustainability appears to be influenced first and foremost by the decision-making process and power structures within the university. She implies that if the general fund supported sustainability projects, it may be perceived as competing with essential courses. This comment illustrates that she has placed sustainability into the existing framework as if it represented a discipline rather than a political construct.

Summary of Administrators

What was unique in the administrative responses was the tension they faced between being a leader of a shared governance structure and authoritative in their actions and the need to respond to daily crises leading to short term responses. Consistent with the decision-making framework from Chapter five, there was direct evidence in the administrative comments justifying why sustainability principles are not more readily integrated. Their comments

implied that sustainability cannot: 1) Impact the bottom line, 2) Impact student recruitment – suggesting that sustainability has a negative impact on revenue and no substantial educational value, and 3) Shift the current decision framework and therefore organizational structure. An analysis of these responses through a constructivist framework leads to the conclusion that overall the administrators have developed an understanding that sustainability is: expensive, negatively impacts student recruitment and requires a new approach to decision-making.

The combination of the decision parameters (figure 6) appeared to have enabled the decision-makers to justify their interpretation of sustainability and therefore determine how sustainability may or may not be compatible with a specific decision. Their comments tended to resonate not only why sustainability principles would not work but that the integration of these principles could not shift the current decision framework or the desired outcomes.

Constructing sustainability within the operational units

In this next section, I apply the same framework (figure 6) of evaluation as I attempt to determine how decision-makers construct an understanding of sustainability from within the three auxiliary units. With the intention of observing how an individual's construction of sustainability is influenced by the place in which she is professionally situated within the institution, I divide this section into the Purchasing Office, Dining Services and Waste Management.

The Purchasing Office. The Purchasing Office is a non-revenue producing office, responsible for the development of university contracts, purchasing card audits

and placing any order above \$10,000. The Purchasing staff believes that they are understaffed due to budget constraints on the system. They feel as if they cannot be as pro-active with incorporating sustainability in the development of contracts as they would like to be. To characterize the role of the Purchasing Office at Northern University I reference quotes from a purchasing agent and the director.

Ms. Green, Director of the Purchasing Office explained:

... we are tasked with the responsibility of helping the university purchase and secure the services and goods for whatever their functions may be at the university. We look at objectively...we try and share what we have for knowledge relative to commodities, vendors etc and try to come up with the most responsible way to buy.

Ms. Green continues by explaining to me how purchasing agents determine what commodities they are responsible for on a regular basis and how that influences the decision-making process:

The way we are here, we are more generalists as opposed to specialists. Resources, we don't have enough people on staff to be specialists in only certain commodities. Except for one individual... I have got one who does specifically construction and renovations and as you know that's huge.

So I do need somebody special for that. And with the money that we get from the State, they don't hand out the money very often, and when they do you've got to make sure that you have done everything to the T....everything is documented... which normally it is.

You have to understand also, that we don't work in a vacuum. We work with whoever it is out in the field that needs something done. It could be an individual; it could be a committee. So if we're building a building, it's obviously a big group. It's huge and it's a big process. It depends on what it is we are buying.

So the decisions are ... it's a collective decision-making process. They will come to us...we will have our own and historical information. Who did we use last time? Who responded last time? And we go back to the well and bring them back into the other transaction that we are trying to work on. So it's a combination of the group from facilities saying... you know I have got these contractors that I would like to include, someone may say well, I know this company and we'll add them to our collective list.

Fran offers a perspective of the Purchasing Office through the eyes of a purchasing agent:

The role of purchasing is the last step before an order is placed... or it should be anyway. People or employees have p-cards so a lot of it can be done by themselves. Any large orders, we ask those kinds of questions such as why? Did you check anywhere else, so it's kind of a money saving... we have the resources and the experience to know if there are other vendors or to know if there is a model or to know if there is a sale going on somewhere... we can then give that information back to the end-user who might be a professor who doesn't have any clue... as to what is out there. We also have contracts that are set up which... we do that specifically so that for convenience and future reference we can ... send people to a contracted vendor... where we have already ironed out all of the pricing issues and all of the delivery issues and we have checked their references and... so we have done all of the upfront work and they can feel comfortable.

The Purchasing Office believes that they are perceived as the "purchasing police" at times when in reality they are acting as the legal conscience of university purchases. The guidelines posted by the system's level Purchasing and Contract Services office, state that:

Northern University requires competitive bids to keep costs at a minimum and to give interested suppliers an equal opportunity to supply goods and services to the University System.

Outlined in the policies and procedures for the Purchasing agents, this statement could be perceived as a primary obstacle to sustainability. For example, all of the participants claimed that the application of sustainability principles could be construed as being "fiscally irresponsible" and asserted that such decisions tend to "cost too much money."

In this section, I demonstrate how a Purchasing employee constructs her understanding of sustainability and how the decision making process coupled with an individual's experience and values influences this process.

Example one. Ms. Green, Director of the Purchasing Office, learned about sustainability principles as a decision-making criterion on account of three particular professional experiences in collaboration with the Sustainability Institute and a Prevent Pollution Program. These included: 1) review of the Sustainability Statement proposed for inclusion into all purchasing bids, 2) analysis of a proposed Computer purchase and disposal policy, and 3) collaboration on a project to increase the recycled paper content standard for the university. Ms. Green described her interpretation of sustainability:

Sustainability to me is what happens to the earth, to our civilization as a result of patterns and behaviors that we have got already in place...for example computers... a really hot item. Why didn't we think years ago... what are we going to do with these things? When we could see that the prices are going down... these are throw-always now. Why didn't we think five years ago... what is going to happen to these things? They are going to go into the earth, they are going to be buried... but then what happens? What comes back to us as a result of us burying these? And I don't know... I mean it gets made and it's got to go somewhere and how can we do it in a safer way. And can't we think about it sooner rather than when we see all these piles in the press that become hazardous and people get ill.

She follows up with a list of questions that she believes need to be considered when making a decision on campus. She contemplated:

How can we do better at recycling? Not having so much waste going into the truck. How can we do better? How can we buy better so you don't have to take so much off campus? What can we do? It's getting more into that framework but probably not enough.

Though she raises accurate questions, and appears genuinely concerned, she admittedly acknowledges that these are difficult questions for her and her staff to consider on a daily basis.

Ms. Green's construct appears to be a direct reflection of her experience with the development of the Computer Disposal Policy at Northern University as well as her experience as someone who recycles. In relation to the criterion that I

have proposed, these would be reflective of both professional/personal experience as well as the decision-making process. What I am unable to infer from her statements is whether or not the understanding that she has developed is transferable for her from one situation to another since she raised questions specific to her point of entry into the discussion; which is this case with computer disposal.

Example two. Jim is the manager of Central Receiving within the Facilities Department. He oversees the stock room that supplies the facilities maintenance employees, such as the plumbers and electricians, with the materials needed to complete their jobs. With a 10% mark up charged on every product that leaves the storeroom, Facilities Services continues to expand their available merchandise leading to an increase in revenue. For example, Jim is now responsible for buying and storing paper, which used to be strictly the responsibility of Printing Services. He explained:

My main focus is on plumbing, heating, and electrical for the maintenance people. That is the main kinds of things that I stock. Most of it are repair parts, electrical switches, outlets, things that break...lights, lot of lamps... in plumbing I carry everything from copper tubing to all of the different fittings for iron pipes to anything that might blow on campus... different valves...when you get out of that area.. then I will carry things like flashlights, batteries, hardware items, joint compound, things for small projects teams that are doing some of the small construction on campus... things like sheet rock, joint compound, ply wood for carpentry shop...all that kind of stuff... as I deal with these people a lot of them will come to me and say you know, I keep having to run down to Ace's or Home Repair for any particular part they might say... and I will say ok...well, if you buy it on a regular basis I will stock it. I don't try to stock just anything but anything that somebody uses on a regular basis I will put in stock.

Sustainability principles do not currently influence his decision framework when purchasing general stockroom supplies. The exception to this

is the paper that he supplies guided by Northern University's accepted standard of 80% post-consumer and 100% chlorine-free. Jim elaborated on his definition of sustainability with uncertainty:

... probably making the most or getting the best possible use out of any materials that you use... so you can reduce the amount of virgin materials.

Jim is situated at a middle management level within Facilities. His first experience with integrating sustainability principles into his own work, was with a committee that proposed the paper standard for the university with an increased post-consumer content. Unlike the participants from the Purchasing Office, Jim has not been required to apply a sustainability statement when awarding a contract or choosing a product. Central Receiving is not considered to be part of the Purchasing Office and therefore abides by Facilities Services standards.

Jim regularly buys and sells products on campus and has observed that cost effectiveness is the primary criterion for choosing a product. On a personal level, Jim seems interested and supportive of the integration of sustainability principles, though remains skeptical about the possibility of achieving a sustainable university:

...if the university really wants to talk about environmental or sustainability programs then they have to do more than create an office like the Sustainability Institute. You have got to get out there and the people need to know that this is part of the program that we're committed as a university... that we want to provide a better environment, that these are the programs that we are putting in place to do that. And part of that would be training them [employees] on ways to do that. Just because somebody puts out a directive and says ... we are going to do this... unless you tell people why and how... it's not going to happen.

He believes that the development of the Sustainability Institute (SI) is a motion towards developing a sustainable university but that the SI alone cannot reform the institution.

Jim expresses a commonly held concern articulated in many of the interviews. He recognizes the difficulty of making change at the ground level if there is not an administrative commitment and articulation of the objective. Jim asserts that for sustainability principles to become institutionalized at Northern University the administration must take a leadership role. His construct of sustainability appears to be responsive to the administrative support. He holds a vague notion as to the meaning and appears willing to consider sustainability more strongly if he knew that there was unqualified support from the top level.

Summary of Purchasing. With respect to purchasing, a participant's explanation of sustainability was reflective of a professional/personal experience(s) that they each have had. In the case of Ms. Green, her experience with the computer purchase and disposal policy and the sustainability statement dominated her explanation. Similarly, Jim's responses reflected his brief encounter with the Recycled Paper Committee and his daily responsibility of ordering products.

The rationale of the Purchasing staff as to why sustainability is not more readily integrated into their daily decisions and university contracts emerged as follows:

- 1) Sustainability principles cannot impact the bottom line.
- 2) Purchasing agents need to abide by a code of ethics and be accountable to their customer.

An analysis of these responses, through a constructivist framework of analysis,

concludes that those responsible for overseeing large purchasing contracts on campus understand sustainability as: being costly, potentially challenging the current structure in which operations is expected to support academics, and creating a situation in which the purchasing agents would not be able to meet their customers needs. A question raised in this discussion is how would support and enthusiasm from the administrative level influence the constructed meanings at the lower levels?

Dining Services. At Northern University, students who live on campus are required to hold a meal plan. This leads to the production of 10,000 meals per day not including 'grab and go' meals. With an average of two to three meals per day, six to seven days a week – students have impressive buying power.

Bryan, a Dining Services staff member explained the goals of Dining Services:

First and foremost the goal of dining is to meet our customer needs or to meet our guests... The buzzword is now guest. It went from client to customer to now guest. It's basically feed our guest. Provide our guest...the perceived quality that they demand... from today's food service environment. Everyone's perception is different. What we consider to be a quality product may be far different from what our customer wants as a product. Where we see quality may be the nutritional value or it may be any other kind of the social issues such as we are here today to talk about... and how that plays into it. Their value and our value (meaning Hospitality Services), in my opinion is to provide nutritionally balanced and appealing foods. The eye candy deal. Whereas a student may want more of the background of the social impact such as: was this organically grown? Was this product say...Was it veal from a little calf that was in a box all its life? So it's a myriad of issues. From our end it's the quality of the product.

Fred, also a Dining Services staff member added to Bryan's description:

Our role in addition to the obvious of providing nutritional food for our guests is to really create the second part of their experience here and that is the socialization component, to provide a mechanism for students and other guests to connect with one another outside of academics. Probably to begin to mold individuals choices in the larger

scheme of things and to expose them to different options that they probably didn't have growing up.... such as Biggie Burgers and vegan nuggets and stuff like that. This morning we were talking about a Moroccan Grill and stuff like that. To really provide some different cuisines and some ethnic trended cuisine that they may not have experienced if they grew up in New England. That is part of our role as well.

In separate accounts, Fred and Bryan emphasized Dining Services focus on catering to students as customers. Fred noted:

We are extremely responsive to the students. We do try to bend over backwards to meet what their needs are. We do try to meet the needs within the campus administration and after the administration, the third down the line would have to be the faculty and staff that frequent our facility. That is kind of the pecking order. They look at dining as a component of enrollment as well. If there is a good dining program it is the second satisfier in the overall spectrum. So in addition to what the community is like at the campus... dining is the second component that they work on to try to determine whether or not the students will come to your facility and dining plays a large role in that.

Dining Services is committed to responding to the students as customers and running a revenue producing business that supports the academic mission of the university. In this section I illustrate how sustainability is constructed by four Dining Services staff members: Cathy, a trained dietician and staff member; Fred, a Dining Services Staff Manager, and Bryan and Mike, both Dining Services staff members.

Example one. Cathy, a Dining Services staff member, is a dietary nutritionist by training. She has worked with Dining Services for ten years. In her tenure on campus, she has observed that student's eating trends continue to evolve from slower paced sit-down meals to an increase in demand for "grab and go" food at all hours of the day. Guided by popular consumer trends, students will soon have access to food on campus eighteen hours a day, seven days a week. Cathy

is very committed to her work with Dining Services and supports the mission statement. She explained:

We are aligned with what the university's mission is. We have these values that we came up with: we will provide superior hospitality service to our guests in support of the teaching research and public service mission of Northern University. We want to ... based on these things here...offer guest service, provide continuous improvement, sustainability is on there too...it's not just give them food and that's it.

The Dining Services mission statement claims that they are committed to guest services, walking the talk, and sustainability as core values. Dining Services personnel finds it difficult to incorporate each of the values equally in every decision. One of the challenges is Dining Services commitment to 'grab and go' which is demanded by the customers. Cathy noted:

Obviously if it's 'grab and go' they're all packaged. That's just the thing that I don't like seeing either. It's just all of this paper and plastic stuff going out the door. Personally I just hate to see that. I mean the incredible waste everyday... that is certainly a challenge.

Though 'grab and go' creates a dilemma when it comes to waste production, this has not stopped Dining Services from expanding its fast food services. The number of locations on campus where 'grab and go' style food has increased from two areas to five in the past five years. As we discussed Dining Services values, one of which is sustainability, Cathy quoted verbatim their commitment to sustainability verbatim from the values statement: "With that being one of our values... sustainability means we will do everything in our power to protect it [the earth] for the future." She recalled an educational training program that she attended, organized by the Sustainability Institute, and continues her train of thought:

...all I can think of is that fence on the beach picture. I always think of that... it's like it's not just about one side environmental... it's the how do we relate... how do we work together. It's I guess keeping the

resources... responsibly using resources on.... how do you deal with recycling and waste management but it's also generating ideas....of working together about all of that stuff too.

Cathy considered a sustainable food system and the implications it would have on the way that Dining Services currently conducts business:

We could tell people like where their food comes from but "Why would they want to know and why is that benefit?" You have got to think of that first.

