TRIFECTA: EMBEDDED SUSTAINABILITY CRITERION, DISMANTLING BARRIERS THROUGH LEARNING AND FULL SUITE OF POWER TOOLS

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SUSTAINABILITY TRIFECTA: EMBEDDED CRITERION,
DISMANTLING BARRIERS THROUGH LEARNING,
AND FULL SUITE OF POWER TOOLS

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ABSTRACT

This dissertation uses a multiple case study format with polar sampling to examine the organizational strategies and processes underlying two firms' successful sustainability programs, in order to understand the factors leading to positive sustainability outcomes. Particular attention is given to the values underlying sustainable development objectives, the means of institutionalizing those values, and the organizational strategies and resources utilized to protect those values while simultaneously serving other important organizational values. The two organizations studied have different business structures and decision-making processes; however, they share three key features that empower strong sustainability outcomes. First, each organization has an embedded sustainability criterion that ensures the organization acts on sustainability concerns across its value chain. Second, each has learning processes by which it dismantles barriers to sustainability. Third, each organization supports sustainability learning activities with a full suite of what researchers have called "empowerment tools," a variety of infrastructural resources without which learning rarely occurs. This study offers a three-pronged strategy for organizational sustainability tailorable

to the individual firm, and may be of interest to firms searching for a "do-able" alternative. It brings novel, grounded data to bear on conventional views about embedding sustainability across an organization and about the need to build an organizational culture of sustainability. It supports recent comments in the literature about the role of the business case in sustainability behavior. Although much has been written about sustainable development, research investigating the ways firms choose to overcome barriers to sustainable development is at its beginning. This study helps to fill that void.

APPROVAL PAGE

The faculty listed below, appointed by the Dean of the School of Public Affairs and Administration, have examined a dissertation titled "Sustainability Trifecta: Embedded Criterion, Dismantling Barriers through Learning, and Full Suite of Power Tools" presented by Sandra Elise Price, candidate for the Interdisciplinary Doctorate of Philosophy degree, and certify that in their opinion it is worthy of acceptance.

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I have learned so much during the dissertation process from everyone and every experience. I hope this work does justice to it all. If not, my failures are solely my own.

DEDICATION

This work is dedicated to my most beautiful daughters Jody and Lisa, through whom I am blessed to glimpse the future.

CHAPTER 1

INTRODUCTION AND OVERVIEW

> "*Grant an idea or belief to be true. What concrete difference will its being true make in anyone's actual life?"* ~ William James (1907/1955, p. 97).

Truth is whatever works, to paraphrase philosopher William James, father of American Pragmatism (James, 1997, p. 115). My thought journey, from the decision to apply to graduate school through the dissertation process, has at the core been a search for what works. As a lawyer in the field of environmental policy, I regularly saw everywhere around me evidence of what did not work. Superfund sites sat languishing for decades while lawsuits dragged on. Well-intended or highly pressured stakeholders hammered out another environmental policy proposal under the banner of "stakeholder involvement," the results of too many becoming expensive social experiments or fodder for legislative waste bins—maybe funded this year, only to lose funding the following year as economic uncertainties changed; or perhaps legislated and adequately funded, yet so badly weakened by interest group maneuvering so as to cripple it for any real world environmental problem-solving.

It may seem odd that a lawyer who represented cities and nonprofits and became a Ph.D. candidate in Public Administration and Affairs would find herself writing about business sustainability. The journey began innocently and naturally. While still lobbying, I latched onto the idea of transparency as a powerful regulatory tool to facilitate sustainable development. Transparency puts business in relationship with the community in a way that makes it accountable for its actions (Cotterrell, 1999; Park, Kim & Kim, 2005). Transparency is a familiar tool for the regulated community (see, e.g. Fung, Graham, Weil, & Fagotto, 2007; Lindstedt & Naurin, 2006). As such, it seemed only natural that it could more easily pass

political muster to advance business sustainability behaviors. A quick literature search, however, convinced me that transparency was not a silver bullet. Research shows that environmental performance is inconsistent even in firms with strong information programs (Cohen, 2001). Rather, to be effective, transparency must be paired with public participation in environmental decision-making (Goldschmidt, 2002), enforcement mechanisms (Cohen, 2001; Delmas, Montes-Sancho & Shimshack, 2006; Kaufmann, 2002) and adequate financial resources dedicated to information dissemination (Berglof & Pajuste, 2005).

But even with enforcement, shaming gimmicks, and other forces, transparency always requires honest intentions. Managers have discretion over what to disclose (Bansal & Kistruck, 2006) and can select and consolidate information that paradoxically can result in opacity rather than clarity of detail (Bankowski, 1999). Transparency can and often is treated as a tactic to enhance perceptions of firm legitimacy and virtue (Balkin, 1999), for public relations value, to deflect attention from other issues, to remodel the public's expectations, and as an organizational strategy to deal with external pressure (Hood & Rothstein, 2001; Livesey & Kearins, 2002; Mobus, 2005; Yongvanich & Guthrie, 2004).

Let us not downplay the importance of transparency as sustainability stimulus; but at the same time, underscore that the utility of transparency depends on the existence of a certain ethic of integrity with regard both to sustainability and to transparency itself.

So transparency was too limited a lens for this research. The "ethic" became my new focus. Yet, research shows that even firms espousing sustainability values are more often than not failing in their bids to implement robust sustainability initiatives. The right values may be necessary, but they, too, are insufficient. With current scholarship is still so uncertain about answers, I set out on a fact-finding mission to explore the values of firms succeeding at

sustainable development and the actions they take to ensure their values genuinely translate into sustainability outcomes. In the spirit of Henry James, I was off to chase down "whatever works."

Overview

The literature review in Chapter 2 starts with a look at the changing definitions of sustainability. The terms "sustainability" and "sustainable development"—terms used more or less interchangeably in this dissertation—encompass the idea that a corporation must temper development activities with actions designed to avoid harming the ecosystem and its inhabitants (Edwards, 2005; Sneirson, 2011). However, action implications of that idea have been elusive, because sustainable development is perceived as a negotiated outcome (WCED, 1987); because sustainability operationalization must be context-specific (Meppem & Gill, 1998); and because science, technology and social perspectives on sustainability continue to shift (Barakat, 2006).

The literature lays out sustainability barriers identified in current research and offers an overview of conceptual suggestions for overcoming these barriers. However, the research literature is deficient in empirically grounded studies that identify the strategies and tactics actually used by firms making significant sustainability inroads and why their efforts succeed. Without that data, and with so many tactical suggestions, it is difficult to feel a firm theoretical foothold. That deeper level of understanding required immersion into on-the-ground behaviors of successful organizations for a look at what they actually did, tried, reinforced, and accomplished. Environmental management expert Michael Russo supports this: "[i]t is pivotal for researchers to achieve greater magnification when studying the internal workings of organizations" (Russo, 2008, p. 593).

Since unraveling the reasons for failure had not produced the information necessary to create success, a more appropriate starting point seemed to be inside successful firms.

This study explores two companies that are running strong sustainability programs. More specifically, it seeks to see and understand how they are actualizing sustainability values throughout their operations. The research utilizes a grounded theory design and a qualitative approach that places the researcher within the subject environment to examine context, processes, motivations, relationship dynamics, and the subjects' own understandings of the phenomena in question (Auerbach & Silverstein, 2003). Grounded theory is appropriate for the subject matter of this dissertation because the existing theory is largely prescriptive; offers multiple, occasionally conflicting premises; and what current research there is, is grounded in survey data rather than observed ethnographic data or deeper, open-ended probing for meaning behind the behavior. Grounded theory analysis exposes and explains theoretical concepts that can be compared to the current literature. It also identifies and suggests areas for further study.

Data for this dissertation were collected using in-depth case studies. Case study is appropriate for obtaining in-depth understandings of phenomena, where the boundary between the phenomenon and its setting are not clearly delineated, or where, as is the case in this area of study, available theories seem inadequate (Yin, 1981). Case selection was made based on firms that self-identified as passionate about sustainability. Four firms were initially identified, but two were disqualified after fieldwork was completed for reasons that are fully explained in Chapter 3. The two remaining firms, Cox Arizona and Seventh Generation, shared a passionate commitment for sustainability and objective measures of success in their effort. The two firms were also as different as night and day in terms of product line, organizational structure, and

culture. Their approaches to sustainability practices also contrasted widely. These contrasts helped make common patterns emerging from the data clearly visible.

The data were collected from the two firms via a combination of onsite and phone interviews, field observations, and document review. During face-to-face interviews, firm employees and consultants were asked broad, open-ended questions that required them to talk about their decision processes, idea generation, and problem-solving about sustainability activities. Field observations were formal and informal, including staff meetings, firm-vendor interaction, partner collaborations, and unplanned opportunities to observe or interact with staff. Available documents were varied, including internal meeting minutes, reports and staff notes, as well as more polished materials produced for publication, published interviews, and other articles.

Analysis of these rich and diverse sources of data resulted in the emergence of two central constructs. The first was operationalizing values through an embedded sustainability criterion, and the second was using learning processes to innovate around barriers. I further chose to bifurcate the learning phenomenon into two: the learning process itself, and the "empowerment tools" to support organizational learning. Kanter's research (1988) shows that practical tools play an indispensable role in actualizing desired learning outcomes, and that their absence in an otherwise socially developed learning environment is a reason for learning failure (Kantor, 1988). The study concludes by proposing a set of three theoretical constructs that can be tested in further research and developed into strategies other firms can use in supporting sustainability efforts.

Chapter Outline

The remaining chapters of this dissertation are organized as follows. Chapter 2 surveys existing literature on sustainability. It begins with a look at the character of sustainability definitions confronted by firms attempting to negotiate sustainability practices. It then reviews multiple disciplinary perspectives on drivers, tools, and prescriptions for sustainable business.

Chapter 3 explores in more detail the selection of research design and methodology. It begins with the "burning questions" (Patton, 2003) that drove the design decisions—questions designed to ferret out actual on-the-ground behaviors. These include:

- How do these organizations identify and choose sustainability activities?
- What problem-solving techniques are employed when sustainability values conflict with other legitimate organizational values?
- How do these organizations support outside-the-box thinking, to create sustainability opportunities, or to innovate past barriers?
- What structural, cultural, or political factors enable sustainability implementation and problem-solving?
- What tools are brought to bear on the known sustainability barriers; e.g., issues involving complexity, uncertainty, perpetuity, and systems?