The other thing is ... if we all collectively knew, I think that stimulates new ideas. It could, I mean maybe there's things that I don't even know that... how we are doing things that could be different.

Cause I mean, maybe things are ... well looking at a picture of stir-fry I am thinking, maybe we are buying something that could be done differently. I know that was a whole thing, do we cut the stuff [vegetables] ourselves and spend the money on the labor or do we buy it pre-cut, fresh. That was a huge deal.... A huge decision we had to make on certain products.

Cathy is sensitive to Dining Services need to respond to a bottom line commitment set by the annual budget process. In her responses she struggles with the fact that Dining Services is a business with a commitment to sustainability and that such bottom line reasoning is not necessarily incompatible with sustainability principles.

Example two. Dining Services has a written commitment to sustainability. Fred, a Dining Services staff member acknowledges the tension between pleasing the customer to provide revenue and remaining committed to sustainability. Fred explained his interpretation of sustainability:

Sustainability to me is really kind of in a nutshell... it's really the reduction of the sources and the reusing of items in other forms. It's really kind of capitalizing on both of those potentials... to try to cut the product, to cut the waste out from the start and then reuse what we

can on the tail end. And apples and all that kind of stuff are part of it... your compost and stuff are all kind of the end results and stuff like that. Kind of like a by-product of that stuff that we hope for by reusing it somehow along the way.

Fred's comment, "to cut the waste out from the start and then reuse what we can on the tail end" is indicative of his experience managing the fast food service on campus and exposure to the compost program. Fred continued his explanation (and apprehension) of sustainability:

It's a balance of economic responsibility to earthly sustainability, if you will. There is some sort of balance in the middle there because what happens if it's too far out of balance than you are not competitive to a certain degree with the rest of the market.

I still think there would have to be free choice. That we are not jamming ideologies down people's throats. But that part of the educational process would lead all people to say, you know that does make sense.

Though supportive and enthusiastic about Dining Service's commitment to sustainability and equally committed to pleasing the customer and raising revenue, Fred is apprehensive about the implications of a sustainable campus food system. He implies that a sustainable food system within the Dining Halls would emphasize values that may not be acceptable to the customers. He stresses in his statement that the integration of sustainability could potentially threaten choice, which is a strongly held value of Dining Services customers. Although Dining Services has expressed their commitment in a written value statement, the participants made it clear that this statement did not have financial backing by the administration and that the integration of sustainability principles could not be allowed to cut into their revenue stream.

Example three. Bryan, a Dining Services staff member, who participated in the development of their sustainability statement, has not warmed up to the vision of a "sustainable food system." Because his employer claims to be committed to sustainability, Bryan distinguished his own values from that of his employers.

Bryan stated:

I just think of it [sustainability] as how are we most effectively using our resources and what kind of impact are we doing to the environment.

He expanded on his statement and continued:

I am not ecologically conscious; I will be the first to admit that. I have done different things in the past in my own life where I have tried to be more ecologically conscious where it just hasn't worked because the people on the other end didn't really give a damn and that was that.

Bryan demonstrates a basic understanding of sustainability but indicates that he does not integrate these principles in his own life and believes that there is confusion when discussing a sustainable food system. He explained:

...a lot of people who don't understand the whole concept will say nuts and berries for the granola group...and everybody wants organic everything ... must be fresh... must be organic... you know look pristine and it's for such a small group of people... that's the perception that some people have.

Other people will say, "What is a sustainable food source?" and they will say, well it's a combination of things. It's something that is not going to negatively impact the environment. Something that reuses waste product possibly.... and completes the cycle.. the recycle-cycle. It depends on the level that you are talking at or to.

A lot of the line associates assumes that a sustainable food source means that you have got enough food wherever it comes from.

When you are talking about sustainability to some other people again...you are aiming at more organic food more ... and I think that is where some of the definitions are getting blurred, some of the lines of definition are getting blurred.

Bryan referenced experience that he had had in the business sector prior to working at the university:

It appears as if his experience in the retail business influenced his perception and acceptance of sustainability prior to his employment by the university. His experience at the university has not changed his mind or altered his view thus far. Though I can only speculate, it appears as if the constructs influenced by Bryan's previous professional/personal experience that he brought to the position seems to have solidified his point of view making it difficult for him to reconstruct his point of view with potentially positive experiences in his position at Northern University.

Example four. Mike, a Dining Services staff member, joined the staff after the value statement, which includes sustainability, had been adopted. He asserted:

Well, let's jump into sustainability. I can buy into anything that you say about sustainability but are you going to pay for it? I am not going to pay for it. I am not that hip on it so I am not going to pay for it. It ain't going to come out of my pocket. It's the typical US philosophy... we need a new prison... not in my backyard... no way it's going to happen and I am not going to raise my taxes to pay for this thing. That is exactly how sustainability is looked upon by everybody in business.

Similar to Bryan, Mike focused on some personal negative encounters with implementing sustainability principles with previous employers. He explained that throughout the design phase of an International Airport he refused to support the placement of a food pulper or a cardboard bailer because of a bad experience at his previous place of employment. The unfortunate experience that he refers to involved an incompetent workforce that was unreliable when it came to hauling cardboard and sorting food waste. Their behavior led to lost revenue for the company. He assumes, as a result of this experience, that sustainable behavior costs too much and requires extra work on the part of the employees and their managers. He carried this experience with him to Northern University and assumes the same philosophy in his role as a Dining Hall

manager. As we neared the end of the interview I inquired about his definition of sustainability and he thoughtfully responded:

Conservation of the earth around us and how can we continue to maintain the earth and still be able to enjoy life and participate in life and give back to our next generation, some of the stuff that we got.

When he is able to set aside his previous experience, it turns out that he has thought about issues of sustainability and how to communicate these concepts with the intention of provoking behavior change in the customer:

You need to inform the customer why we need to change... do you know that we use X-amount of cups a day and how much space that takes up in the landfill ... numbers like that. It just opens people's eyes. They think, WOW... I didn't know that.

Although he proposed some interesting suggestions on how to better communicate Dining's commitment to sustainability, he indicated that he is supportive of someone else coming into his dining hall to do this and was not interested in pursuing this line of reasoning or action. Mike acknowledges the value of integrating sustainability principles into higher education, although he not willing to use his allocated funds to support such projects. He explained:

That is where sustainability has got to come from. We have got to start educating them young and what this does to the environment and how we can save it... and at the same time pushing the politicians and the manufacturers to start doing something now to improve the situation.

Though Mike admits his disinterest in integrating sustainability principles, he feels strongly that the education process must begin at a formidable age. He has constructed an assumption that not only does the sustainability movement need to target the younger generations, but also politicians and industry. In summary the perspective and understanding of sustainability that Mike brought to Northern University appears to be a direct reflection of his experience in Food

Services in private industry. His experience at Northern University has only enforced his previous notions.

Summary of Dining Services

The Dining Services staff expresses a fundamental understanding of the notion of sustainability, which appears to be a reflection of their commitment as outlined in their values statement. While none of the participants doubt Dining Services commitment to sustainability, what emerges in their comments is what they have constructed as the 'reality of sustainability.' The Dining Services staff indicate they understand sustainability as a potential threat to the availability of choices on which dining depends for a successful business as well as a burden on their budget. Two out of the four examples illustrate how constructs of sustainability developed through a prior experience can be difficult to alter regardless of the potentially positive experience in the new setting.

Regardless of what kind of support is offered at the national level the two prominent concerns on the minds of the managers of Dining Services at Northern University are the need to: 1) respond to the students, and 2) act in a fiscally responsible manner. Although sustainability is one of Dining Services core values, there are very few decisions in which sustainability principles are prioritized. Dining Services staff has constructed a framework of sustainability that does not enable them to freely integrate these principles into their daily decisions or vision. Within their construct, sustainability is perceived to be an "add-on" which is too expensive. There is little vision from within Dining Services on how to develop a sustainable food system, nor are there incentives or rewards for such decisions. Next are some general observations as to why

sustainability is not more readily integrated:

- 1) Sustainability principles are a potential 'threat' to business rather than an 'advantage' [though they are committed to sustainability in writing]
- 2) Customer service is Dining Services primary responsibility with the ultimate goal of raising revenue.
- 3) Dining Services supports academics but is not responsible for teaching students.

The staff appeared to construct their meaning of sustainability grounded first and foremost in economic viability, as one would expect of a model influenced by marketlike behavior. Although the participants understood and supported Dining Services commitment to sustainability, as stated in their values statement, they were also certain sustainability would lead to a loss of revenue. The articulation of sustainability by Dining Services staff indicates that they believe that fully embracing sustainability principles leads to a threat to business.

Waste Management

Contrary to the structures of Dining Services and Purchasing, Waste Management was represented by a number of departments on campus including the Student Union, Housekeeping, Residential Life, Facilities Services, Housing Department, and Environmental Health and Safety. The eight participants that I interviewed involved with waste management on campus responded with explanations that reflected the context of their professional position at Northern University. Northern University's waste management system falls to the responsibility of two separate departments. Facilities Services, which reports to the Vice President of Finance and Administration, manages solid waste

collection. Solid waste includes both disposable and recyclable items such as wrappers and other packaging materials to paper and mixed containers. The Environmental Health and Safety Office regulate hazardous waste disposal, which ranges from chemicals from the laboratories and to electronic equipment and computer monitors. The cost for waste disposal is accounted for within the square foot charge established by the Responsibility Centered Management budget model whereas hazardous waste disposal is the responsibility of the Environmental Health and Safety Office.

Example one. The Business Service Center within the Northern University Facilities Department oversees the recycling and waste management contracts for campus. Bob, an administrator in the Facilities Department, is a proponent of recycling on campus. He begins his explanation of sustainability in a tone that reflects his frustration with the complaints and comments of his superiors about the cost of recycling. In the end, he retreated from this tone and noted how he himself embraces the notion of sustainability in his own actions:

In regards to sustainability... people say...we are doing all of this and now you want us to do that too. You want us to think different. God forbid. I would hope they do. The problem is that recycling costs us money. We can landfill cheaper than we can recycle.

UM... yet I am a closet "green sneaker" guy myself. I have a tree farm, I do my own thing and we can't be a throw-away society and not recycle and not be sensitive to what we are doing for generations beyond. Somebody has to change that. (big sigh) Whether the rank and file really buy into it in some ways, I don't think so. Yet most of us in Providence, we have to take our stuff down to recycling and you pay as you throw.

Bob details the manner in which waste is disposed of in his hometown of Providence. In his explanation of the Pay As You Throw (PAYT) system, he

connects the success of the program in his home town with the vision of implementing a program with a similar philosophy at Northern University. Bob has been at the university for over thirty-five years and has seen administrators and programs come and go, and a steady increase in the amount and cost of disposing waste. His own personal values and behavior have led to a greater sense of frustration with the economics of the current waste management system in which recycling costs more than landfilling. For a university that is pressed for funding, this financial model tends to lead to decisions compelled by economics rather than ethics.

Bob's personal commitment influences his construct of sustainability and what it means to integrate those principles into decision-making through his personal actions. After thirty-five years at Northern University, he has little confidence that Northern University will embrace sustainability principles in its decisions and practices. It appears as if Bob relies upon the construct of sustainability that he has developed outside of the university. The organizational structure has not been supportive of this construct making it difficult for him to integrate sustainability into his responsibilities as a professional.

Example two. One of the larger and consistent sources of waste generation on campus is Northern University's student union, which houses a food court organized by a "grab and go" philosophy. "Grab and go" tends to have less food waste but more material waste than a traditional cafeteria. "Grab and go" provides students with choices from Taco Bell to Godfather's pizza. All of the food items are wrapped individually so students have the choice to be on their

way or to eat in the food court. Dining Services has a renewable three-year lease with the Student Union. Until five years ago, the lease was held by a private company which remains currently on the periphery but would be interested to attain the lease again. Included within the lease is a per square foot RCM charge which covers energy use, waste disposal and recycling costs. Since Dining Services does not see the individual cost of each bag of waste within the RCM budget model, there is no form of accountability or built-in incentive for waste reduction.

Claudia made the link between waste disposal and sustainability. In this excerpt, she reflects upon how the system at the student union encourages visitors to separate their trash and recycle their bottles and cans. Her train of thought continues as she begins to make the connection between how one's behavior learned at the university carries out in one's home:

When you go home you think about it too. You know...even if you don't even know you are thinking about it you go... Oh, this is a bottle and it doesn't go in there. Or you have to say, if I bought the little refill bottle of downy instead of the big bottle like this than it wouldn't... even if you don't think about saving on the recycling some people would go. I wouldn't have as much trash and it wouldn't cost me as much to pick it up every week. We have to pay and have somebody pick it up period. But you know, I know that a lot of places you have to put their bags and pay per bag and ...there is a certain color for bottles and cans and all of this and that.

Unsolicited, Claudia enthusiastically pulls her trash can from underneath her desk to illustrate her commitment to recycling and the method that she has in place:

You can look in there (my garbage can) and you will see styrofoam cups and a plastic cup and before I empty that I'll go through there and go take the two bottles out and go and put them. I usually don't throw them away in my office; I'll usually take them with me. But I don't ever throw anything that is paper into that bin. And I think that that should make it easier for the university. The university should be

able to take advantage of that and it should make it easier. Society is already trying to train us.

In response to her definition of sustainability, Claudia initially responded in a somewhat reserved yet reflective manner:

I think that I can't come up with a specific definition of sustainability because every time I think I've got it there is something else...but if I had to do a short little blurb I would say that sustainability is something that I try to use in my life that will be both beneficial to the environment and me. And that it has to be in addition to being environmentally sound... it has to be financially sound. And that, that is where I run into the most problem... trying to BALANCE. Is it cost effective to do this? No. But is it environmentally effective to do this? Yes. It's really hard... Sometimes you go... I think I wish I could think of a specific example... like organic food... you could buy a lot of that but it doesn't taste any better and it costs way more and what do I have to give up to do that?

The last line of Claudia's response is not an unusual assumption for someone to bring to a discussion on sustainability. The notion that a standard comfort needs to be forsaken is a fear that is commonly expressed particularly at Northern University when there is discussion of developing new systems (ie. transportation, waste management) grounded in sustainability principles. What often goes undisputed is that something must be relinquished in the name of standard comforts and convenience.

Claudia is self reflective in her response, she is not quoting a value statement, but rather has begun to consider what sustainability means in her life beyond being an avid recycler. She raises a valid question about that trade-offs required to find the balance between economic viability, ecosystem health and human well being suggested by sustainability principles. Our conversation continues and she begins to reflect upon her comments regarding waste management and the working relationship she has developed with the Sustainability Institute (SI). She acknowledges that she thought she was sure

that she had a basic understanding of sustainability until she began to work on projects with the SI. These interactions expanded her assumptions about sustainability and compelled her to begin to reconstruct her understanding of the concept:

And...I used to think that sustainability was just recycling. That's all sustainability was. We just got to separate the cans and the bottles and the paper and the trash and if you did that you were a very sustainable person. Every time I turn around I find out there is something else in there. There's like the circle garden [the circle is landscaped using sustainable standards]. Until sustainability came into our lives, I never would have thought of the circle garden as being a sustainable anything. And I think that the biggest part of my learning came from because I work here and all of a sudden we developed that strong connection with the Sustainability Institute and I learned a lot from that...