The research and design section begins with a statement about the philosophical influences, particularly pragmatism, guiding the design of the research and underlying the interpretation of the data. Case selection, data collection, and rationale for the research design and analytic method selected are examined.

Chapter 4 introduces the reader to the two firms, Seventh Generation and Cox Arizona, including a brief history of each organization's sustainability activities and the actors who initiated them.

Chapters 5 lays out the grounded theory method and the technical results of my analysis. Chapters 6 and 7 lay out each of the three theoretical constructs emerging from the analysis; respectively, *operationalizing values through an embedded sustainability criterion, learning to disable barriers,* and *providing infrastructural empowerment tools to support organizational learning.* Using narrative and the *in vivo* language of the interviewees, the goal is to take the reader into each organization for a rich understanding of each firm's approach to sustainability decision-making, and also of the cultural and structural context in which these decisions are made. Despite the differences in each firm's organizational structure and decision-making processes, each firm's sustainability success is built upon the application of these three theoretical constructs.

Chapter 8 sets forth the research conclusions and discusses ways in which my findings support and diverge from some prominent ideas in the literature. Chapter 9 brings the dissertation to a close with a discussion of the strengths and limitations of this study and outlines recommendations for future research opportunities suggested by this work.

CHAPTER 2

LITERATURE REVIEW

This literature review accomplishes the following tasks. The first section characterizes sustainability and discusses how it has come to be understood at the firm level—the unit of study in this research project. It shows how specific firm sustainability requirements have been interpreted and narrowed from more amorphous and historic notions of global sustainability. Finally, this section shows the implications of sustainability characterizations for firms and the way those implications have been and are still evolving.

The second section of this literature review categorizes research about sustainability barriers and identifies existing themes. The third section categorizes and identifies themes in what might be called "guidance" literature— literature written to guide business in its quest for sustainability. The complexity of the sustainability challenge leads to multi-disciplinary work coming from many fields and from many theoretical and methodological approaches, making an easy synthesis impossible. The decision rule used here, therefore, is to identify primary recurring themes. The next section highlights more recent promising themes in the literature, and the movement away from past themes. The last section of the review lays out the need for additional case study-based research to expand and ground the current body of knowledge.

The search for literature was conducted via Google Scholar, by combing the references in relevant literature found on Google Scholar, and by doing citation searches on relevant literature to identify later applicable work. I defined saturation to have occurred when repeating the above described search yielded no new relevant works. The literature continues to grow, and I chose to reflect the growth between the beginning of my dissertation research and the final review of the literature during the analysis stage. Given the scope of available research, I developed

inclusionary and exclusionary criteria. For example. except to acquire a historic understanding of theory, for example, learning theory in the management literature, or efficiency theory in engineering literature, works were included only if the research objective was specific to environmental or sustainability strategies, and only if the research objective was relevant to the micro level of the firm. Literature was excluded if its primary value was for a specific industry segment, unless its approach had obvious generalizability. Literature was excluded if it looked at a particular technological tool, unless the tool had impact across the value chain. Certain areas of fairly well-developed literature were excluded simply because of an overly-narrow focus; for example, literature on specific production technology. Secondary sources were not quoted unless they were obtained and reviewed.

Definitions in the Literature

Sustainable development has been an officially desirable goal since the United Nations convened the Brundtland Commission in 1983 (World Commission on Environment and Development [WCED], 1987). As Hoffman and Bazerman and others have pointed out, despite a large amount of attention to the idea of sustainable development and the offer of any number of strategies for achieving it, progress has been alarmingly slow in coming (Hoffman & Bazerman, 2006; Newman, 2007; Smith & Sharicz, 2011). Despite a growing number of corporations seeking a green angle, relative to the problems of social despair, resource depletion, and climate change, progress toward sustainable development has been difficult to attain (see, e.g., Bertels, Papania & Papania, 2010; Lacy, Cooper, Hayward & Neuberger, 2010; Victor, 2006; West, 1995).

Sustainable development efforts occur at different levels. At global levels, nations are talking, negotiating, and struggling to find ways to turn social and environmental innovation into

action without disadvantaging themselves economically (Bigg, Carlile, Schoch & Smith, 2012). Local governments are likewise struggling to move forward with programs to reduce carbon footprints and implement or support other local sustainability measures (see, e.g., Taylor, 2012; Wang, Hawkins, Lebredo & Berman, 2012). Even the business community acknowledges that change must occur, whether through regulatory or voluntary action, to avoid environmental destruction (Whelan, 2001)[1]. As John Elkington[2] notes: "Think of the companies and industries making or using such products as asbestos, mercury, PCBs and PVC, CFS and it is clear that the long-term sustainability of major slices of the economy is already being called into question" (Russo, 2008, p. 50).

A growing public awareness, coupled with acceptance by a majority of scientists that climate change is real and human activity contributes to that phenomenon (Doran & Zimmerman, 2009) has resulted in strong consumer, shareholder, and employee pressure on business to become better environmental stewards (Epstein & Roy, 2001). So many sustainability drivers exist, that the question "should we?" has been replaced with "how?" (Kiron, Kruschwitz, Haanæs & Velken, 2012). A flurry of activity is underway in corporate centers around the globe. Yet, executives say that movement from intent to implementation remains difficult to execute (Lacy et al., 2010). There is so much activity, yet so little overall reduction of strain on the ecosystem that one scholar warns us to be careful not to succumb to an illusion of progress (Rees, 2010), and another points out that the wishful overemphasis on win-

[1] Whelan, representing the International Chamber of Commerce in front of the United Nations Commission on Sustainable Development in 2001, said:

> "The business sector is clearly the 'engine room' for the three 'I's: the Innovation and Investment required, and the Implementation of policies which balance the social, economic and environmental imperatives which lie at the heart of sustainable development (Whelan, 2001, n.p.).

[2] John Elkington was the originator of the concept of the "Triple Bottom Line," described below (Elkington, 1997).

win theories in the literature does not help firms wrestle with reality, where trade-offs between profit and sustainability opportunities are rampant (Hahn, Figge, Pinkse & Preuss, 2010).

Shifting Definitions of Sustainable Development

To understand what has gone wrong, it helps to describe the vision of sustainability business has been asked to realize. A single definition has proven elusive, especially because the Brundtland Commission's report, *Our Common Future,* characterized sustainable development as a negotiated outcome (WCED, 1987). Defining sustainable development for firm operationalization will always be context-specific, depending upon both the explicit patterns of unsustainable development being addressed and the sustainability goals to be achieved (Meppem & Gill, 1998). Nevertheless, to aim for something requires at least a characterization. How firms conceptualization and define the term "sustainable development" influences their actions with regard to it (Byrch, Milne, Morgan & Kearins, 2011).

Pinpointing the meaning and requirements of sustainability for the business community has been a shifting end game. Dale reviewed the many competing definitions of sustainable development and suggested that the Brundtland report intentionally left definitions loose, so that stakeholders can negotiate definitions within individual contexts (Dale, 2001). A literature review conducted by Shima Barakat covering a 20-year time span (Barakat, 2006) shows enormous shifts in thinking about sustainability and the business role in bringing it about. Over 20 years, the conversation metamorphosed from one focused narrowly on the economics of environmental compliance and the relative merits of various compliance mechanisms[3] into a far broader conversation attempting to help business define and adapt to perceived proactive corporate citizenship responsibilities within the local and global communities. The terms

[3] Voluntary, negotiated, economic or command and control mechanisms all have different costs, both technically and financially (Dewees, 1983; Dietz & Vollebergh, 1999; Kate & Kathryn, 2002).

"sustainability" and "sustainable development"—terms used more or less interchangeably in this dissertation—point toward the idea that a corporation must balance development activities with actions designed to avoid harming the ecosystem and its inhabitants (Edwards, 2005; Sneirson, 2011)—are little used in the literature Barakat reviews, and in fact are little in evidence in Barakat's own analysis, despite the fact that her work was prepared to present to a conference on sustainability.[4] In part, that is because early definitions of sustainable development contained two components that were seen as relatively distinct. In 1987, Brundtland Commission's *Our Common Future* broadly defined sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs," (p. 41), and more narrowly contained two key concepts:

- The concept of needs, in particular the essential needs of the world's poor, to which overriding imperative should be given; and,
- [T]he idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs. (WCED, 1987, p. 37)

The Brundtland Commission's report came close on the heels of a revolutionary environmental movement within the United States that saddled domestic firms with tough and expensive new regulations. Due to timing, much of the domestic business community's discussions about sustainability immediately focused on the second concept, which has come to be called "the environmental pillar" of sustainability (Boström, 2012). Compare, for example, Gatto's 1995 discussion of the meaning of the term sustainability in which he stays firmly within the realm of ecology and the environment (Gatto, 1995), and five years later, Utting's discussion of business's responsibility for sustainable development (Utting, 2000). Though Utting pairs the terms "environmental" and "social" (e.g., "environmental and social responsibility"), his paper is

[4] Integration and Communication: A Clear Route to Sustainability? 13th International Conference of the Greening of Industry Network, Cardiff, Wales, July 2-6, 2006

still heavily focused on environmental initiatives. Tellingly, it also repeatedly refers to business getting serious about "the environment and its stakeholders," which suggests that the "social pillar" of sustainability can or ought to be dealt with strictly as a stakeholder issue.

Since Barakat completed her study (2006), the business community has begun a more earnest attempt to include the social pillar. Refined definitions of sustainable development more and more encompasses both accountability for the use and degradation of natural resources *and also* the human and the ethical, including elements of equity and social justice. Examples include Vucetich's discussion of one such value-laden refinement of the Brundtland definition, "meeting human needs in a socially just manner without depriving ecosystems of their health" (Vucetich & Nelson, 2010, p. 539), and Murphy's work on the implications of the social pillar and its linkage to the environmental pillar (Murphy, 2012). Scholars have suggested that one reason practical sustainability research has not progressed further and faster since Brundtland is the multiplicity and shifting nature of its definitions, and therefore, confusion about requirements for success (see, e.g., Smith & Sharicz, 2011).

Interpreting Sustainable Development for the Business Community

The Brundtland definition has been reinterpreted for the firm several times. Two that demonstrate the breadth of these definitions are by Hahn (2010) and Van Kleefe and Roome (2007):

- Meeting the needs of a firm's direct and indirect stakeholders, without compromising its ability to meet the needs of future stakeholders as well. (Hahn et al., 2010, p. 218)

- Management of business that recognizes its embeddedness in social, environmental and economic systems, and focuses on management and relationships to meet the environmental, social, and economic requirements of many different stakeholders in its networks. (Van Kleef & Roome, 2007, p. 43)

As a practical matter, the concept of the Triple Bottom Line (TBL) is the current characterization most widely embraced by the business community (Milne & Byrch, 2011). TBL's vision of "people, planet and profit" suggests that businesses can be sustainable economically while also ensuring socially and environmentally sustainable development in the course of doing business. Introduced by successful businessman John Brett Elkington in his watershed 1997 book, *Cannibals with Forks: The Triple Bottom Line* (Elkington, 1997), TBL helped ease the sustainability conversation away from a "sustainability versus profit" dichotomy and into discussions about how firms might achieve sustainability while maintaining and– even as a direct result of sustainability activities–growing their profitability. A TBL firm puts out both an annual financial report at the end of the year, and additional reports outlining benefits the firm created for the natural world and the community. These benefits are to be achieved through the tools of value shift, transparency, new partnerships, stakeholder involvement, and employing a broader, longer time frame (Elkington, 1997).

Triple Bottom Line has spawned a huge industry for environmental service consultants and providers (Schulz, 2002), who help business implement the tools of TBL, but otherwise, the anticipated profits from sustainability activities have not uniformly emerged. There is as much research suggesting an inverse relationship between sustainability activities and profitability as there is to suggest that sustainability activities contribute to or at least do not detract from profitability. (For a run-down, see Poelloe, 2010). TBL is now being analyzed and critiqued on several fronts. Markus et al. suggest that TBL approaches people, planet and profit as three separate ledgers, rather than the interrelated phenomena they are (Milne & Byrch, 2011). The TBL reporting framework implies that only what can be measured is important, and relies on reporting at the organizational level, even though sustainability must occur across organizational

boundaries (Archel et al., 2008). And reporting carries all the potential problems associated with transparency that were raised in the introduction to this work. TBL does not challenge traditional business thinking (Milne & Byrch, 2011) sufficiently for meaningful global change.

Characterizations of Sustainability for Individual Firms and Actors

Shifting characterizations of sustainability and the partially-failed TBL experiment are aggravated by lack of a shared vision among firms and those individual actors responsible for sustainable development activities within firms. How firms conceptualize sustainable development influences their actions with regard to it (Byrch et al., 2011), and the way they discuss it shapes and constrains their behavior (Moore, 2006). Scholars have undertaken to describe these differences and their implications (Byrch et al., 2011; Linnenluecke, Russell & Griffiths, 2009; Russell, Haigh & Griffiths, 2007; Springett, 2003, 2005). Springett's research examined whether corporate actors had a "weak" or "strong" view of sustainability. Strong sustainability is a theoretical term from environmental economics that holds that nature is vulnerable and cannot be substituted for indefinitely by man-made capital (Alrøe & Kristensen, 2003; Hediger, 2004; Turner, 2006). Weak sustainability assumes that man-made substitutions for natural capital are acceptable. This view condones over-use of resources in an over-reliance on future technology for replacement, or an attitude of procrastination in dealing with mounting sustainability issues (Alrøe & Kristensen, 2003). Springett's work demonstrated that the weak sustainability perspective is the dominant perspective held by the business community. Weak sustainability frames include "eco-efficiency"—looking for cost reductions through reduced resource use, for example, and "the business case," which encourages businesses to identify profitable opportunities that also benefit the natural environment. TBL, as a varietal of the business case, is also considered an example of weak sustainability. As a result, tough decisions

to reduce reliance on natural resources have not been not favored over technology fixes and "low-hanging fruit" (Springett, 2003, 2005). Heikkurinen, too, posited that both business case and stakeholder theories correlate with weak sustainability approaches at best, because both strategies replace responsibility with strategies built around customer or stakeholder identity (Heikkurinen & Ketola, 2012).

Milne, Ihlen and others focused on linguistic characterizations of sustainability discourse and how framing sustainability discourse can contribute to a weak sustainability norm (Ihlen & Roper, 2011; Milne, Kearins & Walton, 2006). Discourse theorists are concerned with the "knowledge, prejudices and resistance" that contribute to the interpretation of text. Milne suggests that businesses have embraced the "journey" metaphor for sustainable practices, and therefore do not have to prove that they are "arriving," but only that they are travelling in the right direction (Milne et al., 2006). In essence, the journeying metaphor lets businesses off the hook too easily, masking firm ignorance about end goals (Milne et al., 2006). Milne tested his theory by analysing corporate sustainability reports from an organization of New Zealand firms, and concluded that firms use language to smooth out tensions between sustainability goals and actual progress. An example: the concept of "balance" was found repeatedly in these reports, while almost no discussion to the underlying conflicts, the trade-offs, or the compromises of which balance consists (Milne, Tregidga & Walton, 2009). This language choice is geared to help stakeholders feel good about firm behavior and simultaneously allows firms to relax about their own progress.

Other researchers have attempted to characterize the several distinct sustainability mental models that businesses employ. Linnenluecke and Russell's research outlined four characterizations of sustainability: (a) economic sustainability: a corporation undertakes only

those sustainability efforts that improve a firm's long-term economic performance; (b) ecological sustainability: a corporation operates within the natural environment and therefore sustainability efforts seek to neutralize negative impact at a minimum; (c) social sustainability: in this view, a corporation takes care of its assorted stakeholders, concerning itself with everything from job safety to community issues; (d) holistic sustainability: sustainability initiatives will integrate all three aforementioned forms of sustainable development activities (Linnenluecke et al., 2009).

Byrch identified five characterizations. "The societalist" sees sustainable development as being about human behavior that creates social and environmental problems, and so the solution is to be found in changing human behavior. "The individualist" posits a right to use the environment to achieve a better quality of life. Getting to sustainability will happen through economic growth coupled with technology, and to a lesser extent behavior change—but not regulation. "The ecologist" believes sustainable development requires building new social structures that result in a quality of life for humanity, while respecting humanity's position as a single species among many. Economic growth is not fundamental to getting to sustainability, but a significant change in human behavior will be. "The realist" believes humanity must take responsibility for the environment, and believes it is possible to do so, if only we put our mind and resources to it. The Realist has a focus on problem-solving. "The futurist" sees human beings as completely dependent upon nature in the long term, and thus accepts a responsibility to look after the planet. Problems are attributable to human behavior, including over-population, and achieving sustainable development will require a long time and a change in human habits (Byrch et al., 2011).

Baumgartner and others have characterized four sustainability strategies: introverted, extroverted, conservative, and visionary. *Introverted* strategy asks, *Is the action for sustainable*

development necessary and useful for the company? The focus is on doing whatever risk management activities are considered necessary to preserve legal and market reputation. *Extroverted* strategy asks, *Will the action enhance stakeholder relationships?* While activities may lead to real sustainability measures, this focus might also lead to a focus on reporting, and even green-washing. *Conservative* strategy asks, *Can we create eco-efficiency?* and looks for ways to enhance the environment while reducing costs through reductive behavior. Energy savings, paperless offices, and carpooling or telecommuting are conservative strategies. *Visionary* strategies incorporate sustainable development into both business vision and strategy and can be played out either through market differentiation based on sustainability, or through a resource-based view that looks at issues like product life cycle or supply chain sustainability (Baumgartner, 2009). Linnenlueke, Byrch and Baumgartner's characterizations demonstrate the relationships between a firm's ideology, the extent of responsibility for sustainable development a firm will acknowledge, and the ultimate impact of its efforts.

Summary

The definitions and characterizations of sustainable development have multiple meanings that have changed over time, and can also differ depending on the context of the sustainability challenge. To achieve "it" requires settling on some characterization of what it looks like in a given situation, getting to agreement about the boundaries of responsibility, and in many cases, reaching an accord with stakeholders about both what the outcome should look like and how to achieve it. In all cases, the understanding of individual firms and their employers about their own obligations with regard to sustainable behavior will shape firm response. The tension created by this conflict of perspectives is likely to increase problem-solving complexity and timelines.

Barriers in the Literature

In those firms adopting an intention toward sustainability, it is fair to assume that firm decision-makers would actively implement sustainability behaviors if they believed they reasonably could (without unjustifiable sacrifice) (Hahn et al., 2010). As such, literature over the past couple of decades has begun to explore the discrepancy between the conceptual acceptance of sustainability goals and the actual difficulties firms experience in taking actions to achieve sustainable development in practice (see, e.g., Andersen & Massa, 2000; West, 1995). Sustainable development is unlike many of the challenges faced by most businesses in that it is not a finite problem to be solved, but presents a dynamic, ongoing challenge requiring a continual balancing act between environmental, social and economic needs. The problems associated with sustainable development are multidimensional, with many stakeholders and multiple causes and consequences that cross borders, generations and species, and cannot be solved by a company, a country or a continent in isolation (Loorbach, 2009).[5]

Human Nature

Several barriers to sustainability achievement have been identified, starting with basic human evolution. We are over-achievers, over-consumers, and short-term actors whose brains evolved during Pleistocene times to equip us for survival during scarcity. Technology ratchets up human productivity, but the survival impulses did not go away (Johnson & Pratarelli, 2010; Rees, 2010). The resulting impact on our resource use has increased exponentially.

Linear Culture

Western society tends to demonstrate a bias toward "discrete projects" with well-defined timelines and performance goals: "The conventional means to achieve accountability and 'value

[5] By contrast, it is very much like the challenges governments are asked to solve, although governments have not been able to do so either.

for money' in sustainable development is typically via discrete, costed and closed periods of spend and exertion: the project" (Bell & Morse, 2004, p. 3).

By contrast, sustainability is an ongoing project that is not achieved within a set time-frame, and requires resilience or the ability to absorb disturbance and reorganize—even while undergoing change (Walker, Holling, Carpenter & Kinzig, 2004).