Claudia oversees the waste management system for the student union on campus which has accessible and well-marked recycling bins on all four floors. At Northern University, the student union is funded by a student fee and governed by a student board of governors. In turn, Claudia's response seems to be reflective of both her responsibility (waste disposal) and the importance of including students in the solution. She concluded by acknowledging that sustainability is complex:

I think it is educating students to be more aware of the importance of what's leaving the building in any form...of trash. And that some of what they are doing can help the environment and it can make... the way that they are separating their trash. They can take a good portion of it and make it reusable again. ...And...I used to think that sustainability was just recycling. That's all sustainability was. We just got to separate the cans and the bottles and the paper and the trash and if you did that you were a very sustainable person. Every time I turn around I find out there is something else in there.

Claudia is a proponent of maintaining an accessible waste management infrastructure, contending that students learn from their surroundings. Since she instituted this infrastructure, recycling has increased in the building. In her

last sentence Claudia indicates that her understanding of sustainability is evolving in part to her work with and exposure to the projects of the Sustainability Institute. The examples of sustainability within the student union that have evolved around her, such as sustainable landscaping, have broadened and continue to shape how she constructs and makes meaning of sustainability.

Example three. Environmental Health and Safety (EHS) is a standard office found on all university campuses and is responsible for assuring that the university is in compliance with state and federal regulations for hazardous waste handling and disposal on campus. Mr. Lee has been with Northern University for four years and has worked at other universities around the country in a similar position. Before discussing sustainability Mr. Lee explained how Hazardous Waste is categorized at the university:

Under the EPA regulations, hazardous waste is a sub-section of what we call solid waste management. Solid waste management can include non-hazardous waste, which we do not handle in Environmental Health and Safety. And hazardous waste which falls under the responsibility of my office. There are six categories of hazardous waste that we have developed internally. That includes:

1. Chemical Waste
2. Biological infectious waste
3. Asbestos waste
4. Radiological waste
5. Universal waste
6. Electronic waste

Mr. Lee, an Environmental Health and Safety administrator, draws a comparison between the work of the Sustainability Institute and Environmental Health and Safety in his effort to define sustainability:

I see the sustainability part of the program trying to change people's way of doing things through changing the whole scope of the way people operate here at Northern University. The Environmental

Health and Safety (EHS) program tries to do that but at the same time realizes that with current practices we have to make sure that we are still in compliance with the environmental regulations. Ultimately, I look at the sustainability offices as the arm of the campus that ultimately, some day we are not using anything hazardous here at the university.

The purpose of an Environmental Health and Safety office is to assure compliance and avoid a situation in which the university could be fined or brought to court. According to the Environmental Health and Safety office, Northern University has a relatively respectable record for hazardous waste disposal compliance and no outstanding lawsuits. Mr. Lee notes that he has received strong support from the administration both in word and financial assistance in the event that an item or a system needs to be repaired to remain compliant. Two questions that arise are: 1) Does a compliant university imply a sustainable university?, or 2) Can regulations be developed to enforce sustainability?

Mr. Lee reveals his understanding of sustainability as it relates to his professional responsibility and also raises some questions for future research relating regulatory compliance standards to sustainability. He responds to the question of sustainability by making a comparison between the Environmental Health and Safety Office and the Sustainability Institute. His explanation indicates that he has constructed an understanding of sustainability through the process of identifying a distinction between his work in Environmental Health and Safety and that of the Sustainability Institute. Mr. Lee's construct suggests that sustainability leads to behavior change and increased awareness about issues such as hazardous materials distinct from modification by regulation.

Example four. Nancy has been a university employee for twenty-five years. She has experienced the evolution of the university, from a change in personnel to advances in technology. Now a manager of Housekeeping, she is very supportive of many of her staff members, who are diligent recyclers. On account of an experience that she had fifteen years ago at Northern University in which the soles of her shoes disintegrated after applying a finish to one of the gymnasium floors, she has persistently researched new environmentally friendly and safe cleaning products that are on the market. She expressed her view of sustainability confidently because of her interest in the application of it to her work at Northern University:

Well, I think of it as trying to use the resources that we have to the best of our ability without creating or using things that don't need to be used. It's sort of like trying to live within your means. ... instead of luxuriously all of the time. But it can be luxurious to live sustainably. Being respectful to our planet and other people. Not being selfish and I think we all have times when we do that. There are times when I throw paper in there and you know, I am not always conscious of it but trying to keep it mind.

While Nancy understands sustainability and has been interested in linking sustainability to her workplace, there is little to no support through the organizational structure.

Nancy has experienced an increase in her own consciousness when it comes to purchasing less toxic cleaning products for the housekeepers but the institutional commitment is not as formalized as she would like to see. Nancy's exposure to sustainability, which appears to have initiated her construct, emerged out of an early experience. When Nancy recognized the link between industrial products and human health, she began to act on her own accord outside of a system that requires the housekeeping staff to maintain the

buildings to a standard regulated by a health and safety code. She draws heavily from her professional/personal experience in her support of integrating sustainability principles into her actions; yet she is cognizant of the challenges within the organizational structure to consistently act on her goals.

Summary of Waste Management

Each of these participants has had professional/personal experiences, which have influenced ones construction of sustainability. The participants, in all of the case, have been challenged to reconcile ones personal values with professional expectations either in support of or despite sustainability principles.

At Northern University, waste management costs with the exception of hazardous waste disposal are a hidden cost in the square foot charge within the Responsibility Centered Management budget system. Even if the participants were interested in decreasing the amount of waste produced by their division or increasing the variety of materials that could be recycled, there is currently no economic incentive or organizational structure in place. The participants, with the exception of the individual who oversees hazardous material disposal, which is regulated at the state and federal level, criticized the university for not going far enough in their efforts. Each participant articulated a sense of commitment to a managed waste disposal system and an increase in institutional recycling.

The personnel representing waste management on campus unequivocally related their interpretation of sustainability to waste disposal (both hazardous and non-hazardous) and recycling. Their rationale as to why sustainability is not more readily integrated into daily decisions and contracts that they oversee emerged as followed: 1) The integration of sustainability principles cannot

impact the bottom line, and 2) Unless the university is being fined for not being in compliance there is not a concerted effort to move beyond compliance. An analysis of these responses, through a constructivist framework, leads to the conclusion that: the integration of sustainability into current waste management practices could potentially increase costs for already financially stressed departments. This potentially stems from the current costs of waste disposal which are buried in the RCM charges. The fact that a compliant university is not necessarily considered a sustainable university is indicative of the greater effort that must occur to achieve that vision.

Summary of Section I

The application of a constructivist framework to interpret the data was intended to provide some insight as to what influences a decision-makers understanding of sustainability and potentially justification for integration. Though some preliminary insight was gained in relation to how the combination of professional/personal experiences and organizational structure (figure 6), influences ones understanding of sustainability, many questions were raised as well. Some fundamental questions that arise from this analysis, which could extend the application of these findings are:

- What aspect(s) of this framework ought to be changed to have the greatest influence on ones constructed meaning of sustainability?
- Do the current parameters lead to actions in support of sustainability? If not, what other parameters ought to be present to influence decision-makers understanding of sustainability that leads to supportive actions?

The parameters that emerged in this study that appear to shape an individual's understanding of sustainability do not exist in isolation of one another. One's professional/personal experience does not take place in isolation of the organizational structure. Nor is it possible to determine the numerous influences outside of the organizational structure that have had an impact on the decision-makers' constructed meaning. In summary, the data does illustrate that decision-makers do construct an understanding of sustainability influenced by professional/personal experiences and organizational structure.

Section II: Constructing a vision of a sustainable campus

A related challenge that emerges from the empirical data of reconciling a shared vision of a sustainable institution reflects the complexity, abstraction, depth, and moral and ethical implications that sustainability purports. In this chapter I present a selection of the visions of a sustainable campus presented by the participants. I observed a correlation between the participants' definition of sustainability and his or her vision of a sustainable campus.

There was a general consensus among the non-administrators that leadership and a sense of commitment from the top levels is essential to achieve a sustainable campus. Jim, the Central Receiving manager, explained:

It has to be a top down. The number one thing is education....I think the vast majority of employees here would want to do the right thing if they understood what the right thing was. I don't think that you can assume that people will know what the right thing is because the environmental movement has been going strong for 30 years that after 30 years they should know. It's not what is on peoples minds in every day life. There is probably lots of different things that could be done... I mean all of the metals ... what happens to all of these valves that go bad. Are they just being tossed on a junk pile someplace or is somebody recycling all of that metal. I don't know... I don't know what happens to it but maybe if there was a program that maybe all of facilities people went to and says that all of this junk metal that you guys have been throwing away... here's how it can be made useful. Maybe something like that. That is not going to happen unless that comes from the top. That is not a bottom up... that is a top down. But I think...if they(facilities guys) understood that it was something that is good for the whole university as a whole... most of the people will work towards that but they have to be shown this is why we are doing that.... Sometimes there needs to be an explanation as to WHY and I think that is the part that ... that is the education piece that needs to be done for things to work. Communication too, but it has to be part of a focused university push.

The majority of the visions expressed by the participants tended to be representative of a substitutability approach to a sustainable campus reflecting what has been defined as 'weak' sustainability. The visions that I present

exemplify the vertical and horizontal delineation of the institutional hierarchy represented by the participants. There is evidence that emerges that people struggle with the image of a transformed or reformed higher education. I have characterized the visions under three headings:

- A vision of 'weak' sustainability
- 'Greening a campus' beyond regulatory compliance
- A sustainable campus – a reformed campus

I would argue that these three headings represent points of transformation along a continuum that begins with incremental steps of integrating sustainability to transformation and reformation.

A vision of 'weak' sustainability

A vision of 'weak' sustainability implies that the decision criteria are based upon notions of substitutability rather than institutional transformation. Substitutability infers an approach in which a product that is currently used or a system is replaced with that of another that takes into consideration the impacts of ecosystem health and human health. A vision characterized by 'weak' sustainability is not abstract and in fact requires little to no change in behavior on the part of the decision-maker.

Mr. Jones, the Director of Dining Services, expresses a vision that is not unlike what is currently taking place at the university today. He does not envision a university in which sustainability becomes the all-encompassing framework. Rather, he perceives a commitment to sustainability as something to be considered when economically feasible. He noted:

I guess I could say, "Yes" I could see it [sustainability] as being a part of the equation...I would be surprised if it ever became the dominant decision piece. But I mean we don't consciously go out and make decisions that say, "let's go out and screw sustainability." We look to make decisions that ... I mean we think about it... we say what's going to be the impact of this and we weigh it. So it is ... I think sustainability is always part of the decision-process and sometimes it's a heavier weight than other times.

Jim would not disagree with Mr. Jones perception of the need to make a financially viable sustainable decision. Nor would I add that any of the participants would disagree with this assumption. Mr. Jones is unable to construct a vision of a campus that places sustainability on equal ground with fiscal responsibility.

Coming from the perspective of the Facilities Department, Jim recognizes the role of engaging in a life-cycle analysis approach to purchasing. He does not envision a transformed university but rather new tasks incorporated into the work of existing personnel. Jim explained:

I don't think it [the university] would look much different. It's a way of life as opposed to a look. Maybe you would see more recycling bins or maybe you would see a certain look but I really think it's a way a life and an attitude as opposed to a look.

I would probably spend a little bit more time on the buying end of it ... looking for... once there was some training on what to look for in terms of packaging and in terms of the types of material... maybe we would be looking more to buying this type of valve or making sure this valve is made of a recyclable metal as opposed to this valve which is not as easy recyclable. Maybe an awareness would change which would lead to different practices ... more collection on the back end of it... instead of just tossing it away... having a collection point that we could sort out. Central Receiving could serve as a place to distribute and collect items to assure proper disposal. I could see something like that.

Similarly, Ms. Green's vision requires purchasing personnel to learn how to conduct additional product research and a raised level of awareness on campus.

I think we would probably be exploring other alternatives than the common norm for types of commodities that we buy. Or vehicles, we may be more cognizant of what are the emissions. We would be doing a little more research into product from a sustainable fashion as opposed to everything else. It's not part of the evaluation piece ... I mean it's in our RFP. Any negative findings relative to sustainability.. it's there...common sense. You would probably know which ones you would definitely have to watch out for. Some of the no-brainers but I am going to keep it there anyway just because we need to say it over and over again. We would be doing more research and trying to come up with alternatives.

Ms. Green recognizes that purchasing agents would have to pose new questions in the routine of identifying commodities and suppliers. The vision that she articulates does not extend beyond substitutability.

Nancy, a manager for Housekeeping, emphasized the importance of inclusion and education in her visions of a sustainable campus:

Well, if everyone was participating and everyone was properly educated, and the housekeepers knew the importance of it and felt a part of it I think that they would actually take more pride in it. There would be some who wouldn't who would always say, they're adding onto my job but in actuality if we were truly sustainable there would be more trash receptacles because we would be doing bottles and cans everywhere but if people were really...the volume is not going to change for us. It is either going to be trash or recycling but it might add a little time wise because now you are emptying three receptacles instead of two. When we first started recycling it did indeed add extra time.

Nancy raised a point that none of the other participants mentioned. She suggests that if community members were better informed and asked to participate in the process, they would be more apt to partake in actions that lead to a sustainable campus.

Dedicated to waste management on campus and studying Environmental Conservation as an undergraduate, Dana envisions a campus that is "environmentally friendly." She recognized that the waste management system

only responds to one of the environmental and cultural challenges on university campuses:

Things that have a lot of focus on things that are environmentally sound like promoting car pooling and public transportation. I don't know... waste reduction and ...I am not so sure that is even the answer. I would pretty much rather promote not taking a paper towel every time you wash your hands. Don't buy bottles of water all of the time... reuse...that would be sustainable to me... not recycling. Even when you recycle you are not aware of how much you generate. You can just throw it away and there it goes - away. With recycling you are bringing it back but you are still not reducing what you produce. So that is more of a focus of what I would look to.

Dana touches upon the challenges of changing personal behavior as it relates to purchase and disposal habits.

'Greening a campus' beyond regulatory compliance

The movement among universities to become "green" institutions manifests itself through the implementation of environmental concerns primarily through operational functions. These initiatives tend to focus upon energy consumption, waste reduction strategies, procurement and transportation. In this scenario, the vision of the physical campus certainly varies from what is experienced today, however, the organizational structure of the university is not unequivocally challenged in the process. Though their departments at Northern University have committed to sustainability as an institutional value, some participants admittedly committed in principle but not necessarily in action.

Mr. Lee, the Director of Environmental Health and Safety, has a holistic vision of a sustainable campus suggesting an approach that extends the notion of "greening" to the systemic level. He envisions a campus in which the

institutional systems for purchasing, waste management and transportation services are transformed. He noted:

I think that I would see a lot more involvement in "greening" programs here than I have seen. In areas, for example, working with purchasing for furniture purchases for example... working where facilities would eventually be pursued to buy totally non-toxic paints. And transportation issues... we would not have to worry about non-stationary sources of pollutants... what I mean by that are gasoline power vehicles or buses and things like that, where we were using essentially non-pollutant sources of energy.