Heuristic Decision-Making

Individually and institutionally, we tend to simplify problem-solving, relying on heuristics—pattern memories—and past strategies to guide us in present-day decision-making. These short-cuts are useful means of dealing with tremendous amounts of complicated data (Hoffman & Bazerman, 2006; Pearce, 2002; Sheppard, 2006; West, 1995), but they also all but guarantee that we continue to generate the same problems, and that we continue to use the same methods to attempt to extricate ourselves from those problems that we used to get into them.

Conflicting Priorities and Agenda Prioritization

We suffer tensions between economic, ecological, and social goals, and discrepancies between idealized sustainability goals and practicalities at local levels (Dearing, 2000; Hoffman & Bazerman, 2006; Mannberg & Wihlborg, 2007; Norton, 2003; Vargas, 2000; Williams & Dair, 2007). Since policy-making is, at its base, an exercise in resource allocation (Easton, 1971), all the factors that go into making decisions about resource allocation—power, immediacy of need, perceived impact from acting or not, availability of resources, pressure group behavior, public awareness and perspective, risk factors, leadership or lack of it, among others—sometimes result in failure to act (Stone, 1997). Low political prioritization results in trade-offs of sustainability for other considerations. Hurricane Katrina offers a perfect example. The Corps of Engineers had warned New Orleans for many years about the potential for

devastation under storm conditions, but politicians prioritized economic development over precaution in their spending decisions (Congleton, 2006). In another example, a study of five building projects in England showed that only one of the four accomplished more than half its sustainability objectives. Two of the frequently cited reasons recorded by researchers included lack of stakeholder power to prioritize sustainability measures and a simple failure to consider sustainability in project planning efforts (Williams & Dair, 2007).

Economic Resource Trade-offs

Allocation of economic resources is another barrier. Despite the research push into win-win strategies, Hahn says we are missing the boat by failing to adequately document sustainability trade-offs at the individual actor, firm, and industry levels. Documentation and exploration into measuring and managing these trade-off points could help firms make better trade-off decisions (Hahn et al., 2010).

Over-reliance on Technology

Although innovative technology is considered by many to be the key to innovating around resource loss, Dearing (2000) and others caution that we not over-rely on future science and technology. In theory, we cannot be sure that tomorrow's technology will always be able to provide man-made replacements for natural resources. In practice, problems exist in diffusing technology out into the market place. Some innovations cannot be easily applied at scale. Timing and market readiness can impact the willingness of the public or the marketplace to embrace new technology. Sometimes innovations themselves have unanticipated and unwelcome consequences (Dearing).

Issue Complexity

The complexity of sustainable development challenges is possibly the biggest barrier, especially at global levels (e.g., climate change), but also for any firm that must contend with international upstream sourcing or downstream distribution channels, and with nested ecological and social systems impacted by production or service provision. Multiple stakeholders, multiple scales (multi-scalar), cross-generational impacts, and time and space considerations all create uncertainties and other logistical and technological difficulties (Norton, 2003). The multidimensionality of sustainability challenges has given rise to the concept of "meta-problems"—complex problems made up of sets of sub-problems that are also complex problems. Solving a sustainability challenge requires finding a solution at micro levels that does not create new problems at macro levels (Baumgartner & Korhonen, 2010).

Lack of Competencies

Many writers point to the lack of adequate skills and expertise for planning for, designing, managing, measuring, and evaluating sustainability activities. Some of these competencies are industry specific, and so it does not bear trying to create a long list here. (See, e.g., Mannberg & Wihlborg, 2007; Meppem & Gill, 1998; Newman, 2007; Norton, 2003; Williams & Dair, 2007 for a more thorough discussion.) Lack of competency for deliberative stakeholder decision-making and for innovating adequate solutions will be discussed in the next section.

Failed Deliberative Processes

Although it is widely accepted that sustainability solutions must be negotiated through participatory and deliberative problem-solving processes, it is becoming clear in the literature that systems currently in place often result in watered-down compromises that do not move us

far enough toward sustainability at either a micro or macro level. In worst case scenarios, deliberative process can result in stalemate and no movement whatsoever (Hoffman & Bazerman, 2006; Mannberg & Wihlborg, 2007). There are numerous reasons, including lack of transformative agency such as social capital, resources, and effective networks (Newman, 2007). More will be said about the limits of democratic processes for sustainability in a discussion of stakeholder theory in a later chapter.

Concept Literature

In 2008, I conducted an early literature review looking for what works—conditions necessary to overcome the assorted aforementioned barriers or prerequisite to successful implementation of sustainability measures. At that time, much had been written, but little focused on success stories. A literature review conducted by Shima Barakat and covering a 20-year period (Barakat, 2006) found three distinct categories of research predominating: descriptions of and prescriptions for what she referred to as "environmental strategies"; identification of external and internal drivers of firm environmental practice; and the search for a connection between green behavior and firm profitability. So much of the literature during that period focused on the profitability nexus that other authors believed the research had been overly and optimistically oriented toward the "win-win" possibilities of environmental and economic performance, leading to an incomplete and (however unintentionally) deceptive dialogue (Ahlstrom, Macquet & Richter, 2007).

Barakat also noted two other factors. One, most U.S. empirical scholarship focuses on large-scale survey data taken from management, and two, to that point, traditional organizational theoretical perspectives (e.g., resource management, transformational leadership theory, and institutional theory) tended to show a limited ability to explain or motivate green behavior.

However, Ascher (2000) suggested that traditional organizational theory has quite a bit to offer in this realm if adjustments are made to account for complexity issues.

A 2013 follow-up review shows a growing sophistication within the three categories of research noted by Barakat—descriptions and prescriptions, sustainability drivers, and the connection between green behavior and profitability—drilling further into questions created by earlier research. The conversation seems to have moved well past the debate about whether business must prioritize social and environmental obligations alongside profit motives, à la Milton Friedman's infamous article entitled *The Social Responsibility of Business is to Increase Profits* (Friedman, 1970), and accepted that firms must find ways to do it all. And a significant number of academic voices are admitting that win-win solutions like Triple Bottom Line and eco-efficiency (described in more detail in a later chapter) are proving insufficient to meet sustainability goals.

Stakeholder Theory

Our Common Future foresaw the path to sustainability paved with stakeholder-negotiated trade-offs (WCED, 1987). As explained by Moore (2006), the authors of the Brundtland report anticipated the necessity of a democratic process of "public debate, compromise and fairness" to balance ecological, economic, and social equity issues. In this view, successful sustainable performance requires open, ongoing and ideally collaborative negotiation among all the stakeholder groups. See, e.g., Sachs and Ruhli (2005), especially, for a case study of three major corporations' entrée into stakeholder involvement , or more generally, Watt (2003), or Ayuso, Rodríguez & Ricart (2006), but there are many, many others.

Stakeholder theory of the firm is a natural fit to the Brundtland prescription, as it posits a relationship and attendant responsibilities between the firm and multiple stakeholders

(employees, suppliers, customers, stockholders, managers and the larger community), rather than a more limited duty to stockholders and the law (Freeman, 2001). Freeman noted that many changes in social and environmental law require firms to incorporate into their operations behaviors protective of an assortment of interests, and to address the problem of the commons—the abuse of the environment.

From the sheer quantity of stakeholder research, one might infer that scholars see stakeholder involvement as the most important avenue to sustainable development success. Stakeholders are defined by their ability to impact or be impacted by the corporation, whether or not the corporation has any interest in them (Donaldson & Preston, 1995). Business will perceive some stakeholders as critical to firm survival (e.g. employees, sourcing partners), but not others. Stakeholder theory suggests that all stakeholders must be taken into account for the value of those interests, regardless of benefit (or lack thereof) to the firm or other shareholders (Spitzeck & Hansen, 2010a). Much research has been done to connect stakeholder management and accountability practices to corporate success through the development of relationships of trust and reciprocity important to achieving sustainable outcomes (Russo & Perrini, 2010). Cummings suggests three primary reasons why stakeholder practice is important to firms. First, understanding stakeholder expectations and perceptions can help firms avoid decisions that might negatively impact future business. Second, firms respond to external pressure with regard to social and environmental issues. Finally, stakeholder pressure help shift a firm's values toward seeing itself as a socially responsible actor in the larger community (Cummings, 2001). Many case studies in the literature look at stakeholder impact, some demonstrating positive outcomes from various levels and forms of stakeholder engagement and collaboration, others suggesting failure as a result of omission of stakeholder engagement (see, e.g., Loucks et al.,

1998 for a set of such cases). Because stakeholder relations are so specific to situation and context, it is both beyond the scope and beyond usefulness to review patterns that have emerged from that large body of literature.

We discuss certain prescriptions further under Corporate Social Responsibility, but for now, we mention challenges associated with stakeholder theory. Over and above potential differences of values and priorities between the firm and its stakeholder groups, integrating stakeholders into decision-making can be cumbersome and time-consuming and may become highly visible. These factors result in a natural tensions between stakeholder involvement and the freedom and flexibility of firms to find ways to timely manage sustainability initiatives and in ways that value and accommodate other legitimate firm goals (Cummings, 2001; Reed, Fraser, Morse & Dougill, 2005). Second, certain activities create more stakeholder friction, such as the direct extraction of natural resources, activities involving indigenous societies, activities that result in externalized waste, and transnational business activities. These activities are most obviously served by stakeholder engagement for sustainability decision-making (Higginson & Vredenburg, 2010; Lertzman & Vredenburg, 2005). By comparison, for firm activities that do not create significant stakeholder conflict, there is a balancing point at which stakeholder engagement becomes more of a burden than a benefit (Noland & Phillips, 2010).

Systems and Complexity Theory

Problems of unsustainability have unique features that make them especially difficult to problem-solve, effect through change, and manage, as well as to study. Both understanding and managing sustainability often require trans-disciplinary coordination (Maton, 2000; Norgaard & Baer, 2003), invoking ecology, geology, economics, socio-cultural, political, and intergenerational concerns. This multifaceted dynamic makes sustainability ripe for complex

systems analysis. The multiple attendant uncertainties (unknown future physical states, unknown future social values, unknown information and technological advances, and other factors) also create difficulty.

Complex adaptive systems. Complex adaptive systems [CAS] theory emerged in the 1980s as a way of bringing multiple disciplines to bear on problems of interrelated complex systems (Dodder & Dare, 2000). CAS have multiple agents acting simultaneously within these multiple systems, creating three types of complexity: static complexity including structural and institutional; dynamic complexity incorporating behavior, feedback, time cycles; and informational complexity—in a dynamic environment produced by the interaction of the systems. Dodder and Dare describe the three realms of complexity, all of which operate simultaneously in each of the interrelated systems.