Mike, a Dining Services staff member, who perceives sustainability with skepticism, was quite imaginative in his response. He explained:

An environmentally friendly campus ... that things like the Segways will be part of... to be able to communicate... its part of our educators like me... we're older people and we've got the experience but we're going to be phased out of the population. There's a lot of education with the administration, with academia... positions like myself who are an aging population, we are a tremendous... a lot of campuses like ours have tremendous parking problems. No one wants to go up in garages, they want to spread out ... they've got to find a way that we can move around. Whether it's the Segways, whether it's golf carts...whatever. That would keep the pollution down, the mobility up... making sure that the buildings and grounds are kept free from pollutants or... chemical pesticides and educate as we go along. Maybe little signs that say... this section is being done. All we ever hear about in food service is... we can't use this type of cup and you can't use this... We have not passed this education down. We need to communicate with each other. Whoever the leader is needs to buy into it and pass it down. Make sure that it is being done.

Mike also implied that the role of the leadership was an essential component in achieving a sustainable university. He purports that if the leadership does not support the integration of sustainability principles than the university cannot expect everyone else to respond.

A sustainable campus - A reformed campus

I conclude with Andrew's response, the Director of Procurement for Dining Services, who has had direct experience with the challenges of integrating sustainability into his work at the university. He realizes that the goal of achieving a sustainable university is a transformative one with cultural implications that requires a paradigm shift.

(long pause)... I think that is a huge culture change and culture change is hard to enact... and get to happen. Again, I think it has got to come from a lower level than that. I think you can have some victories and I think there are some good things that can happen.... I think a vision of a completely sustainable institution is... especially if you take an institution, an existing institution and try to impose a sustainable blue print on it is a real challenge.

Um... I think you could probably start an institution from scratch with people who all have the same vision... that would work well. Might be an easier task.

I think it is a difficult challenge....

These statements provide insight into the level of awareness and understanding of the transformative nature of a sustainable campus. I suggest that a majority of the visions articulated by the participants could be classified as reflecting the definition of "weak" sustainability.

Summary of section II: The vision of a sustainable campus

This study attempted to uncover where the challenges lie in moving an institution of higher education from the manner in which it currently makes decisions to one that embraces the principles of sustainability. The overall analysis emphasizes that a transformed university that integrates sustainability into curriculum, research and operations requires more than the implementation of education about sustainability, to change behavior. The participants

continuously accentuated the complexity, or what I would claim is the simplicity, of the decision-making process, the fragmentation of university operations, and the need for commitment to sustainability principles from the administrative level.

The results of this study also challenge two assumptions that repeatedly appear in the literature on "greening institutions of higher education." These assumptions state that there is: 1) a lack of understanding about what sustainability is and, 2) a lack of funding which restrains universities from making decisions guided by sustainability. While these are not incorrect observations, an understanding of sustainability and sufficient funding will not necessarily result in a sustainable institution. A compilation of the interview responses illustrates that there is an overall comprehensive understanding of sustainability but the decision-makers lack a visionary sense of how sustainability could transform the institution and an institutional rationale as to why "sustainability principles" ought to be prioritized and integrated.

Conclusion: Constructing an understanding of sustainability

In the literature I have observed that scholars and practitioners alike understand sustainability as a decision-framework and a descriptive word to explain a way of life, a body of knowledge, an educational objective, a criterion, a moral framework, a value or an alternative future (Common, 1995). Thus it is no surprise that an individual who is not familiar with the concept and has not engaged in education about sustainability nor has support to apply the principles to a decision framework is challenged to understand how sustainability principles are to be integrated into her daily decisions.

The data presented in this chapter leads to three fundamental observations:

- The participant's cognitive understanding of sustainability is influenced by ones professional/personal experience.
- The participants do not perceive a sense of commitment on the part of Northern University to sustainability and thus tend not to act on these principles on their own accord.
- The participants inability to comprehend the meaning and complexity of sustainability makes it difficult for the decision-maker to not only apply and integrate the principles into daily decisions but also contribute to a common institutional vision.

Jennings and Zandbergen (1995), support my findings suggesting that the meaning of sustainability can be constructed by decision-makers in various institutional settings. They write:

...first understanding how consensus is built around the meaning of "sustainability" and then understanding the ways in which concepts or practices associated with sustainability are developed and diffused among organizations...Addressing the sustainability issue does not simply require us to discover the best definition of sustainability and then to identify the best organizational practices, but it helps to understand how definitions of sustainability are constructed and accepted and then how practices encouraging sustainability are created and adopted over time by organizations, that is, how they come to have a "rule-like, social fact quality" and how they become embedded in institutions and organizational fields (Jennings & Zandbergen, p. 1016, 1995)

Supported by Jennings and Zandbergen (1995), the examples that I have chosen depict the manner in which the participants have come to understand and make meaning of sustainability and illustrate how meaning is constructed through experience and exposure to ideologies in the work place. Harmonious with the notion of constructivism, each of the participants articulated their knowledge of the term in relation to a specific experience they have had as a professional and/or in their personal lives. These are important notions to understand for a university invested in integrating sustainability principles. Gowin (1981) notes, "the construction of meanings enables the individual to connect knowledge gained in the past to both present and future experiences." Constructivist theory contends that because every individual has a unique experience, the concepts of one individual will vary from that of another yet within an institution these experiences are part of a collective whole. This has been illustrated in the participant testimony.

Overall, the definitions that the participants propose strictly express an interpretation to incorporate their experiences as they relate to the meaning of sustainability. They currently rely on a given set of institutional values and means by which to make decisions, which limit the ability within the system to

broaden the parameters. I do not suggest that the field of sustainability needs to agree upon a definition of sustainability, but rather as a definition is agreed upon through common consent at the international level, the levels of interpretation are subject to an individual's experience within a organizational institution.

Nonetheless, principles have been agreed upon by an international community and articulated in documents such as Agenda 21 or the Earth Charter. The continuous challenge lies in the action of how to link the global discussions and accepted principles to the local level. This study could be extended by researching how people best develop a cognitive understanding of sustainability: Through the application of a knowledge-based approach, through experience - or a combination of the two? Below are examples of questions some of which have been explored in this dissertation, that can assist in making the transition from the global discussions to the practical implications at the local level within an institution of higher education.

- How does the organizational structure of the university construct the meaning of sustainability? Is the current organizational structure of a university fostering constructive meanings of sustainability? What do these meanings reflect?
- What is the most appropriate university structure to implement a sustainability strategy?
- Who ought to be responsible for leading the development of a vision of sustainability for a campus? Administrators (top-down)? Staff (bottom-up)?

In summary, I am inclined to consider whether or not it is feasible to take a holistic concept [sustainability] and integrate it into a seemingly fragmented educational institution [university]. I make the argument that if the campus is a loosely coupled system interrelated by organizational structure, then one's

interpretation of sustainability is going to be representative of their division.

This begs the question of whether without leadership from the top, the aggregate of the sustainable system will lead to a sustainable campus? These findings are significant in that they illustrate where the decision-makers rationale originates.

¹ Simon (1997) proposes that the division of labor is divided between vertical and horizontal specializations. He writes "First, if there is any horizontal specialization, vertical specialization is absolutely essential to achieve coordination among operative employees. Second, just as horizontal specialization permits greater skill and expertise to be developed by the operative group in the performance of their tasks, so vertical specialization permits greater expertise in the making of decisions. Third, vertical specialization permits the operative personnel to be held accountable for their decisions" (p.23).

¹¹ Marketlike behavior as defined by Slaughter and Leslie (1997) as "Institutional and faculty competition for moneys, whether these are from external grants and contracts, endowment funds, university-industry partnerships, institutional investment in professors' spinoff companies, or student tuition and fees" (p.11).

CHAPTER VII

IMPLICATIONS -

PREPARING THE CULTURE OF HIGHER EDUCATION FOR THE VISION OF SUSTAINABILITY

One of the central challenges of the 21st century is how to achieve a more sustainable relationship between people and the environment. The security of people and nations, economic opportunity, and quality of human life depend upon the continued availability of a life-sustaining environment. Education is essential to enable people to make informed choices about their local and global environmental condition (p.10).

-National Council for Science and the Environment
2003 conference proceedings

The results of this study verify that the goal of integrating sustainability into the decision-making framework at Northern University evokes a critical challenge to the current organizational structure of the institution. The participant responses illustrate that decision-makers at Northern University are not accustomed to questioning the philosophical basis in which higher education is grounded nor the broader culture in which it is embedded. I am able to deduct from this study that Northern University does not appear to be adequately prepared to respond to the questions nor challenges posed by the integration of sustainability into the decision-making process.

In this chapter I integrate and build upon the theoretical framework, empirical data and arguments presented in Chapters four, five and six to

propose well reasoned implications and applications of this research. I have organized this chapter into four interrelated sections: Summary of the research, Implications, Applications and Future research. The summary provides an analysis of the pivotal points and conclusions of the study. This is followed by an overview of the implications of my findings that I present as potential leverage points for institutional reform. The applications section categorizes potential courses of action that emerged from the findings in an effort to overcome obstacles to integrating sustainability into the decision-making process. In conclusion, the results of this study point to areas of future research that include the development of knowledge systems for sustainability and the pursuit of institutional capacity to meet the needs of a sustainable institution.

Summary of research

In this research, I intentionally focus upon the decision-making process as one means of integrating sustainability into an institution of higher education, so as not to become absorbed by the broader debate of how a university becomes a sustainable institution. This study reaffirms that the decision-making process is a crucial leverage point for reform, a point at which to integrate these principles for the university to become sustainable. In the presentation of my theoretical framework, I propose three points of debate, which I respond to throughout the discussion and summarize below:

- (a) What parameters characterize the current decision-making process?
- (b) What within the process obstructs the integration of sustainability principles?
- (c) What influences a decision-makers construction of a rationale for embracing or rejecting sustainability in everyday decisions?

In response to (a) and (b), I illustrate that the conventional decision-making process at Northern University integrates three dominant parameters, which shape decision outcomes. I have characterized these as follows:

- Fiscal constraint influenced by marketlike behavior that is guided by a temporal scale and a customer service model.
- Academic and operational divisions within the institution define the roles and motives of the decision-makers.
- Institutional values, both written and implied, ground the ethical framework and justify the outcomes.

These three parameters are further influenced by the system of communication within the university due to the horizontal and vertical nature of the institution. In their current form, the combination of these decision parameters does not encourage the integration of sustainability into the process for many reasons. To provide further detail, I have devised a non-exhaustive list of potential obstacles that have emerged from this research:

- It is difficult for the university to act on long-term goals with long-term paybacks (greater than 5-10 years) due to short-term needs.
- Sustainability is not currently prioritized in all decision outcomes as a university wide commitment.
- There is a lack of visionary thinking as to how the culture of a university would transition with a sustainable framework.
- Formal education within the classroom is disconnected from the 'hidden curriculum' reflected by the actions of the university.
- Decision-makers do not consider the implications of the decisions and actions of the university because of the narrow definition of accountability.
- There is no system of accountability for university actions, outside of state and federal regulatory standards that impact ecosystem-health and human-health.

- The university tends not to apply the research acquired within its own walls to its own practices.
- The economic model favors a customer service philosophy further separating auxiliary and academic departments.

Following an extended analysis of the decision-making parameters, I ascertain that these parameters alone do not obstruct sustainability principles from being integrated however in various combinations they contribute to inhibiting the effort.

In response to (c), I analyze the data through the application of a constructivist theory framework. With the assistance of participant responses and supporting literature, I seek to demonstrate how professional and personal experiences within the university influence how individuals make meaning of sustainability. I propose that:

- The participant's cognitive understanding of sustainability is influenced by the relationship between organizational structure – manifest within power structures - and the decision-making process associated with professional/personal experiences.
- The participants do not perceive a sense of commitment on the part of Northern University to sustainability and thus do not act on these principles on their own accord.
- The participants varying degrees of comprehension of the meaning, complexity and knowledge of sustainability, makes it difficult for the decision-maker to apply and integrate the principles into daily decisions but also to contribute to a common institutional vision.

In summary, I assert that the combination of the decision-making framework influenced by professional/personal experience of the individual renders a basis of rationale that enables the decision-maker to not integrate sustainability into daily decisions.

Categorical implications of my findings: Potential leverage points for reform

The implications of this research are multitudinous and diverse. The nature of decision-making within an institution of higher education makes it difficult to single out a reason as to why sustainability is not currently integrated. A variety of obstacles emerged from this study, many of which have been identified by previous studies. Nonetheless, this study provides new insight through an in-depth account of which factors influence the decision process and where the power of decision-making lies. I did not attempt to prove or disprove a particular theory through this research but rather allowed a grounded theory to emerge from the data. The theory that has emerged consists of multiple levels of reasoning which reflects the complexity of the decision process and consequently the hegemonic structure of the institution.

Based on the results of my study, I describe what I consider to be four essential issues that I believe ought to be examined in greater depth with respect to the obstacles to integrating sustainability into the decision-making process within an institution of higher education. I present these as four potential leverage points for reforming the current decision-making process that obstructs the integration of sustainability. I characterize these as follows:

- A reassessment of the model of student as customer, consumer and inadvertent learner
- A recognition of institutions as educators – correlating operational behavior to academic outcomes
- An evaluation of mechanistic and cognitive models for rationalizing sustainability
- A transformation of the organizational structure

These categories emerged throughout the dissertation however most prominently in the data analysis presented in Chapters five and six. Next, I demonstrate how the results of this research either raise specific questions or challenge current thinking within these four categories.

1. A reassessment of the model of student as customer, consumer and inadvertent learner

One fundamental conclusion that I derived from this study is that students are being taught to be voracious consumers. Glickman (1999) confirms that "consumption has long been central to American identity, culture, economic development, and politics" (p.1). Most students enter the university with a thirst for the consumption of goods having been raised within a culture of consumerism in American society (Glickman, 1999). Students are treated as customers from the moment that they consider Northern University as a potential choice of an institution of higher education. Is this the message that higher education intends to communicate? If a university embraces an educational philosophy that students learn from everything around them – I contend that this would shift their perception of the student as a customer to a valued learner. This transition would allow institutional actions to be aligned with educational outcomes of the institution.

In addition to being wooed by the academic status of the institution and prominent research, students are offered: access to ethernet connections and cable television in their dorm rooms; cell phone plans for around the clock communication with the opportunity to upgrade phones and plans annually; food of their choice and as quickly as they demand it eighteen hours a day and

seven days a week; and waste disposal for anything they choose to dispose of with no limit as to how much they can produce. These are merely a few of the perks of attending Northern University. But Northern University continues to compete against similar institutions of an equivalent status with financial pressure to fill the incoming class with tuition paying students.

As discussed in Chapters four and five, higher education is slowly being enveloped by a global market system that forces the university to position itself, as would a business. This leads to the adaptation of market system characteristics such as the role of consumer spending in producing revenue.

Jacobs (1997) writes:

Today raising the level of consumer spending is generally regarded as the key political objective for any government: the principle measure of its success and – according to the conventional wisdom of prediction – the best indicator of its likely vote (p.49).

This philosophy has permeated the walls of higher education forcing students to be perceived as consumers first, and students second. Higher education will continue to contend with in Jacobs (1997) words, the “Politics of consumption” as it struggles to find a place within the global marketplace. He writes:

Personal consumption has become a dominant, even a defining feature of contemporary society, and its promotion probably the single most important objective of modern politics, more or less unquestioned right across the political spectrum (p.47).

In summary, the results illustrate that decision-makers are forced to contend with what ought to be considered complex lines of reasoning embedded within a neo-classical economic framework that prioritizes the bottom line before placing value on ecosystem health or human health implications. A vicious circular pattern of decision-making ensues and in the end, the customer’s demand is met.

2. A recognition of institutions as educators: the correlation between operational behavior and academic outcomes

Dewey (1938), one of the most distinguished educational theorists of the last century, formulated a philosophy of education that placed equal value on all sources of experience, not only what transpires in the classroom. He maintains a philosophy of experience that appeals to the foundation of democratic ideals and in a sense challenges educational philosophy to “discover and put into operation a principle of order and organization which follows from understanding what educative experience signifies” (Dewey, 1938, p.39). Dewey (1938) writes:

...a primary responsibility of educators is that they not only be aware of the general principle of the shaping of actual experience by environing conditions, but that they also recognize in the concrete what surroundings are conducive to having experiences that lead to growthAbove all they should know how to utilize the surroundings, physical and social, that exist so as to extract from them all that they have to contribute to building up experiences that are worth while (p.40)

Dewey claims that education is composed of experiences both in and out of the classroom. He stresses the importance of needing to step outside of the false boundaries established by a traditional education, which assumes that the learning experience takes place within the walls of a classroom (Dewey, 1938). He does not place the blame on the educators but rather on the vicious cycle that keeps the educators from breaking with the tradition. Dewey makes an argument for educators to cultivate a system that links that which is learned through lecture and reading in a traditional educational setting to one’s everyday life experiences.

Dewey (1938), Apple (1990), Martin (2002), and Orr (1994) have developed related arguments in which they accuse the current educational system of ignoring the impact that institutional actions have on students. I begin with

Apple (1990) who upholds the notion of the role of the institution as an educator.

He writes:

... since students, as they get older, now verbally reason with some facility, and can think through aspects of their social and cultural conditions, the curriculum content itself becomes even more important. There needs to be continuous and increasingly sophisticated justification for acceptance of the distinctions and social rules they learned earlier. This justification needs to set the ideological limits of such thinking by embodying 'appropriate' ways in which students can begin to reason through the logic of why the institutions and the culture they interact with everyday are in fact legitimate [Apple, 1990, p. 83).

Similarly, Martin draws from multiple examples in which she attempts to define and illustrate the power of "institutions as educators" (Martin, 2002). She notes:

Acknowledging the contextual dimension of education, a cultural-wealth perspective designates the various institutions that transmit the culture's stock, rather than people and things, as educational agents...Definitions abound that reduce education to a purely rational process whose participants always know what they are doing, do whatever they do voluntarily, and invariably act with conscious intent (Martin, 2002, p. 38).

In her explanation, Martin (2002) is not only referring to universities but also government agencies, nonprofit organizations, neighborhoods, businesses, museums etc. Martin (2002) notes that by not recognizing these societal institutions as educators:

...definitions that tightly bind education to intentions, values, consciousness, and rationality allow one the satisfaction of withholding the label "educator" from, for instance, the manufacturer of a computer game whose aim is an escalating body count. But like it or not, that company is sending messages about the acceptability of violence and cheapness of life (p.39).

Martin asserts that all actions, intended to influence educational outcomes or not, have educational messages. She (2002) writes:

...if a society's educational agents are to act responsibly and be held accountable for whatever miseducation they promote, it is imperative that they admit to being educators (p.40).

Not unlike Martin, Orr (1994) recognizes the urgency to search beyond the traditional paradigm of teaching and learning to reevaluate the goals of education. Orr (1994) writes:

It is paradoxical that buildings on college and university campuses, places of intellect, characteristically show so little thought, imagination, sense of place, ecological awareness, and relation to any larger pedagogical intent...The deeper problem is that academic buildings are not neutral, aseptic factors in the learning process (p.112).

The thrust of Orr's argument is that the design of the university campus directly influences the educational experience of the students. Orr (1994) notes how design and construction on university campuses embodies the hegemonic relationship within the institution, the separation between technical standards and ecological principles. Waste and inefficiency are not a concern of university administrators, and that the physical infrastructure of university campuses is not valued as pedagogy.

In this section, I extend the arguments of Dewey (1938), Apple (1990), Martin (2002) and Orr (1994) to the broader systems outside of the university that are perpetuated within higher education, and the pedagogical implications of these broader systems. The work of these scholars supports the findings of this research. I draw upon their reasoning to ground the argument that the actions of the three auxiliary units (Dining Services, Waste management, Purchasing) impact the educational outcomes of the students who attend Northern University. By not seeing that operational units and institutional actions provide educational value to the student, the integration of sustainability is trivialized. In

this section we are provided reasoning for why and how university decision-makers ought to extend their current definition of institutional values to incorporate sustainability within the current decision-making framework.

Dining Services. If Dewey, Martin, Apple and Orr were to evaluate the unconscious educational messages that the students are exposed to in the Dining Halls, they might reflect upon: the abundance of choices offered to students; the quantity of food waste that results from the abundance of choices and quantities; the distance the food traveled to arrive at the university; the number of hours the dining halls are opened; a dearth of intentional education about healthy eating; the lack of local food used to prepare the meals. This list is not meant to imply that Dining Services is managing the operation ineffectively; on the contrary, this reflects their ability to best respond to student demands. Northern University spends more than three million dollars per academic year on food, which illustrates their inherent market power.

There are challenges involved in shifting the Northern University campus from one that depends upon the global/national food system to one that relies upon a sustainable campus based food-system. These challenges range from the amount of food needed to serve 10,000 meals per day to the climatic challenge of a four-season environment. However, this is not to say that such a shift is not feasible or for that matter, taking place at other institutions within a similar climatic environment. In its current form, Dining Services continues to perpetuate the demand for cheap, accessible, industrialized agricultural production. The current

decision making framework that was depicted through this research illustrates how this occurs.

By default, Dining Services supports industrialized, large farm agriculture because of cost effectiveness, efficiency and the ability of large industrialized farms to supply food in large quantities year round. Dining Services administrators currently do not consider that the number of farms in the United States which have shrunk from 6.8 million in 1935 to 1.25 million in 2000 (Gebremedhin & Christy, 1998) to be of concern to them. In 1992, 20% of the nations farms were classified as large farms and operated 54% of the total land in farm use. Approximately 83% of the farm products sold were produced in these large farms (Gebremedhin & Christy, 1998). In fairness, the Dining Services management does not necessarily ascribe to a certain agricultural practice, however the current system of accountability does not hold them responsible for their actions outside of their duties within the university system. Dining Services is responsible only for satisfying the customers desire for food and to produce a respectable revenue stream for the university system. Dining Services is a self-funded business within the university system and receives no financial support from tuition dollars.

Institutions of higher education including Northern University contribute to these agricultural trends by virtue of the nature of their decision criteria. At the national and international level, the interaction between institutional and economic forces has led to the current state of agriculture in this country. According to Gebremedhin (1998), these forces include:

...access to new technology for production, economies of size and capital requirements, the land distribution and forms of ownership, operator's managerial ability, availability of markets both within and outside the country, price instability, credit financing, opportunities for employment outside agriculture, transportation networks connecting urban to rural areas, government regulations, and commodity programs (p.4).

Dining Services has embraced a contemporary food service philosophy and is concerned with pleasing the customer and providing fresh and desirable meals to the students. Students are not exposed to or actively concerned with the source their food.

On a national level, current trends in agricultural production have raised considerable concern for both policy makers and agriculturalists.

These concerns focus upon:

- The alarming rate at which the number of small to medium sized farms has been declining and the increasing rate of average farm size over the years.
- The disproportionate percentage of total agriculture production now being generated by a relatively small percentage of farms, in the larger size categories, followed by a steady downfall of social and economic conditions of the small farm sector.
- The constant rising percentage of farm family income, which is derived from nonfarm sources.
- The migration of the farm population from rural to urban centers for better economic opportunities and social services.
- The adverse impacts of large scale farming on the environment (Gebremedhin, 1998, p. 2)

Based on my findings, if the university were to shift to a sustainable food system, the decision-makers would have to extend and reevaluate the prevailing decision criteria such as cost, availability, quantity to agricultural inputs, size of farm, and locale of production. According to

Lang (1999) to move to a more sustainable food system, four key areas have to change:

- How food is produced and distributed (nature of production)
- What people eat and consumers demand (consumer culture)
- A broadening of the definition of the environment to include medical notions of health
- Modernization and transformation of institutions and policies toward institutional reform (Lang, 1999)

Lang (1999) explains:

If re-localization is to be the hallmark of a more sustainable food economy, the issue is: How can it be driven in such a direction? What political changes are required to help make it a reality? (p.201).

The question that Lang proposes expresses the underlying interest of this dissertation. Though Dining Services at Northern University has made an effort to incorporate certain sustainable practices into the current food service system, there remain organizational barriers, creative solutions, and consumer education that have yet to be addressed if the goal of a sustainable campus food system is to be achieved.

Waste management. Despite the standard stream of recycled paper, refuse from the dining halls, and other office waste, solid waste generated on a university campus tends to be consistent and influenced by: the types of activities, the beginning and ending of projects, the end of a semester, the renovation of a building, the relocation of an office, the accumulation of several years of wastes in a lab or the desire to upgrade one's computer (Creighton, 2000). Due to these multiple sources of waste, sustainability

needs to be applied not only to the front end of the consumer cycle through the Purchasing Office but also to the end of the cycle managed by the Facilities Department.

Based upon my findings, today's students who attend Northern University students and staff are able to dispose of anything, in any quantity, and at any time. The Northern University community, including students and staff, are not challenged to make choices that ultimately lead to a reduction in waste. In an educational context students are not being challenged to consider: Where is my waste disposed of? What impact waste has on ecosystem health and human health? Is only regulated hazardous waste a concern for citizens? Where will Northern University dispose of waste once the nearby landfill that they depend upon is closed? How might the costs for disposal increase at this time? Landfills continue to displace millions of acres of land from uses such as agriculture and conservation easements (Tammemagi, 1999). Will the university take this into consideration as it looks to the future of waste production and disposal? Based on my findings unless compliance is involved, Northern University does not make an effort to consider responses to any of these questions.

Tammemagi (1999) proposes that three general parameters of waste management need to be applied when a university considers the integration of sustainability into the waste management system:

- **Protect health and environment:** Waste management and disposal must be conducted in a manner that does not pose a risk to human health or the environment, either now or in the future.

- Minimize the burden on future generations: Wastes should be managed in a way that does not place a burden on future generations.
- Conserve resources: Nonrenewable resources should be conserved to the maximum extent possible (p. 32).

Universities committed to integrating principles of sustainability into their system, ought to employ an integrated waste management (IWM) process.

Integrated waste management tends to have a:

...plan that follows the life cycle of consumer products from cradle to grave, seeking to maximize the useful life of the resources that are involved (Tammemagi, 1999, p.34).

The objective of this approach is to minimize the impact of disposal on ecosystem health and human-health through the application of multiple waste management techniques such as source reduction, reuse, recycling, treatment and landfill disposal. Until waste production is recognized as a cultural component of a university, the current trend of consumption and disposal will persist and the unconscious educational messages will perpetuate a high level of production and continue to displace the center of responsibility from the producer to the disposer (the university).

Purchasing: The Purchasing Office is the primary office on campus that oversees campus contracts and purchases that are over \$10,000. On average, they oversee the transaction of over \$200,000 per day throughout the fiscal year. Purchasing agents are responsible for helping the university purchase and secure the services and goods for whatever their functions may be at the university. At Northern University, product

contracts range from computers, office equipment and supplies to food contract, athletic equipment, to construction and renovation materials.

Though the Purchasing Office at Northern University appears to be committed and interested in integrating sustainability principles, they have not been trained to negotiate contracts that consider such criteria.

According to Lyons (2001):

Buying products which have been made using fewer non-renewable natural resources helps preserve the environment. An effective purchasing contract can dictate what products are made from and how they are made, packaged and shipped, utilized and disposed of. Criteria to deal with environmental preservation are critical and should be contained in the contract (p.7).

Working within the current decision framework, purchasing agents tend to prioritize cost savings over other criteria. Of the three operational divisions that I researched, Purchasing appeared to be the least connected (with respect to human relations) to the students because of the nature of their work and the size of the contracts with which they work. Though the purchasing agents may not interact with the students, the products that they purchase do. For example, they manage many of the large contracts such as Nike, Coca-Cola and Boise Cascade whose products come in direct contact with the students and thus influence the messages of the hidden curriculum.

If sustainability is regarded as an educational value, the university ought to embrace these values within its own actions. In theory, this would empower decision-makers within the institution to act on these values. If higher education

embraced sustainability as a philosophical framework, the decision-making process could potentially be broadened and institutional actions would be linked to educational outcomes.

3. An evaluation of the mechanistic and cognitive models for rationalizing sustainability

In the analysis of my results, I observed that decision-makers formulate the rationale for their behavior in two modes that I will label: mechanistic rationale and cognitive rationale. I introduce these terms for the first time in this section, because these are yet constructs that emerged as a way to interpret and categorize my data. In the context of this research, I am concerned with how the interaction between the mechanistic and cognitive rationales lead to decisions that could be characterized as unsustainable. Therefore, we can ask what within the mechanistic and cognitive rationale frameworks can be altered to influence a decision outcome that considers sustainability? Though I am unable to respond to this question based on these findings, I propose the following for further exploration.

I define mechanistic rationale as reasoning, shaped and bound by the decision-making framework and the organizational context in which the decision is made. I elaborated upon these influences in Chapter five. Whereas a cognitive rationale reflects an individual's constructed understanding of the task at hand influenced by professional/personal experience. This I elaborated upon in Chapter six.

What I have labeled mechanistic rationale is not unlike Simon's theory of bounded rationality. He writes:

Because administrators satisfice rather than maximize, they can choose without first examining all possible behavior alternatives and without ascertaining that these are in fact all the alternatives. Because they treat the world as rather empty and ignore the interrelatedness of all things, they can make their decisions with relatively simple rules of thumb that do not make impossible demands upon their capacity for thought. Simplification may lead to error, but there is no realistic alternative in the face of the limits on human knowledge and reasoning (Simon, 1997, p.119).

Simon (1997) has observed and emphasized that decisions are commonly made within a simplified framework of reasoning that does not consider ramifications beyond the task at hand. More specifically, he refers to this pattern of behavior as *habitual rationale* which he claims, may serve a purpose but happens in a conservative cost and time saving manner. In this case, the decision is likely to occur according to the rules and regulations of the organization.

With respect to cognitive rationale, the findings illustrated how decision-makers are influenced by experience both in their professional and personal lives. This is not a new notion, however, what I find intriguing is how this experience becomes a basis for a rationale when interacting with the mechanistic decision-framework. The examples that consistently arose in individual conversations, particularly at the administrative level, were concerned with a negative experience on campus (ie sustainable landscaping). My interpretation is that the administrators have become so ensconced in the mechanistic rationale that they are unable to decipher the objectives and implications of a successful sustainable landscape project; thus suppressing any form of intellectual reasoning that involves the educational outcomes and ethical implications that such projects have. I propose that the interaction between mechanistic and cognitive rationale behavior is the juncture at which traditional decision-making theory can be extended by consideration of sustainability. The question that

ensues is: How can decision frameworks be extended to reverse what Simon observes to be the treatment of the “world as rather empty and ignore the inter-relatedness of all things” (p.119)?