> Static complexity refers to the structural aspects of a system's complexity. This includes notions of hierarchy, connectivity, detail, intricacy, variety, and levels/strength of interactions; most easily visualized as a network with complex patterns of links and nodes. Static complexity is to a certain extent context dependent, since the structural complexity would appear much differently on the micro versus macro-level scale, and would change as one redefines the scope and boundaries of the system.
>
> Dynamic complexity encompasses the ideas of complexity related to behavior, processes of cause and effect, feedback, fluctuations and stability, cycles and time scales. The focus on Complex Adaptive Systems is closely identified with this notion of changes in behavior over time, which relates to an important aspect of dynamic complexity: evolving complexity. Yet, this evolutionary aspect to the dynamic complexity can result from both the adaptation of the systems, as well as adaptation of the individual agents in the system. In fact, the complexity of a system may evolve without any adaptation by the individual agents.
>
> Informational complexity represents a somewhat more abstract notion (linked to the measurement of complexity), which can be thought of as the complexity involved in describing or evaluating a complex system. It can reflect both the static complexity, e.g. the intricacy of a network, as well as the dynamic complexity, e.g. the complexity of the processes involved in the creation of a system. From the engineering perspective, one also considers the evaluative complexity, which could be a form of information complexity needed to describe and evaluate the function, performance and "success" of a system. (Dodder & Dare, 2000, p. 29)

Actors at any given level may not be informed about the impact of their behavior on other systems or aware of the macro impact of the aggregation of many micro actors on the larger whole. To be simplistic, one mother choosing to use plastic sandwich bags for packing school lunches may not be aware of the multiple global ecological impacts—degradation of water sources, health issues for aquatic life, air pollutants from manufacture—of mothers everywhere employing plastic lunch bags (Wabnitz & Nichols, 2010).

CASs have certain characteristics of stability that make and keep them "systems," but because of the unpredictability and difficulty of controlling emerging phenomena, they also have characteristics of instability. Because of the danger of disrupting systems stability, the instability is referred to as "the edge of chaos" by CAS scientists. Degrees of either order or chaos may emerge in this environment, always in dynamic, interactive transition, never predetermined. Change happens on the edge of chaos, sometimes creating unexpected wholesale macroscopic shifts in the nature of the complex system, while at other times, creating small ripples before the system returns to a more stable state. Scientists seeking to intentionally change multidimensional systems can use CAS theory as a way to map systems and system feedback loops and to look for what are called "gateway events" at the edge of chaos where impact may create desired change (Newman, 2005).

Tools for sustainable systems. Scholars are exploring processes and tools that accommodate systems.

Learning tools. Despite 40 years of organizational learning scholarship, exploration of the links between organizational learning (OL) theory and sustainable development was late in coming (Molnar & Mulvihill, 2003; Siebenhüner & Arnold, 2007; Stagl, 2007). However, the literature reflects a fast-growing recognition that learning is a critical component of achieving

sustainability. In 2007, both Stegl and Siebenhuner took a look at the state of OL scholarship for sustainability and found the importance of learning to achieving sustainability mentioned prominently in nearly every related discipline, yet with almost no empirical follow-through.

Noting the staggering breadth and variety of OL literature, Stagl points to several themes found across the literature. These include the desirability of transferring individual learning to the organization, transferring tacit knowledge into explicit knowledge, encouraging open knowledge sharing to facilitate group learning, and an acknowledgement that learning occurs in social and cultural contexts (Stagl, 2007). Molnar identified criteria for what he termed "sustainability focused organizational learning": business has a well-articulated sustainability vision, invests in sustainability education for its employees, employs at least some of the organizational learning strategies recognized in the literature (e.g., shared vision, personal mastery, team building, mental models, systems thinking), leadership champions sustainability pursuit, and measures its progress rigorously and systematically (Molnar & Mulvihill, 2003). Some of the take-aways from the available studies include that learning occurs best where structural mechanisms were created for the initiation of learning and diffusing information,[6] where a change agent was present, and where companies were transparent about their sustainability values and evidenced concern for stakeholder values (Siebenhüner & Arnold, 2007).

The key concepts of single- and double-loop learning developed by Argyris (Argyris & Schön, 1978) and the "4I" framework (intuition, interpretation, integration and institutionalization) for understanding how learning occurs developed by Crossan (Crossan, Lane

[6] The structures he found varied from firm to firm, such as deadline-oriented goal setting, integration of sustainability milestones into research and development processes, formalized communication instruments, self-organizing work groups, clear guidelines and communication of those guidelines, and cross department knowledge sharing (Siebenhüner & Arnold, 2007).

& White, 1999) both have applicability to sustainable development. Learning, for Argyris, is the detection and correction of error. Error correction may occur through single loop learning, which involves the evaluation of a problem from within the existing "mental model" or pattern of problem-solving. Or it may occur through double loop learning, which involves backing up from the problem itself to question the mental model or the usual pattern of problem-solving. When the problem does not respond to existing patterns of problem-solving behavior, double loop learning provides a way out via novel insight. Lee may have been the first to recognize the importance of the need for double loop learning in the complex political, cultural, and scientific context of environmental problem-solving (Lee, 1994). Crossan's framework is premised on the idea that learning occurs when organizations manage to make the best use of both feedback and "feed-forward." Feedback is the knowledge organizations get from past experience, and feed-forward is the exploration of new ways of moving ahead.

Stephen Sterling has taken these ideas and linked them to sustainability. He termed learning that relies on existing values "learning about sustainability." He called learning that examines and challenges existing values and behavior patterns "learning for sustainability." He also identified a third category—learning that is participatory, creative, reflexive and with the power to be transformational. This he calls "learning as sustainability" (Sterling, 2001, pp. 10-22). Sterling has focused on integrating tools for learning as sustainability into the higher education system, but other scholars, especially those working in the area of adaptive management, are looking to pedagogical scholarship for tools of transformation that might be exported into organizational learning environments (Fazey et al., 2007). Fazey explores the possibilities of teaching higher order resilience thinking: "being tentative, evolving, or context dependent, greater tendencies to dig deeper into the data, look for hidden relationships, and

consider the multiple possible interpretations thinking for complex sustainability problem-solving" (Fazey & Raymond, 2010, p. 9).

Chiva-Gomez (2003) authored an overview of characteristic OL practices garnered from existing literature. Although Chiva-Gomez' study is not sustainability-specific, he ties these practices to successful innovation in complex adaptive systems, which may prove useful for sustainable development challenges. These include (a) experimentation, new ideas, continuous improvement, rewards, openness to change; (b) observation, openness and interaction with the (uncertain) environment; (c) mistake and risk acceptance; (d) heterogeneity, diversity; (e) dialogue, communication and social construction; (f) continuous training; (g) delegation and participation/empowerment; (h) teamwork, importance of the group; (i) collective spirit, collaboration; (j) workers who want to learn and improve; (k) leadership committed to learning; (l) learning as an essential element in the strategy and measurement of learning; (m) organizational and managerial structure that is not overly hierarchical, flexible; (n) knowledge of the organization's objectives and strategies, knowledge transfer, ready access to information, transparency; (o) sense of humour (Chiva-Gómez, 2003).

Both learning processes and the environment in which learning occurs can impact sustainability outcomes. Creativity and innovation require an environment in which actors have the learning tools to break with past behavior and make changes for the future (see, e.g., Argyris, 1990; Argyris & Schön, 1978; Bell & Morse, 2003; Blackmore, 2007; Laszlo, 2003; Meppem & Gill, 1998; Post & Altman, 1994). Reflective processes can be useful in situations of uncertainty by intentionally creating pathways for integrating new information, and for the same reason, can be useful for breaking down value and bias barrier. Such barriers are often embedded in traditional planning mechanisms, blocking learning and therefore innovation. Laszlo offers a

prescriptive method for learning through complex sustainability problems (Laszlo & Laszlo, 2006) involving the bringing together of individuals to dialog toward the emergence of collective wisdom, and Funtowicz and colleagues have reviewed informational tools designed to include stakeholders from the data gathering process through decision-making, specifically geared for the kind of complexity accompanying sustainability (Funtowicz, Martinez-Alier, Munda & Ravetz, 1999).

Adaptive management. A complex system in which social subsystems and ecological subsystems are inextricably linked is called a socio-ecological system [SES]. Adaptability and adaptive management were introduced by Holling and Walker in the 1970s, the former a way to describe the self-organizing abilities of such systems to evolve and adapt to the uncertainty of their environment, and the latter a management tool for such systems (Walker et al., 2004). SESs are self-organizing because of rules of self-identification present within each subsystem that work more or less predictably to keep the system fairly stable (Holland, 1992). Examples of organizing rules in an ecosystem might be observed in a food chain. In an airline business, organizing rules might be "better, cheaper, on time." This becomes more complicated when the interactivity of integrated or nested systems is taken into account. For example, "better, cheaper, on time" will occur alongside rules operating within the country's economic system and simultaneously rules within the more micro systems of flight markets and individual airport environments. Depending on what evolves in each of these arenas, a stable or unstable situation may ensue for the airline.

Regardless of the type of system, researchers have identified an evolutionary scheme that might be described as cycling through four phases, although not always in order. Three of these phases are relatively predictable: growth, exploitation, and conservation. The fourth, "chaotic

collapse, release and reorganization," is unpredictable. Staying with the airline analogy for purposes of illustration, the hijack of the planes that collapsed the Twin Towers could be considered such a chaotic collapse. It is during this last phase that it is critical to both assess the situation for future activity and also possible to innovate. The destruction of the Twin Towers critically and at several levels changed how the air industry system operated going forward. A system's adaptability, characterized by its resilience—the ability of a system to survive a perturbation without losing the major characteristics that define it, and transformability—or the ability of a system to respond to an untenable perturbation by reorganizing into a new stable state that might in significant ways no longer resemble the original system (Folke et al., 2010).