4. A transformation of the organizational structure

This research has led me to support the argument posed by Meyer and Rowan (1991) in their article, “Institutionalized organizations: Formal structure as myth and ceremony”. Meyer and Rowan (1991) reason that an explicit distinction ought to be made between the formal structure of an organization and that of its day to day work activities (Meyer & Rowan, 1991). They argue that the formal structures of a majority of organizations in the post-industrial society strongly reflect the myths of their institutional environments rather than the demands of their work activities (Meyer & Rowan, 1991). These formal structures manifest themselves through organizational charts, listings of offices, departments, positions, committees and programs. On paper, these organizational elements are linked by mission statements, explicit goals, and policies which are the basis for the rationale as to how and to what end these elements are to be fitted together to make up the organization. Meyer and Rowan (1991) note that it is these very structures which are the makings of a modern bureaucracy. They write:

The essence of a modern bureaucratic organization lies in the rationalized and impersonal character of these structural elements and of the goals that link them (Meyer, 1991, p. 42)

Meyer and Rowan (1991) have identified:

...prevailing theories assume that the coordination and control of activity are the critical dimensions on which formal organizations have succeeded in the modern world (p.43).

The underlying assumption of this argument is that organizations function based upon a formal blue print. For example, rules and procedures are followed, hierarchy respected, coordination becomes routine and day to day activities conform to the formal institutional structures.

Related to this argument is an observation posed by Weick (1976) that organizations are predominantly loosely coupled systems in which structural elements are only vaguely associated with one another. This was observed in the manner in which Dining Services, Purchasing and Waste Management personnel interacted but not necessarily communicated at all times. Extending this argument Simon (1997) writes:

Most organizations are oriented around some goal or objective which provides the purpose toward which the organization decisions and activities are directed. If the goal is relatively tangible – ie. making shoes – it is usually not too difficult to assess the contribution of specific activities toward it, and hence to evaluate their usefulness (p.147).

Simon's point emphasizes the current challenge within the University of integrating sustainability principles. Within the current structure of Northern University there is not a unified accepted aim to become a sustainable institution. There is a financially supported effort but not necessarily with unconditional top-down support. Based upon the data from this study, the unified goal appears to be the need to respond to the customer within fiscal boundaries and to increase revenues. The insight gained through this study ultimately feeds into the broader discussion of how do principles of sustainability become institutionalized.

Institutions of higher education have an opportunity to play a significant role in society's transition to a more sustainable state. The 2003 World Summit

on Sustainable Development recommended to the United Nations General Assembly that it adopt a decade of education for sustainable development to commence in 2005 (Calder & Clugston, 2003). Furthermore, there is an international recognition that universities ought to begin to embrace and act upon our current unsustainable trajectory through the education of the student body.

As illustrated by this study, it is easier for a university to agree in principle than to respond in action. In its current organizational structure, I do not believe that institutions are prepared to be transformed. There are numerous examples of universities that are striving to respond to this call to action but it is not clear if these attempts are leading to an educational outcome of students prepared to shift the current trajectory from one of unsustainability to sustainability.

Summary of categorical implications: Will a reformed system lead to a sustainable university?

If the four categorical implications that I characterize were acted upon, the underlying assumptions of the institution would be transformed. To reiterate, these proposed actions would include:

- A reassessment of the model of student as customer, consumer and inadvertent learner
- A recognition of institutions as educators – the correlation between operational behavior and academic outcomes
- An evaluation of mechanistic and cognitive models for rationalizing sustainability
- A transformation of the organizational structure

Again, I do not propose these actions as an exhaustive list but rather representative of what emerged from my findings.

I have created a table (see table 3) that depicts the a list of criteria that represents how decisions are currently made in comparison to the criteria in which decisions guided by sustainability principles would be made. There are two columns in the table: current decision-making criteria and decision-making criteria guided by sustainability principles. The current *decision-making criteria* reflect the process and rationale that emerged from this study. The *decision-making criteria guided by sustainability*, reflects the reformation of the current system but is not grounded in institutional or organizational theory or practice. In theory, the sustainability criteria portray a democratic, environmentally aware, socially just, visionary, and fair campus that supports the local economy but also a global worldview. I do not propose how the current criteria evolve into that guided by sustainability principles based upon this research, though I intend for the analysis presented in my implications and applications to offer some insight and possible suggestions. Three questions that arise in relation to table 3 are:

- Will a reformed decision-making theory lead to a sustainable university or merely a new set of underlying assumptions that become “frozen” into patterns of behavior?
- Does the column of sustainability criteria conjure up an image of an unattainable utopia, or set our sites on a goal for a reformed system?

- Does the sustainable university produce learning outcomes that lead to a sustainable society?

CURRENT DECISION-MAKING CRITERIA	DECISION-MAKING CRITERIA GUIDED BY SUSTAINABILITY PRINCIPLES
Customer/individual focused	Community focused
Fiscal constraint	Balancing economic viability, ecosystem health and human well-being
Short-term outlook recognizing long-term commitment	Long-term outlook and commitment complimented by short-term goals
Transparency in communication/information making	Genuine participatory decision-making process
Imperfect system of communication	Broad-based, inclusive system of communication
Academics vs. Operations	Everyone is an educator
Survival of parts more important than the whole	The whole is greater than sum of parts
Linear interpretation of accountability	Broad interpretation of accountability
Committed to simplicity	Recognition of complexity
Ethical framework: independence	Ethical framework: interdependence [humans are dependent upon the biosphere for health, wealth and survival]

Table 3: A comparative analysis of the current university framework and the application of sustainability principles

The choice faced by institutions of higher education is between passive or purposeful determination. Passive determination leads to unsustainable

practices and maintains application of the criteria depicted in the first column of table 3. In this scenario the system falls prey to the existing power structures, decision-making processes and institutional values that prominently lead to decisions that could be characterized as unsustainable. Whereas, purposeful determination opens up the opportunity to reflect upon the existing state of institutions of higher education and take responsibility for future generations by balancing the impact of economic viability with ecosystem health and human well-being. The reformation of the current system, depicted in table 3, appears to be representative of the goals of a sustainable institution, yet it is not possible to know without example, whether or not the adaptation of these characteristics would lead to the realization of the desired outcomes.

Practical applications: Steps to an integrative decision-making process

The implications emphasize four areas that I identified as primary obstacles, and presented as potential leverage points for reform. In this next section, I present five potential applications of the findings. These stem from recurring participant responses, and present potential actions to take to overcome prevalent barriers. For the purpose of this discussion, I propose six general applications which I categorize as:

- Striving for short-term successes
- Valuing the actions of a decision-maker
- Extending the definition of accountability
- Linking faculty research to institutional decisions

- Educating students as drivers of integrating sustainability into higher education

Striving for short-term successes. The participants were quick to comment on what they considered to be sustainability projects that were not deemed successful (ie. a sustainable landscaping project) as opposed to recognizing the numerous projects on campus that have succeeded (ie. the compost program, the application of transportation demand management system etc). I detected a trend in the responses which illustrated how the decision-makers, especially those who held administrative posts, positioned themselves on a sustainability issue in a manner that did not advocate for an outcome rooted in sustainability. Based on this analysis, I would argue that a number of short-term successes could potentially lead to a level of support for the decision-makers to comfortably integrate sustainability principles more readily and confidently into daily decisions. Such an approach may lead to an exploration of sustainability indicators for the purpose of determining potential short-term projects with a predetermined measurement of success.

Valuing the actions of a decision-maker. Regardless of position, decision-makers respond to daily demands of the university community. The participants implied that in response to such demands they make 'informed' decisions towards a specified end.

Simon (1997) offers an analysis of decision-maker behavior that supports what I observed in the data. He writes:

A great deal of behavior, and particularly behavior of individuals within administrative organizations, is purposive – oriented toward goals or objectives. This purposiveness brings about an integration in the pattern of behavior, in the absence of which administration would be meaningless; for, if administration consists in “getting things done” by groups of people, purpose provides a principal criterion in determining what things are to be done (p.3).

At Northern University, an ‘informed decision’ reflects: the mission and values of the university, the departmental values (academic vs. operations), and fiscal constraint. Within the conventional decision-making framework these are unspoken variables which guide the process and render a particular outcome.

When challenged to integrate sustainability into a decision, the decision-maker will most likely be required to gather additional information and reflect upon the implications of that decision. The integration of sustainability establishes a new framework and therefore expanded criteria for the decision-making process. An indicator of Northern University’s commitment to sustainability will be intentional education for decision-makers to guide and best inform them how to incorporate sustainability into their decisions and actions.

Extending the definition of accountability. At first sight, the core values of the institution (academic freedom, commitment to the pursuit of knowledge, quality, integrity, community and diversity, accountability, and engagement) would not appear to be at odds with

sustainability; nor am I suggesting that they are. One obvious step to integrating sustainability into the decision-making process is to adopt it as an institutional value. Though feasible, as illustrated by the findings, inserting sustainability into a written document does not guarantee a move towards action. I propose three definitive steps to adopting sustainability as an institutional value:

Proposal 1: Document the adaptation of sustainability as an institutional value with support from top administrators and broader community (Does this happen through a democratic process as did Northern University's strategic plan?)

Proposal 2: Identify and acknowledge the current inherent values that dominate institutional decisions (ie. choice and convenience) and determine how and if these values are in conflict with sustainability. (If so, how through a democratic process are these reconciled?).

Proposal 3: Redefine accountability by broadening its current meaning beyond that of hierarchical concerns.

I would argue that Proposal 3 if enacted would help actualize proposal's 1 and 2. In the Northern University Academic Strategic plan, accountability is identified as a core principles of the university and central to the academic enterprise. The document states:

All members of the university community are accountable to each other and to appropriate external audiences for their decisions and contributions. To this end, we will make our work public and expose our actions to review, evaluation, and healthy critique (2002).

In a decision scenario, accountability can be interpreted in a variety of ways dependent upon the situation. Similar to the definition in the strategic plan, all of the participants repeatedly responded to the question of accountability in one of two ways: 1) everybody in the university reports to somebody, and 2) people are held accountable for

levels of productivity, and conduct, as well as legal issues. The definition of accountability adapted by a university needs to be broadened if the system incorporates sustainability.

Grounded in my findings, I contend that the definition needs to extend beyond hierarchical concerns and reevaluate its sense of accountability to ecosystem health and human health. In the current definition of accountability adopted by the university, there is no recognition that the implications of most university decisions ranging from the purchasing of office products and lab equipment to waste disposal have a "sphere of influence" that the university does not feel obligated to take responsibility for. Though it may not be feasible for the university to be accountable for all external decisions, it may be feasible to set targets as to what impacts the university does not want to have. For example, the university may want to assure that a percentage of all products purchased by the university are produced by a company that follows pollution prevention protocol; can be disposed of in a non-harmful manner; or do not depend upon child labor; etc. Presently, such guidelines are not considered and in fact are perceived as unattainable and superfluous.

Linking faculty research to institutional decisions. Northern University is known for its research and educational opportunities in the fields of nutrition, agricultural sciences, pollution prevention, civil engineering, public health and business. Nonetheless, the data portray a campus in which there are no on-going forms of communication

between these academic departments and their counterpart auxiliary units. Daily decisions are being made at the university, which could be informed by knowledge generated through university faculty research. Conversely, faculty are not seeking out campus based decisions that could benefit from the research that they are conducting. Moreover, faculty members generally do not look to the actions of the auxiliary units as potential learning opportunities for their students. This is an area that ought to be further explored.

Educating students as drivers of integrating sustainability into higher education. If we accept the customer service model as presented, an opportunity arises for students to push the system from within to begin the process of integrating sustainability principles into the decision-making process. The leverage points for change are the specific decisions that are made which tend to reflect student demands and desires. These may be in relation to the food that is served, the services available to students within the resident halls, parking systems, or the manner in which waste is handled on campus. By no means are these examples representative of an exhaustive list of leverage points to which students currently have a voice. If organized and informed, the students have the power to work from within the system to push the university in a direction which they may be less likely to head to without the voice of the student body.

The results of this study have raised many questions that I am unable to fully

respond to in this dissertation, however, they lay the groundwork for future projects. In the next section I propose questions for future research and explain their significance.

Future research: Developing institutional capacity to meet the needs of a sustainable institution

In Simon's words, "...an organization's structure is itself a representation of the task the organization was designed to deal with" (p.124). As depicted in this dissertation, higher education is faced with a choice of becoming part of the solution towards a sustainable society or maintaining status quo behavior.

Recent publications by scholars such as Bok (2003), Slaughter and Leslie (1997) and Gardner (1999) have emphasized the challenges facing higher education in the new millennium. Each offers a unique perspective yet affirm higher education's current quest to find its place in the current globalized economy.

Gardner (1999) writes:

The western university, especially in the United States and unevenly elsewhere, has a vital role to play and nearly unique capability to help with these problems because most of them will require knowledge, brainpower, skilled intelligence, and judgement to solve, or at least to manage. The university, of all institutions, has the capacity to define these issues, to analyze and examine them, to discuss creative ways of coping with them, and to share this knowledge and this insight not only with the young but also with the larger society (p.21).

Similarly, Bok (1990) notes that universities are failing to do what they are supposed to do which is help society alleviate its most painful and threatening problems. He notes:

We have prospered as a nation by relying on individual freedom and market-oriented competition. But we have also found that freedom must be tempered by self-restraint if we are to maintain security, guarantee opportunity for all, and build the trust required to enable people to work together effectively. We have likewise come to realize

that competition, even when properly limited by laws and regulations, cannot succeed by itself in alleviating poverty, improving public education, or making us successful participants in the world economy. To achieve these goals, we need to link individualism and competition with a set of qualities of a very different kind – qualities of a more cooperative and communal nature rooted in a strong sense of personal responsibility toward institutions, communities, and other human beings (p.55).

Coming to grips with the fact that the nature of an unsustainable society is in part due to the cultural values and beliefs leaves us with some very challenging questions. The educational and social reform movement guided by sustainability proposes a revolutionary framework for reevaluating the manner in which traditional growth and development has advanced (Harris, 2000; Warburton, 1998). Under the paradigm of reform, institutions could evolve with an emphasis on the reformation of today's values such as cooperative collectivism, success measured by good will and participatory citizenship, responsibility, accountability and a sincere concern for the future (table 3) (Harris, 2000).

Questions have emerged from the data analysis, which I propose could provide guidance for future research. These questions fall into and concern the following categories:

- Distribution of knowledge in support of sustainability

- Setting institutional examples for sustainability
- Application of sustainability as a moral framework
- Higher education in the crossfire between globalization and sustainability
- Organizational structure: Preparing higher education for the vision of sustainability

Next I provide an explanation of each category.

Distribution of knowledge in support of sustainability

I propose to examine the organizational framework that shapes the 'distribution of knowledge' (re. food systems, global climate change, biodiversity, water systems, pollution prevention, renewable energy technology) in support of sustainable development policy within institutions of higher education. I have identified institutions of higher education because they are responsible for a substantial amount of the scientific and social science knowledge that is generated which leads to the understanding of the unsustainable state of the world. These bodies of knowledge influence public policy decisions at the state, national and global level but do not appear to influence local policy decisions within the institution itself. For the purpose of this discussion, I am not going to attempt to determine the form these 'systems of knowledge distribution' for sustainability should take, but rather raise some questions as to how these would be defined, designed and applied to an institution of higher education. Potential questions include:

- If knowledge generated on campus were to become more accessible to the decision-makers, how would this lead to more informed campus-based solutions?

- If the organizational structure encouraged the integration of sustainability principles, how would that alter participant understanding of the term?
- How would a decision informed by sustainability principles transform the current decision-making process?
- If sustainability principles were to be integrated into an institution – would this transform/reform the decision-making process? How?

Setting institutional examples for sustainability

The findings illustrated how negative exposure to the integration of sustainability principles influenced decision-makers perspectives and actions. If it is possible to deduce from these examples in the findings that decision-makers are in fact influenced by campus incidents, then it is possible that a positive experience could have the same impact. Some institutions such as Tufts University and the University of Vermont have applied a related approach through the development of sustainability indicators. The intention of developing sustainability indicators is to articulate a set of incremental steps, from which to establish goals and objectives as well as measurements for progress. The challenge is to devise a set of positive experiences that do not trivialize the impact of integrating sustainability at the systemic level, losing sight of the broader context. Potential questions for future research include:

- How would more positive experiences of integrating sustainability principles into the decision-making framework supported by organizational structure lead to a deeper understanding and commitment to sustainability on the part of the decision-makers across the hierarchical divisions?
- Do the application of sustainability indicators lead to positive support on the part of the administration?

Application of sustainability as a moral framework

Inherently, higher education is a moral endeavor, in that the system advocates

for activities or patterns of behavior which have consequences for the harm and well-being of persons and other sentient beings as well as the environment. Moreover, responsibility for individual and social welfare is part of the institutional landscape, a responsibility implicated in decision-making on all levels of the institution and in the goals toward which the decision-making procedure is directed. Historically, ethical theories propose moral principles for how people ought to be treated and what types of actions are morally permissible (Rachels, 1999; Schneewind, 1991). The university makes decisions, which have moral implications on a daily basis. The intention of these questions is to determine how an institution of higher education accounts for the moral implications of institutional policy within the decision-making procedure. The questions that could guide such research would explore:

- How could the moral beliefs entailed within a 'strong' sense of sustainability influence the process or the outcomes of the current decision-making process?
- What role does moral agency play in developing a sustainable institution?
- Does integrity require a recognition of the incidental learning that occurs at university vis a vis sustainability?

Higher education in the crossfire between globalization and sustainability.

Northern University is not unique in that it is influenced and entangled in a globalized economy. Globalization is the restructuring of the world economy in favor of a single system that benefits corporate private profits. Consequently globalization is potentially a hindrance to the development of a sustainable campus. For example, a fundamental criterion for a sustainable food system, is the support of locally produced agricultural products. The market tends to be

dominated by overseas products or produce shipped from the other side of the country though some products may be accessible through a local source.

Current financial constraints force the university to make decisions that lead to cost savings and support of globalization. As the movement amongst institutions of higher education to embrace sustainability and contribute to the development of a sustainable society progresses, I anticipate the collision of ideologies will come to a head on the university campus. Questions worth exploring include:

- Within the context of the current period of capitalist development known as globalization, how are institutions of higher education meant to respond?
- Is it feasible to have a sustainable university dependent upon a globalized economy?

Organizational structure: Preparing higher education for the vision of sustainability

The findings suggest that the structure of the organization characterized by parameters such as hierarchical boundaries, systems of communication, departmental divisions, and budget models have an impact on the decision-making processes and outcomes. However, what is not clear is whether the organizational structure in its current form is prepared to accommodate and respond to the integration of sustainability. Though there are positive examples that can be accounted for which illustrate the integration of sustainability into a particular decision, it is not enough from which to generalize to the entire system. In the pursuit of understanding the appropriate organizational structure of an institution engaged in sustainability, I would reference many of the questions that I have just outlined in this section relating to moral agency,

knowledge systems, and globalization. Below, are questions that I propose to guide future research in the realm of organizational structure and sustainability.

- What ought a university do to overcome the obstacles embedded within the organizational structure of the university? Would a university have to be built from the ground up to have a sustainable campus?
- What organizational structure would best support the integration of 'knowledge systems for sustainability'?
- How would power structures be modified as the university transforms to being a sustainable institution? What would the new configuration resemble? Would democracy be redefined or reinstated?
- How would patterns of communication be altered from those of the conventional system?

Though unable to respond to many of these questions in this dissertation, I intend to pursue these questions through future scholarship.

This research contributes to the growing body of literature on sustainability and higher education. The current movement to integrate sustainability principles into all aspects of an institution of higher education (in the United States) has happened at a time when the United States struggles to "define its role and place in this changing world scene" (Gardner, 1999). van Weenan (2000) states:

...the challenge for universities as organizations is to develop sustainably while at the same time changing the paradigms and assumptions on which they, as organizations, are based (p.32).

The challenge does not appear to reside in the need for ample data and justification as to why the need to integrate sustainability in the decision-process is important, particularly since these very institutions are responsible for much of the data that is contributing to the dialogue. Rather, the question that remains is whether institutions of higher education are prepared to respond to the data that

is being gathered and analyzed within their own walls and consequently take responsibility for contributing to the solutions. van Weenan (2000) summarizes the underlying challenge:

The key question is how any organizational response to the challenge of sustainable development is possible that starts from the same paradigms and assumptions that help to create our prevailing unsustainable systems in the first place (p.32).

Linking this to decision-making theory, Simon (1997) notes:

Intuition and judgment are simply analyzes frozen into habit into the capacity for rapid response through recognition of familiar kinds of situations.

In summary, my conclusions mimic those articulated in Agenda 21 Chapter 8.

Agenda 21 recognizes that decision-making requires: a) an adjustment or reshaping of fundamental decision-making processes, b) significant changes in the institutional structures of government to enable more systemic consideration of the environment, and c) new forms of dialogue. If the goal is to integrate sustainability into the decision-making process within an institution of higher education as a leverage point for reform, then considerably more attention needs to be directed to the steps needed to 'unfreeze' these decision habits and integrate new lines of thought for reform.

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APPENDIX A: TALLOIRES DECLARATION

We, the presidents, rectors, and vice chancellors of universities from all regions of the world are deeply concerned about the unprecedented scale and speed environmental pollution and degradation, and the depletion of natural resources.

Local, regional, and global air and water pollution; accumulation and distribution of toxic wastes; destruction and depletion of forests, soil, and water; depletion of the ozone layer and emission of "green house" gases threaten the survival of humans and thousands of other living species, the integrity of the earth and its biodiversity, the security of nations, and the heritage of future generations. These environmental changes are caused by inequitable and unsustainable production and consumption patterns that aggravate poverty in many regions of the world.

We believe that urgent actions are needed to address these fundamental problems and reverse the trends. Stabilization of human population, adoption of environmentally sound industrial and agricultural technologies, reforestation, and ecological restoration are crucial elements in creating an equitable and sustainable future for all humankind in harmony with nature.

Universities have a major role in the education, research, policy formation, and information exchange necessary to make these goals possible. Thus, university leaders must initiate and support mobilization of internal and external resources so that their institutions respond to this urgent challenge.

We, therefore, agree to take the following actions:

1. Increase Awareness of Environmentally Sustainable Development.

Use every opportunity to raise public, government, industry, foundation, and university awareness by openly addressing the urgent need to move toward an environmentally sustainable future.

2. Create an Institutional Culture of Sustainability

Encourage all universities to engage in education, research, policy formation, and information exchange on population, environment, and development to move toward global sustainability.

3. Educate for Environmentally Responsible Citizenship

Establish programs to produce expertise in environmental management, sustainable economic development, population, and related fields to ensure that all university graduates are environmentally literate and have the awareness and understanding to be ecologically responsible citizens.

4. Foster Environmental Literacy For All

Create programs to develop the capability of university faculty to teach environmental literacy to all undergraduate, graduate, and professional students.

5. Practice Institutional Ecology

Set an example of environmental responsibility by establishing institutional ecology policies and practices of resource conservation, recycling, waste reduction, and environmentally sound operations.

6. Involve All Stakeholders

Encourage involvement of government, foundations, and industry in supporting interdisciplinary research, education, policy formation, and information exchange in environmentally sustainable development. Expand work with community and nongovernmental organizations to assist in finding solutions to environmental problems.

7. Collaborate for Interdisciplinary Approaches

Convene university faculty and administrators with environmental practitioners to develop interdisciplinary approaches to curricula, research initiatives, operations, and outreach activities that support an environmentally sustainable future.

8. Enhance Capacity of Primary and Secondary Schools

Establish partnerships with primary and secondary schools to help develop the capacity for interdisciplinary teaching about population, environment, and sustainable development.

9. Broaden Service and Outreach Nationally and Internationally

Work with national and international organizations to promote a worldwide university effort toward a sustainable future.

10. Maintain the Movement

Establish a Secretariat and a steering committee to continue this momentum, and to inform and support each other's efforts in carrying out this declaration.

Source: www.ulsf.org [University Leaders for a Sustainable Future]

APPENDIX B: COPERNICUS CHARTER

COPERNICUS -

THE UNIVERSITY CHARTER FOR SUSTAINABLE DEVELOPMENT

Geneva, May 1994

Preamble

Man's exploitation of the biosphere is now threatening its very existence and delicate balance. Over the last few decades, the pressures on the global environment have become self-evident, leading to a common outcry for sustainable development. In the words of the Brundtland report, we must learn to care for the needs of the present without compromising the ability of future generations everywhere to meet their own needs.

The awareness is there. What is required is a comprehensive strategy for building a sustainable future which is equitable for all human beings, as highlighted by the RioConference (UNCED) in 1992. This requires a new frame of mind and new sets of values.

Education is critical for promoting such values and improving people's capacity to address environment and development issues. Education at all levels, especially university education for the training of decision-makers and teachers, should be oriented towards sustainable development and foster environmentally aware attitudes, skills and behavior patterns, as well as a sense of ethical responsibility. Education must become environmental education in the fullest sense of the term.

The role of universities

Universities and equivalent institutions of higher education train the coming generations of citizens and have expertise in all fields of research, both in technology as well as in the natural, human and social sciences. It is consequently their duty to propagate environmental literacy and to promote the practice of environmental ethics in society, in accordance with the principles set out in the Magna Chart of European Universities and subsequent university declarations, and along the lines of the UNCED recommendations for environment and development education.

Indeed, universities are increasingly called upon to play a leading role in developing a multidisciplinary and ethically-oriented form of education in order to devise solutions for the problems linked to sustainable development. They must therefore commit themselves to an on-going process of informing,

educating and mobilizing all the relevant parts of society concerning the consequences of ecological degradation, including its impact on global development and the conditions needed to ensure a sustainable and just world.

To achieve these aims and fulfill their basic mission, universities are urged to make every effort to subscribe to and implement the ten principles of actions set out below.

Principles of action -

Institutional commitment

Universities shall demonstrate real commitment to the principle and practice of environmental protection and sustainable development within the academic milieu.

Environmental ethics

Universities shall promote among teaching staff, students and the public at large sustainable consumption patterns and an ecological lifestyle, while fostering programmes to develop the capacities of the academic staff to teach environmental literacy.

Education of university employees

Universities shall provide education, training and encouragement to their employees on environmental issues, so that they can pursue their work in an environmentally responsible manner.

Programmes in environmental education

Universities shall incorporate an environmental perspective in all their work and set up environmental education programmes involving both teachers and researchers as well as students - all of whom should be exposed to the global challenges of environment and development, irrespective of their field of study.

Interdisciplinarity

Universities shall encourage interdisciplinary and collaborative education and research programmes related to sustainable development as part of the institution's central mission. Universities shall also seek to overcome competitive instincts between disciplines and departments.

Dissemination of knowledge

Universities shall support efforts to fill in the gaps in the present literature available for students, professionals, decision-makers and the general public by preparing information didactic material, organizing public lectures, and

establishing training programmes. They should also be prepared to participate in environmental audits.

Networking

Universities shall promote interdisciplinary networks of environmental experts at the local, national, regional and international levels, with the aim of collaborating on common environmental projects in both research and education. For this, the mobility of students and scholars should be encouraged.

Partnerships

Universities shall take the initiative in forging partnerships with other concerned sectors of society, in order to design and implement coordinated approaches, strategies and action plans.

Continuing education programmes

Universities shall devise environmental educational programmes on these issues for different target groups: e.g. business, governmental agencies, non-governmental organizations, media.

Technology transfer

Universities shall contribute to educational programmes designed to transfer educationally sound and innovative technologies and advanced management methods.

Endorsing the Charter

The CRE Bureau invites university rectors to endorse the Charter on behalf of their institutions. Their signature will constitute a commitment to secure the support of their university, teachers and students alike, in adopting and implementing environmental guidelines which are consistent with the Charter.

The principles of action listed above are general and open-ended. It is left to each individual institution and its students and staff to give them substance compatible with local circumstances. Expressed in terms of specific guidelines, they should form a key element in the mission statement of the university concerned.

Source: www.iisd.org/educate/declarat/coper.htm
[International Institute for Sustainable Development]

APPENDIX C: UBUNTU DECLARATION

UBUNTU DECLARATION

On Education and Science and Technology for Sustainable Development

In an effort to make integrated solutions work for sustainable development and to mobilize the education sector to contribute to sustainable development;

We, the education and scientific organizations of the world, United Nations University United Nations Educational, Scientific and Cultural Organization African Academy of Science International Council for Science International Association of Universities Copernicus-Campus Global Higher Education for Sustainability Partnership Science Council of Asia Third World Academy of Sciences University Leaders for a Sustainable Future, and World Federation of Engineering Organizations, call for an initiative to strengthen science and technology education for sustainable development.

Cognizant that integrated solutions for sustainable development depend on the continued and effective application of science and technology, and that education is critical in galvanizing the approach to the challenges of sustainable development.

Endorsing the Earth Charter as the inspiring, fundamental and balanced set of principles and guidelines for building a just, sustainable and peaceful global society in the 21st century, which should permeate all levels and sectors of education.

Noting that science is all science - natural, social and human.

Recognizing the necessity to bridge the knowledge gap between the nations of the world through a fundamental redress of the distribution of education for sustainability.

Acknowledging that the ultimate goal of education in all its forms is to impart knowledge, skills and values to empower people to bring about changes.

Concerned that education has not been utilized as a vehicle for attaining sustainable development.

Reaffirming the indispensable role of education in achieving sustainable development, and the important role education plays in the mobilization of science and technology for sustainability as contained in Chapter 36 of Agenda 21.

Recalling the Lüneburg Declaration on Higher Education for Sustainable Development of 10 October 2001, and its emphasis on the indispensable role of higher education informing and supporting all education in addressing the critical challenges of sustainable development.