Adaptive management was originally a tool to manage natural ecological resources—forests and water sources, for example (Alexander, 2010). However, its acceptance and utility for managing complex ecological environments has made it an attractive research subject for complex sustainability projects. The adaptive management plan is actually a continuous *planning* strategy, rather than a set plan (Alexander, 2010). It relies heavily on continuous, staged reflective opportunities to review program consequences, integrate new information, and revise direction as necessary (Norton, 2005). A plan's value depends on how resilient and transformative the macro system is and how adept humans are at using indicators to identify gateway moments and introduce needed innovation. In the case of the airline analogy, resilience might be the flexibility to condense its flight schedules to conserve resources during a recession, while transformability might be the introduction of additional security technology to guard against future chaotic events.

Adaptive management shares features with learning theory, including the capacity to provide an indefinite program of monitoring and adjustment, with every successful adaptation only a temporary "solution" to changing selective conditions (Newman, 2005).

Institutional design. Sinner's work calls for changes in the very design of institutions, to effect a fundamental perspective shift from "a problem to be solved" to "a problem situation to be improved" (Sinner et al., 2004). He calls for a strengthening of "integrative studies," in which decision choices for sustainability can be studied against a backdrop of contextual boundaries. By this, he means traditional economic efficiencies must be judged in reference to social and ecological efficiencies, and not on their own merit. Further, Sinner speaks against the use of a single metric (the dollar) for measuring well-being, and instead calls for a revised cost-benefit analysis against which to assess sustainability activities. The common measure, called Kaldor-Hicks, assumes any dollar gained is spread out across the commons equally. That is not only inaccurate, but it is inadequate to measure effects of an activity to environmental and social well-being (Sinner et al., 2004).

Change processes for complex challenges. While not denying the utility of the metaphor, Burnes believes the utility of complexity theory is marred by cognitive and practical difficulties for firms attempting to harness complexity theory as a tool for change (Burnes, 2005). For better utility, he promotes a return to Lewin's three-step change process based on disrupting the status quo adequately to create an opportunity to unlearn destructive behavior and replace it with constructive behavior as a means of shaking up the status quo, creating an "edge of chaos" where change can be introduced, and then institutionalizing the change (Burnes, 2004).

Environmental, Ecological, and Sustainability Economics

Three streams of economic theory offer contributions to the sustainability conversation: environmental economics, ecological economics and sustainability economics. Environmental economics is the mainstream approach favored by the majority of economists, especially in the United States. Ecological economics emerges from a more heterodox economics, and has a solid, if smaller, following. Sustainability economics is new, emerging to address a deficiency of over-anthropocentrism in the other two streams, such that they do not easily take into account society's relationship with nature (Baumgärtner & Quaas, 2010). However, what has come from this field of study in the way of solutions is so far simply the recognition that an anthropocentric perspective is inadequate to address some of today's sustainability problems. That is a big step, but only the first. We will discuss the contributions of the other two streams below.

Environmental economics. Environmental economists approach sustainability from the capital theory approach. Capital theory, applied to the Brundtland definition, will seek a means of ensuring that current uses of capital—natural and man-made—do not deprive future generations of their access to that capital. However, economists differ in whether the capital that must be available to future generations needs to be natural, or whether man-made substitutions (e.g., steel, concrete, and plastics replace wood, or renewables like corn and bio-fuels to replace fossil fuels) will be acceptable. The view that society—and also the rest of the flora and fauna—is dependent upon nature for basic life support services, and that man-made capital cannot be infinitely substituted for all natural capital is called "strong sustainability." By contrast, the view that technology will enable man to continue to find substitutes for natural capital, and that what matters for future generations is that they have an adequate amount of capital in the aggregate—man-made plus natural—is called "weak sustainability." This argument is critical, in that one's

perspective about how to manage natural resources will be skewed toward reduced usage if one takes the view of strong sustainability, and toward reliance on technological innovation rather than reductionism, if one takes the weak sustainability view (Alrøe & Kristensen, 2003; Hediger, 2004; Turner, 2006).

The firm's approach to economics is important, since it is at the firm level where many of the processes leading to degradation of air and water and overuse of our natural resources occur. Accepting a strong definition of sustainability leads to a more robust and immediate concern for the environment, and a more reductionist approach. By contrast, accepting the weak approach may lead to an over-reliance on future technology or an attitude of procrastination (Alrøe & Kristensen, 2003).

Two problems arise when discussing the relationship between economics and firm behavior. One is that the impact of any particular firm on the aggregate natural capital availability is difficult to estimate (de Groene & Hermans, 1998). Malovics gives the example of an adopted eco-efficiency innovation that reduces the need for raw materials in product production. The reduction in raw materials enables producers to drop the item's price, thereby driving up consumer demand, a production upswing, and a total resource use greater than before the eco-innovation—coupled with additional consequential impacts, such as added transportation impacts (Málovics, Csigéné & Kraus, 2008). It is also difficult for an individual firm to measure either its unsustainability or sustainability impacts, since impacts will occur in local, regional, and global levels, across time, and in terms of environmental, societal, and economic outcomes (Málovics et al., 2008).

The second dilemma is that, as we have seen from the work of Springett (2003) and others, weak business sustainability practices like TBL and eco-efficiency have simply not

turned the ship, so to speak, on resource over-use. For other discussions about the way conceptualizations of sustainability constrain and enable firm environmental management and sustainability behavior see, e.g., Boje, Oswick & Ford, 2004; Milne & Walton, 2005; Muhlhausler & Peace, 2006; Springett, 2003.

Ecological economics. While environmental economists look through a lens of available capital, environmental ecologists see the earth as a "steady state" environment, essentially a closed system, with the exception of solar energy. Some natural resources are finite, while society consumes other potentially renewable natural resources faster than they can be renewed (e.g., lumber and rain forests). At the current rate, transforming natural resources into growth products—with consequential resource waste and eventual depreciation of the goods and infrastructure produced—will eventually result in natural resources values higher than those of the goods and infrastructure produced with the resources. The physical and economic ramifications would include limited availability of goods, price inflation, and an overall reduction in quality of life. Daly has termed this phenomenon "uneconomic growth" (Daly & Holm-Mueller, 2007). Ecological economists like Daly, Costanza and Kerschner argue for a steady state economy to counter uneconomic growth. In part—the part that concerns firm behavior–this would involve "doing more with less" (Costanza, Cumberland, Daly, Goodland & Norgaard, 1997; Daly & Holm-Mueller, 2007; Kerschner, 2010).

To use a pie analogy, environmental economists see the availability of goods as pie –only so much to go around. The answer to feeding those who are hungry is to bake more pie—growth. By contrast, environmental ecologists would suggest that we bake a "richer" first pie. A richer pie yields more servings—because people can be satisfied with a smaller but richer piece. To put it in economic terms, a steady state economy would be:

> [A]n economy with constant stocks of people and artifacts, maintained at some desired, sufficient levels by low rates of maintenance ‘“throughput,” that is, by the lowest feasible flows of matter and energy from the first stage of production (depletion of low entropy materials from the environment) to the last stage of consumption (pollution of the environment with high entropy wastes and exotic materials). (Daly, 1991, p. 17)

How does this translate into sustainable development guidance for the firm? Kogg and others have suggested that firms focus on sustainable product life-cycle. Kogg notes that some firms are moving from a traditional producer-centric approach to sustainability to a life cycle approach, with a goal of folding sustainability concerns into every point along the supply and distribution chain (Kogg & Mont, 2012). A shift in product life-cycle begins with product design and takes into account not only raw material choice and manufacturing methods, but end-of-use considerations like recycling or conversion of a spent product into raw material for new productions. A large body of literature exists, principally focused on inventory control, eco-engineering and reverse engineering (reuse, recycle and reduced raw material use), and largely industry, material, or process-specific, and therefore cannot be summarized here (see, e.g., Min & Kim, 2012 for an excellent literature review).

The existing body of literature has provided important and concrete guidance for firms, especially for operational efficiency strategies. While the aggregate impact of these strategies is not to be downplayed, a critical, as of yet poorly understood and under-studied challenge for achieving sustainability is the control of sustainability influences along the supply and distribution chains, especially given the complexities of a transnational market. A single example is useful to understand the problem. One study cited by Kogg examined the source of water for cotton goods used in the European Union [EU]. Only 25 percent of all water used for farming and the various stages of production actually occurred within the EU. The remainder occurred across multiple Asian countries. Resource uses funded in the EU have unmeasured

depletion costs across borders. Monitoring that use across jurisdiction and cultural practices is exceedingly difficult. Literature on sustainable sourcing in a global world is still in its infancy, but the need has been recognized. A Google Scholar search with the words "sustainable" and either "supply chain," "sourcing," or "purchasing" in the title pulled up 60 scholarly articles published during the 20 years between 1987—the date of the Brundtland Commission report—and 2007, none of which were literature reviews. By contrast, in the five years including 2008 through 2012, the same search turned up approximately twice as many articles, several of which were literature reviews (Al-Odeh & Smallwood, 2012; Gold, Seuring & Beske, 2010; Miemczyk, Johnsen & Macquet, 2012; Min & Kim, 2012; Seuring & Müller, 2008; Syahruddin & Kalchschmidt, 2011). The advent of these fresh literature reviews suggest an emerging push to collate and understand the existing data, to find gaps in the literature, and to set a future research agenda.

Ethics

Ethics are principles and the rule sets that follow from them that govern behavior, but unlike moral "right or wrong" values, ethical rules are derived from the values, responsibilities and duties attending certain roles or functions. Business ethics are a form of applied ethics, meaning a system of ethics intended to be applied in the context of doing business. They are "prescriptive," meaning they act as guidance (Donaldson & Dunfee, 1994; Velantzas & Broni, 2010). Multiple sets of ethical responsibilities have been attached to sustainability behavior.

Environmental ethics. Two environmental ethical streams dominate western philosophy. The anthropocentric or conservationist perspective was articulated earliest by the first U.S. Forest Service Chief, Gifford Pinchot, and limits the present use of natural resources only to the extent that such resources are managed to ensure continued availability for use by

future generations. The alternate and opposite view, also called holist or preservationist and espoused by naturalist John Muir, abhors the commercialization of nature. To Muir, the living ecosystem and even the geological attributes of nature hold innate value as compelling as human value, and must be protected from deterioration and destruction. In this view, human consumptive behavior has the potential to push the ecosystem to the brink of its vulnerability, and therefore must be constrained to the carrying capacity of the planet (Norton, 2005).

The choice of environmental value clearly has distinct implications for firm sustainability behavior, beyond even those postulated by the environmental economists, as economist theory is anthropocentric. The ethics of Muir, which accord value to the ecosystem and its nonhuman inhabitants—flora and fauna—intrinsically, without reference to its human utility value, would suggest in the extreme a complete "hands off" approach (Norton, 2007).

Over the past couple of decades, a third ethical perspective has emerged, "environmental pragmatism." This perspective, shepherded by environmental philosophers Bryan Norton, Andrew Light, Steven Moore, and others, asks philosophers to refocus their discussion away from the theoretical toward the practical, to eschew stalemating conversations about human versus nonhuman value in favor of conversations that might impact political reality (Light & Katz, 1996). In that vein, Norton offered "convergence theory." Based on the reliance of human society on the well-being of the natural society, either value position (human or nonhuman) taken in the long term should result in nearly identical decision-making (Norton, 2005). Prescriptive and descriptive offerings from Norton's work include adaptive management and the use of bridging language to facilitate communication between agencies and departments for information sharing and collaborative learning, and to break down value bias that inhibits solution innovation (Norton, 2003, 2007).

Business ethics and corporate social responsibility. In the business world, companies feel some of the strongest responsibilities to shareholders and investors, who have entered into a contract with the firm to provide capital to support business activities in exchange for an opportunity to share in the profits. Firms have a fiduciary duty to these investors to use these funds accordingly. Consequently, many have argued against a business obligation to do social good. Milton Friedman may be the best known for articulating this view in 1970:

> That responsibility is to conduct the business in accordance with their desires, which generally will be to make as much money as possible while conforming to their basic rules of the society, both those embodied in law and those embodied in ethical custom. (Friedman, 1970, p. 32)

Ethical custom has shifted significantly since Friedman's statement. Yet, the exact nature of the relationship between business and the environment, between societal stakeholders beyond a firm's own shareholders, beyond the mandatory obligations of environmental law is not yet well defined nor readily enough acted upon (Pesqueux, 2011). So although the corporate world no longer argues over whether an obligation exists, the institutional and legal structures contexting business behavior—including its traditional ethical prescriptions—continue to hold business to its fiduciary duty to its stockholders foremost (Gossling & Jansen, 2004). The question of how to carry out its other social obligations without infringing upon that duty are largely unresolved.

With regard to the ethical responsibility of business to the environment and to its non-shareholder stakeholders, sustainable development is largely operationalized under the ethical umbrella of Corporate Social Responsibility [CSR]. CSR theory grows out of stakeholder theory of the firm, but asserts a social duty beyond the "primary" stakeholders (investors and customers) to a broader array of "secondary" stakeholders, including employees, suppliers, the natural environment, and society as a whole (Benn, Dunphy & Griffiths, 2006). The parameters

of that responsibility are mostly left to be defined through negotiated stakeholder relationships (Linnenluecke & Griffiths, 2010).

The concept of CSR has been around for many years and was originally exercised as corporate philanthropy and other forms of voluntary community contributions and involvement. More recently, sustainability has been gathered under the CSR umbrella, adding another dimension of stakeholder obligations. A significant body of research on CSR has developed, and on the relationship between CSR and sustainable development. As noted, CSR is basically theorized as a subset of stakeholder theory, which need not be repeated here. However, it is useful to expand on certain literature that categorizes CSR behavior, essentially providing a rubric to determine how significantly integrated CSR behavior is into firm practices. In 2003, Dunphy, Griffiths and Benn developed what is now the most widely respected categorization: six phases ranging from rejection of sustainability practices altogether to integration across the "value constellation" (Benn et al., 2006). While integration does not eliminate the need for measuring outcomes, it is thought to position a company to more easily take advantage of sustainability opportunities. Other sets followed, all including passive, reactive, and proactive strategies or stages (Cristina, 2012). A refined version of Dunphy's work can be found in Figure 1, adapted from Holton, Glass and Price, 2010 (Cristina, 2012).

A firm might not move in a linear fashion from ignorance to corporate sustainability, and it might engage more responsibly in some projects but not in others. One indication from the research is that success in moving from stage to stage is strongly assisted by programs that train and reward employees for maintaining and implementing CSR values in their work (Benn et al., 2006).

Phases	Treatment of human resources	Treatment of natural resources
Phase 1 Rejection	Employees and subcontractors are exploited; the organization has no responsibility regarding health and work safety or employee development.	Organization doesn't assume responsibility for the impact of its activities on the environment. Natural resources and environment can be exploited freely and with no costs.
Phase 2 Ignorance	Technological and financial factors dominate business strategies. The most important aspects of human resources management are excluded. Social responsibility is ignored.	Technological and financial factors dominate business strategies and environmental objectives are excluded.
Phase 3 Compliance	Technological and financial factors still dominate business strategies. Compliance is achieved only as a risk reduction exercise.	Environmental abuses are eliminated, but environmental issues with smaller impact on the community are ignored.
Phase 4 Efficiency	Steps are taken to integrate HR functions into a coherent system of human resources management to reduce risk and increase efficiency. Community projects are carried out only if funds are available and if they bring real benefit.	Environmental issues that generate costs are regularly reviewed to reduce costs and increase efficiency.
Phase 5 Proactive strategies	Intellectual and social capital is used to obtain a strategic advantage. The effects on the community are taken into account and programs to reduce these effects, integrated into business strategy, are carried out.	Proactive environmental strategies are valued as sources of strategic business opportunities and competitive advantage. Steps are taken to enforce those production processes that will produce ecologic products.
Phase 6 Corporate sustainability	The organization adopts clear and strong ethical practices based on the respect for stakeholders' needs, influencing market operators and society in general to comply with human rights, to adopt fair social practices, to develop human capital.	The organization is an active promoter of sustainability values and seeks to influence market players and society, in general, in this respect. It adopts best environmental practices, as the company is aware that it must act responsibly.

Figure 1. Dunphy's Phases (Cristina, 2012)

Values in language. We sustain what is valuable to us (Tainter, 2003). Leadership orientation, management strategies, and organizational performance have all been tied in the

literature to values (Agle & Caldwell, 1999; Hambrick & Brandon, 1988; Hambrick, Davison, Snell & Snow, 1998). We have discussed elsewhere institutionalized business biases that value profitability, shareholder returns, and short term gains over sustainability activities (see e.g., Sharma, 2000), making it difficult for firms to solve sustainability problems. Even within a firm committed to "becoming greener," managers assigned to implement sustainability activities may find themselves at odds with managers responsible for achieving other organizational goals such as marketing, safety considerations, resource management, profitability, and shareholder relations. Environmental philosopher Bryan Norton coined a term, "towering" for the tendency of organizational divisions to develop values vertically, to the detriment of policy-making and problem-solving across divisions (Norton, 2005).

A body of literature suggests that values find their way into our culture through language and the way we use language to "frame" an issue. A frame is a set of ideas and assumptions that hold meaning and contain values. Frames are tools to assist in sense-making for complicated topics (Bolman & Deal, 2011; Lakoff, 2010). But to the extent we rely upon a particular way of thinking about something, that frame may mask alternative realities that do not fit the frame (see, e.g., Morgan's [1980] discussion of the limitations of the paradigm). To the extent that the values underlying frames about business and about sustainability are in conflict, it becomes more difficult to reconcile the two (Audebrand, 2010).

One type of linguistic frame frequently used to assist with sense-making is the metaphor (Morgan, 1996), which is a comparison that imbues one entity with the characteristics of another. Multiple scholars have pointed out how metaphors and the values they carry might inhibit sustainable development. Larson, for example, suggests that concepts desirable to economists and therefore to firms, like "progress" and "growth," are not good descriptors for biological or

ecological cycles (Larson, 2011) and do not help firms understand how sustainable development and firm success can be intertwined. At a more micro level, Audebrand suggests business switch away from the use of war metaphor, e.g., "target, attack, capture, declare victory, defend, deploy, engage, kill, launch a campaign, lead the charge, strike, and take a shot," to describe activities, as these reinforce adversarial perspectives, thought, and behavior (Audebrand, 2010, p. 416). As alternates, he suggests exploring a medley of metaphors that encompass values of working through conflict and sustaining our "home"; e.g., family, stewardship, and caring metaphors. (See also, e.g., Howard-Grenville and Hoffman's [2003] discussion of the utility of problem framing tactics, calls by Örtenblad, Richter, Weick and Norton to look at the way language and symbols can be utilized to invent and reinvent a meaningful dialogue [Örtenblad, 2002; Weick, Sutcliffe & Obstfeld, 2009]; Norton's call for developing a bridging language to help specialists and actors from different arenas communicate across value chasms [Norton, 2005]; and extensive discussions on learning as a process that is well-suited to the facilitation of both the development of shared sustainability values and change practices. For a fuller discussion, see Meppem & Gill (1998); Pusztai (2006) and Senge (1994).

Recent Trends

Recent literature has coalesced around a handful of ideas. One is an acknowledgement that 20-plus years of applying traditional business change strategies to sustainability has not resulted in far-reaching change in business practice. Another is the broad acceptance of a systems perspective within current literature. Challenges related to sustainable development are now uniformly described as complex, dynamic, multi-dimensional, and evolving. The literature calls for a business response to sustainability challenges to accommodate complexity, dynamics,

multidimensionality, uncertainty, perpetuality, and a host of other moving parts. A third concept, that of "embeddedness," has special relevance to this dissertation and is reviewed here.

Embedded sustainability. Embeddedness is a term originally coined by Polanyi in 1944 (Polanyi, 1944), and subsequently used to describe the multidimensional contexts in which social and economic activities are carried out (Boons & Howard-Grenville, 2009). The term was adapted into the discipline of industrial ecology a couple of decades ago, but sustainability scholars did not borrow the concept in earnest until the past few years. Industrial ecology is the study of the optimization of materials use and energy flow in production, including the reuse of waste and surplus as raw materials for other production (Boons & Howard-Grenville, 2009). Embedded sustainability refers to the integration of sustainability activities into business cores in ways designed to increase sustainability without costing a "green premium" (Laszlo & Zhexembayeva, 2011). Laszlo and Zhexembayeva (2011) designed an embedded sustainability strategy that gave the term high exposure in the literature, but "embedding" and "embedded" are used freely by other scholars and practitioners who offer their own multidimensional programs for integrating sustainability deep into the business model.