And recognizing that the Scientific and Technological community, as represented by the International Council for Science, Third World Academy of Sciences, and World Federation of Engineering Organizations in the WSSD process has called for a new social contract between science and technology and society for sustainable development.

Determined to work towards the goals contained in the Millennium Declaration, Monterrey Consensus and the Doha Development Declaration.

Call on Governments of the World Summit for Sustainable Development and the Post-Summit agenda to:

Designate educators as the tenth stakeholder group in the WSSD process.

Call on educators, Government and all relevant stakeholders to:

Review the programmes and curricula of schools and universities, in order to better address the challenges and opportunities of sustainable development, with a focus on:

Plans at the local, regional and national country levels;

Creating learning modules which bring skills, knowledge, reflections, ethics and values together in a balanced way;

Problem-based education at primary and secondary levels in order to develop integrated and non-instrumental approaches to problem solving at an early stage in the education cycle;

Problem-based scientific research in tertiary education, both as a pedagogical approach and as a research function;

Promote efforts to attract young people to the teacher profession both to meet the Millennium Development goals of universal access to primary education as well as to further strengthen primary, secondary and tertiary education. In developed countries the major challenge in the coming years will be to offset the high outflows of experienced teachers reaching retirement age or taking up other challenges.

Develop mechanisms to continuously inform teachers and update programmes on major progress in scientific and technological knowledge relevant for sustainable development.

Promote knowledge transfers in innovative ways in order to speed up the process of bridging gaps and inequalities in knowledge.

This is the shared responsibility of teachers, schools, research and education institutions and governments.

To achieve these challenges and objectives, we are resolved to work towards a new global learning space on education and sustainability that promotes cooperation and exchange between institutions at all levels and in all sectors of education around the world. This space must be developed on the basis of international networks of institutions and the creation of regional centers of excellence, which bring together universities, polytechnics, and institutions of secondary education and primary schools. We invite all other responsible stakeholders to join us in this endeavor.

Source: www.un.edu/hq/rector-office/press-archives/press2002/pre37.02html#ubuntu
[United Nations Development Program]

APPENDIX D: SAMPLE INTERVIEW GUIDELINE

Institutional questions

How does Northern University take into consideration the implications of disposal of certain items on ecosystem health and human well being?

Is there a moral framework that is applied to the decision making process? If no, what would this look like?

If there is none, could a university wide code of ethics for Waste management be applied to the entire university system?

What are the implicit or explicit educational messages of the Waste management at Northern University?

How can Northern University use its "buying power" to establish contracts that incorporate a decrease in packaging and proper disposal of materials? (ie. Leasing computers)

What kind of data or information regarding ecosystem health or human-health would assist Northern University in developing a "Sustainable Waste Management Policy"?

Sustainability

What is sustainability to you?

What would a sustainable university look like to you?

Do you believe that sustainability principles can be compatible with an institution of higher education?

What do you see as the challenges or obstacles to integrating or adapting sustainability principles into dining? Northern University as a whole?

How is it that people are willing to pay the cost of unsustainability?

If funds were available would sustainability be a priority?

Campus questions

How could the sustainability institute provide additional value to the university?

What can we do more to institutionalize sustainability?

Where do people perceive us (as a university) to be right now?

Where does Northern University stand right now in regards to its values?

Final questions

Who else should I interview?

Can I follow up with you if need be during the analysis stage of my research?

Alias for my records? or should I just assign you one.

APPENDIX E: MATRIX OF UNDERSTANDING

What are the obstacles to integrating principles of sustainability into an institution of higher education?

Rationale → Operations ↓	Power	Econ.	Relevant research information	Past practices	Anthropo- centric	Ethical/Moral considerations	
						Ecological	Sustainable
Food services							
Purchasing							
Waste Mngt.							

APPENDIX F: SAMPLE IRB LETTER OF PERMISSION

Dear ()::

The purpose of the proposed research is to examine the obstacles to integrating principles of sustainability into the decision-making procedure within institutions of higher education. As a general example of university policy making, this study focuses on operational policy with a comparative analysis of food services, purchasing and waste management. Sustainable standards consider the impact of economic viability on ecosystem-health and human well-being. The manner, in which these policies are implemented, places the institution in the position of making choices that reflect sustainability. In the long-run this research benefits institutions of higher education that are interested in reassessing integrating principles of sustainability into operational policy.

Your participation is voluntary. Your responses will remain strictly confidential and only applied for the purpose of this project. For the sake of confidentiality and anonymity, I will assign a pseudonym to you. In the interview process you have the option of saying things "off the record" that will not find their way into the final account. You may choose to end an interview or your participation in the study at any time. If you do consent to be interviewed, I will ask you to respond to the interview questions, in an open-ended manner. For the purpose of having an accurate account of your response to my questions, I hope to have permission to audio tape the interviews. If permitted, I would like to keep the audiotapes for the purpose of assuring the accuracy of the data in the final document, as well as for the potential for future research. An alias will be assigned to you to assure confidentiality. Confidentiality of the taped responses will be maintained at all times.

No risk to you is anticipated. Every effort will be made to minimize the possible anxiety or stress you may experience if you chose to participate in the interview process. I am asking that you sign and return a copy of this letter. The other copy is for your own records. I hope that you will feel free to ask questions at any time. If you have any questions about your rights as a research subject, you can contact Julie Simpson in the UNH Office of Sponsored Research at 603-862-2003 or Julie.Simpson@unh.edu to discuss them. You may reach me by phone 868-7316 (home)/ 862-0172 (office) or via email at Julie.Newman@unh.edu.

Thank you for your willingness to participate in this research.

Sincerely yours,

Julie Newman, PhD. candidate
Department of Natural Resources

AUTHORIZATION:

I have read the above and agree to participate in this study. I understand that participation in this study is completely voluntary and that if I decide to withdraw from this study that the participants or I will not be affected in any way. I acknowledge receiving a copy of this consent form.

Student signature

Print

Sign

Phone

Email

APPENDIX G: LIST OF CODES

The Master Code List for this study is:

Accountability
Accountability - beyond campus
Communication - data
Communication - inter dept
Communication - intra dept
Communication- education
Customer- students
Descriptive - BSC
Descriptive - Central Receiving
Descriptive - dining
Descriptive - hazardous waste
Descriptive - housekeeping
Descriptive - Purchasing
Descriptive - USNH system
Descriptive - WM
Descriptive - WM Reslife
Descriptive -RCM
Economics - business model
Economics - grant stipulations
Economics - recruitment
Economics- efficiency
Ethics - decision framework
Ethics - industry standard
Ethics of care
Hegemony - academic vs. operations
Hegemony - bottom up
Hegemony - collaborative partnershipships
Hegemony - committee input
Hegemony - compliance
Hegemony - cultural change
Hegemony - decentralized decisions
Hegemony - leadership and vision
Hegemony - organizational structure
Hegemony - responding to students
Hegemony - responsibility
Hegemony - short term thinking
Hegemony - state politics
Hegemony - strategic plan
Hegemony - tenure system
Hegemony - top down commitment
Implications - ignorance
Implications - life cycle analysis
Implications - role of research
Implications - sphere of influence
Implications - systems approach
Morals - definition
Perception of sustainability - add on
Perception of sustainability - community vs. indiv
Perception of sustainability - complexity
Perception of Sustainability - packaging
Perception of sustainability - recycling
Perception of sustainability - sacrifice
Perception of sustainability - unaffordable
Perception of sustainability - vision

Perceptions of Sustainability - definition
Personal story - communication
Personal story - decision-making
Personal story - leadership
Personal story - personal commitment
Personal story - recycling
Personal story - reflection on community values
Politics - personalities
Role of OSP
Story - BGH
Story - business model
Story - convenience
Trends in dining
Trends in purchasing
Trends in WM
Value - community
Value - convenience
Values - academic freedom
Values - change
Values - choice
Values - educational
Values - future generations
Values - human health
Values - institutional
Values - personal responsibility
Values - shadow curriculum
Values - societal
Values - standards
values - supporting local businesses
Values - sustainability

_____ (End list of codes)

[organized with the assistance of Hyperresearch software]

APPENDIX H: SAMPLE TRANSCRIPTS

Administrative interview

Do you believe that sustainability principles can be compatible with an institution of higher education? How might that best manifest itself?

Sure there is no inherent incompatibility...Let's talk about this for a minute. The business of a university is learning. When students learn the call of education and faculty learns the call of research. But the business of the university is learning. Is that in anyway, incompatible with sustainable living? NO. They may be sometimes on parallel tracks but they are never in collision.

JN - One of the challenges that I have observed is the distinction between the academic side of the university and the operation side, both sides put together teach as a whole. How is that the academics can be instilled into operational policy?

When those seem not to be headed in the right direction, it probably means that there is not clarity in the institutional mission and that there is not clarity, crispness of vision because if there were the academic goals and the operational goals would be totally compatible. Both in service of some higher goals.

JN From your perspective, if they are not always in sync how do you or who's responsible to place them in sink?

At that level, that is the President's responsibility. But there are other places in the institution where you find unit goals, conflicting or at least rubbing against each other. You can find it within the same college, two departments that are not serving the same purposes and than it is the Dean's problem. You do an example where the units that you are talking about report to different VP's, and that is why the resolution is the President's problem.

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JN Is there a university wide code of ethics that Northern University abides by? What is the moral framework that guides institutional decisions?

There is a set of values...that might be as close ... to ethics ... and when you review the goals and strategies document of the academic plan you will see a clarification of institutional values which reads what we live for here.

Are the values stated by Northern University 's strategic plan meant to be values reflected by the university in its actions/decisions?

Sure, yes indeed. It ought to manifest itself in everything from the content of academic programs to budget decisions. It ought to manifest itself in the living and learning environment we produce for students...it ought to manifest itself in most of what we do.

Values reflected by staff, faculty, students, and administration?
Values reflected by the students upon graduation?

Sure.

Purchasing interview

JN From your perspective what is the role of the purchasing office at Northern University ?

What the role of purchasing at Northern University is ...is we are tasked with the responsibility of helping the university purchase and secure the services and goods for whatever their functions may be at the university. We look at objectively...we try and share what we have for knowledge relative to commodities, vendors etc and try to come up with the most responsible way to buy.

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JN How do purchasing agents determine what products to buy?

That's assigned to them. The way we are here, we are more generalists as opposed to specialists. Resources, we don't have enough people on staff to be specialists in only certain commodities. Except for one individual, I have got one who does specifically construction and renovations... and as you know that's huge.

So I do need somebody special for that. And with the money that we get from the state.. they don't hand out the money very often... and when they do you've got to make sure that you have done everything to the T...everything is documented... which normally it is. Sometimes the files need to be cleaned up a little bit but its all there. He's got quite a bit.

JN How do agents determine which products to buy within their commodities?

You have to understand also, that we don't work in a vacuum. We work with whoever it is out in the field that needs something done. IT could be an individual; it could be a committee. So if we're building a building, it's obviously a big group. It's huge and it's a big process. It depends on what it is we are buying.

So the decisions are ... it's a collective decision-making process. They will come to us...we will have our own and historical information. Who did we use last time? Who responded last time? And we go back to the well and bring them back into the other transaction that we are trying to work on. So it's a combination of the group from facilities saying... you know I have got these contractors that I would like to include, JM may say well, I know these and we'll add them to our collective list.

JN Can you explain the relationship between Central Receiving and Purchasing?

Central Receiving is responsible for MRO... Maintenance, Repair and Operation. That is the difference. We help them if they need it but in most cases they can use their purchasing card and go buy it.

JN How does the Purchasing bidding process work?

There is a bid limit. Currently it is at \$10,000. It started at \$500 then jumped to \$1,000 then it jumped to \$1,500 and \$3,000 then it went to \$3,000 and \$5,000. There's a formal and in-formal. I thought this was absolutely insane. I am obviously not getting more staff, things cost more money and vice-versa, and things don't cost as much money either. So I did some research and did some analysis, checked out the other universities... what are their limits? Put together a spreadsheet and actually looked at what are our bid-limits and where are we spending all of our time. The time was in the paper pushing rather than here is the big money and here is where we can make a big impact. So they bought it and it was approved by the Vice Chancellor of finance. So it's got to go out to the Vice Chancellor and he delegates and he ok's ...so I did that and then I was talking to JP from U Maine. I said, thank you very much, I just feel like I climbed a mountain going to \$10,000. \$25,000 is where U Maine begins their formal bid process. That enables all offices to purchase most of what they need without going through purchasing.

To be honest with you, unless you are talking about the upgrade for computers, the other stuff... purchasing doesn't add a lot of value to what they are doing.

What we really need to do is have contracts in place... so they can use the contracts and buy what they want. But until we can get out of paper purchasing, we have got to work to set contracts up.

APPENDIX I: IRB

UNIVERSITY OF NEW HAMPSHIRE

Office of Sponsored Research
Service Building
1 College Road
Durham, New Hampshire 03824-3585
(603) 862-3564 FAX

LAST NAME	Newman	FIRST NAME	Julie
DEPT	Natural Resources Department	APP'L DATE	4/19/2002
OFF-CAMPUS ADDRESS (if applicable)	Office of Sustainability Programs 107 Nesmith Hall	IRB #	2724
		REVIEW LEVEL	EXE
		DATE OF NOTICE	4/23/2002
PROJECT TITLE	A study of the obstacles to integrating principles of sustainability into institutions of higher education		

The Institutional Review Board (IRB) for the Protection of Human Subjects in Research has reviewed and approved the protocol for your project as Exempt as described in Federal Regulations 45 CFR 46, Subsection 46.101 (b), category 2 with the following contingencies:

- In the consent letter, the investigator needs to add the following statement, "If you have any questions about your rights as a research subject, you can contact Julie Simpson in the UNH Office of Sponsored Research at 603-862-2003 or julie.simpson@unh.edu to discuss them."

- As the investigator is audio taping the interviews, she needs to add this information to the consent letter, and what will happen to the audio tapes at the end of the study (i.e., erased, kept for future research).

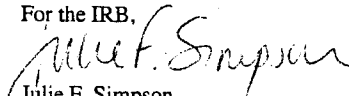
Please forward a copy of the revised consent letter to the IRB for the file.

Approval is granted to conduct the project as described in your protocol. **Prior to implementing any changes in your protocol, you must submit them to the IRB for review, and receive written, unconditional approval. If you experience any unusual or unanticipated results with regard to the participation of human subjects, report such events to this office within one working day of occurrence.** Upon completion of your project, please complete the enclosed pink Exempt Project Final Report form and return it to this office, along with a report of your findings.

The protection of human subjects in your study is an ongoing process for which you hold primary responsibility. In receiving IRB approval for your protocol, you agree to conduct the project in accordance with the ethical principles and guidelines for the protection of human subjects in research, as described in the following three reports: Belmont Report; Title 45, Code of Federal Regulations, Part 46; and UNH's Multiple Project Assurance of Compliance. The full text of these documents is available on the Office of Sponsored Research (OSR) website at http://www.unh.edu/osr/compliance/Regulatory_Compliance.html and by request from OSR.

If you have questions or concerns about your project or this approval, please feel free to contact our office at 862-2003. Please refer to the IRB # above in all correspondence related to this project. The IRB wishes you success with your research.

For the IRB,



Julie F. Simpson
Regulatory Compliance Manager

cc: File
Eleanor Abrams, Education