Laszlo's version proposes 12 principles designed to result in significant strategic advantage for both a firm and the planet in a way that integrates sustainability into the firm, rather than "bolts" it on. Laszlo's principles touch business through relationships, processes, strategies, and mental models. Five principles are linked to value creation: (a) maximizing sustainable value, rather than compromising between shareholder and stakeholder values; (b) taking an "outside-in" approach, striving to meet customer and stakeholder needs; (c) expanding the scope of sustainability activities to the entire value chain; (d) aiming for sustainability-based product differentiation, which goes beyond using sustainability measures for risk or cost

reduction; and (e) integrating sustainability into the business core, rather than as a stand-alone project. Three are relationship principles: (f) engaging stakeholders—co-plan, co-develop, co-partner; (g) substituting transformational relationships—co-ownership, commitment—for transactional relationships; and (h) cooperating with competitors for value-added opportunities. Four principles are linked to capacity development: (i) adding right-brain design-thinking; generative engagement; (j) asking heretical questions, unlearning conventional wisdom; (k) making sustainability everyone's job; and (l) building on local knowledge and local partnerships (Laszlo & Zhexembayeva, 2011).

These principles are unlikely to work, says Laszlo, unless linked to one of three existing competitive strategies: Michael Porter's generic "positioning" strategies (Porter & Kramer, 2006); Kim and Mauborgne's new market creating "blue ocean" strategy (Kim & Mauborgne, 2005); and Clayton Christenson's "disruptive innovation," which helps innovators push into the market significantly different versions of existing products or differing solutions to existing problems (Christensen & Overdorf, 2000). Laszlo also proposes a model of questioning designed to help firms generate ideas that bring embedded sustainability principles to bear on one of these competitive business strategies.

Bertels calls her culture-based approach a "portfolio of practices" for embedding sustainability (Bertels et al., 2010). Her portfolio is designed around two types of practices—"fulfillment" or practices that allow the firm to deliver on its sustainability commitments, and "innovation," or practices that help firms move towards sustainability. Fulfillment and innovation mechanisms can be either formal (e.g., practices based on rules and procedures) or informal (e.g., practices impacting values and behaviors). Formal fulfillment practices "clarify expectations." Practices that clarify expectations include codification, integrating, assigning,

training, incenting, assessing, and verifying or auditing. Formal innovations "instill capacity for change." These practices include ways of learning and developing. Informal fulfillment practices "foster commitment." To foster commitment, practices include engaging, signaling, communicating, managing talent, and enforcing. Informal innovation "builds momentum for change." Practices here are to raise awareness, champion, invite, experiment, re-envision, and share (Bertels et al., 2010).

Lacy et al. also call for embedding sustainability as one of the strategies to move the business world "beyond the tipping point" toward sustainable development (Lacy et al., 2010). Lacy's three key elements for embedding sustainability rely upon measurement coupled with incentives for performance: (a) measuring sustainability performance in terms of positive and negative impact on society; (b) linking performance on sustainability to traditional business value barometers such as revenue growth and brand reputation; and (c) tying sustainability outcomes to performance frameworks and pay packages.

Haugh and Talwar (2010), from work in the context of multinational companies, posit an embedded learning strategy: (a) company-wide sustainability education; (b) collaborative, cross-function "awareness raising"; (c) increasing commitment through employee involvement opportunities and action learning; and (d) the integration of sustainability into the firm's long-term strategies through social learning and the expansion of company knowledge systems.

Boon and Baas, from within the discipline of industrial ecology, also explore the implications of embeddedness. Given that sustainability activities take place within contextual systems, sustainability activities would be more successful if three elements beyond the technical are accounted for. Those are the social network in which activities occur; the attitudinal and procedural changes attending status quo, reform, or transformational contexts; and additional

skills and capabilities to support change beyond status quo are made available (Baas & Huisingh, 2008).

Last Words

The challenges associated with sustainability—complexity; multidimensionality; uncertainty; temporal and spacial span; perpetuality; and physical, cultural and social dimensions—have been approached in the literature from every conceivable discipline and subdiscipline. Scholars are just beginning to ground theoretical concepts in data. Sustainability criteria are seen as so circumstance-dependent as to make usable generalizations about sustainability strategies difficult. Managers admit that, while they are hiring experts and taking tentative or brave steps, they still encounter significant barriers to sustainability achievement. Though Hoffman and Bazerman (2006) rightly pointed out that understanding the problems can guide us toward solutions, highlighting the problems is not enough. Diane Wood, addressing the interminable debate on the implications of adopting policies of corporate social responsibility, once suggested we were asking the wrong questions. The right questions, she opined, might be, "How can and do corporations contribute to constructing 'the good society'?" (Wood, 1991, p. 66). That is the approach this dissertation also takes. This dissertation explores how two corporations can and do construct sustainability.

CHAPTER 3

THEORETICAL FRAMEWORK, RESEARCH DESIGN, AND METHODOLOGY

Chapters 1 and 2 set the context for this research, laid out the barriers to achieving sustainability, and reviewed the multiple theoretical and conceptual prescriptions for sustainable development. This chapter lays out the theoretical framework that informs research methodology, describes the research design, describes in detail the case selection process, and lays out the methodology details.

It has been pointed out that a section on theoretical framework is unnecessary where the researcher has chosen Grounded Theory method, from which theory will emerge. However, this section is not about the theoretical basis of the research, but about the theoretical perspective of the researcher. My perspective drove the topic choice and underpinned the project design. It bears mentioning for those reasons alone. My goal is to light the path to sustainability taken by successful firms in hopes that other firms might benefit. I have been guided and even driven by a pragmatic desire to find answers to the challenges faced by businesses willing to implement sustainability programs. Patton (2002) maintains that pragmatic questions about what makes the world a better place are valuable subjects for research, with or without a theoretical grounding. This research is pragmatically focused on organizational processes and strategies underlying successful sustainability programs, to examine the dynamics of how these sustainability programs operate. This research is the sort of pragmatic inquiry to which Patton refers.

Pragmatism and Sustainability

In 1969, president of the American Political Science Association, David Easton, citing the availability of apocalyptic weaponry, unprecedented pollution, and internal economic and racial dissension within the U.S., entreated his colleagues to "reconsider our image of what we

want to be." He asked them to put aside their preoccupation with perfecting research technique and battling over theory, and to turn their attention to action, stating: "it is more important to be relevant and meaningful for contemporary urgent social problems than to be sophisticated in the tools of investigation" (Easton, 1966, p. 1052). Applying Easton to the world of sustainable development research, a pragmatist approach bypasses debate about what ought to be sustained, by whom, and how, and focus on helping those who are making the effort with real-world problem-solving. Three scholars from the field of environmental philosophy are role models for a pragmatic approach.

Bryan Norton

Bryan Norton first began entreating fellow environmentalists to take a pragmatic turn in 1991, with the publication of his book, *Toward Unity Among Environmentalists* (Norton, 1991). Norton's work has been important to my thinking about sustainability in firms. Taking just one example, in his investigation of institutional obstacles to sustainable behavior in government agencies, he found, among other things, that different departments within the same agency will develop differing values, priorities, and even language based on their departmental tasks, leading to potential conflicts around environmental decision making (see, e.g., Norton, 2005). Norton calls this phenomenon "towering." For Norton, identifying structural constraints—like towering creates an opportunity to find antidotes—in this case, shared sense-making.

Andrew Light

Light reframes existing arguments about environmental matters to make them more relevant within modern discourse. In other words, Light rewrites these arguments in the language of the field, to help politicians, business interests, and the public sort through their alternatives and move forward. Light has crafted useful arguments on issues including

environmental activism (Light, 2001a, 2002b, 2003), urban environmental policy (Light, 2001b), bioethics (Light, 2002a), technology (Higgs, Light & Strong, 2000), risk management (Light, 1998), hunting (Light, 2004), and others.

Steven Moore

Lastly, tracking with the "whatever works" philosophy, Moore believes "the doing" of sustainability is where the learning takes place, rather than in the design. Moore warns researchers to beware of a design that serves the philosopher better than it serves the goal (Moore, 2006). Both pragmatism and sustainability, he says, are less "coherent philosophies" than "unfolding stories."

Though this research begins without theory, it heeds the context within which stories are told, is open to discoveries that defy conventional wisdom and to tools not conventionally associated with sustainability, and strives to be relevant and meaningful for problem-solving in today's world.

Research Design

Firms seeking to enhance their sustainability behaviors identify low-hanging fruit, but once it has been plucked, struggle and falter going forward. The firm capable of realizing ongoing sustainability achievements across its activities and throughout its value chain, despite the outlined litany of barriers, must be seen as an anomaly. To discover what these exceptional firms are doing differently, this research is designed to take a close-up look at context, culture, value and action choices within them.

Qualitative Approach

The successful implementation of sustainable development programs has turned out to be less than straightforward. Getting at cultural, structural, and political dynamics that might

inform us—often subtle elements—requires a flexible, open-ended research method, and a sensitive, intuitive analysis. Qualitative research is useful when deep description may shed light on conditions giving rise to a phenomenon (Mjøset, 2005), when necessary to reveal and gain understanding of unobserved aspects of organizational conduct (Glaser & Strauss, 1967), or to ferret out the details of complex and emergent phenomenon (Glaser, 1992).

By contrast, quantitative research in the social sciences has utility when looking for "social regularities," cover laws, and correlations. Relying on large data samples, its data collection methods—including survey and other tools that break information down into comparable, measurable bits—have limited utility for collecting nuanced and contextual information (Mjøset, 2005).

To shed light on the context, culture, and action choices of such atypical firms, this research takes a qualitative approach. Patton advises selecting a research approach by identifying the fundamental or "burning questions" of the research and the research method that most clearly mirrors those questions. The burning question for this research, "how do these firms do it?" is an oversimplification. Asking with more specificity resulted in the following burning questions:

- How do these organizations identify and choose sustainability activities?
- What problem-solving techniques are employed when sustainability values conflict with other legitimate organizational values?
- How do these organizations support outside-the-box thinking, to create sustainability opportunities or to innovate past barriers?
- What structural, cultural, or political factors enable sustainability implementation and problem-solving?

- What tools are brought to bear on the known sustainability barriers (e.g., issues involving complexity, uncertainty, perpetuity, and systems)?

In attempting to match my burning questions to the burning questions Patton associated with each of 16 qualitative traditions, several resonated with me, including ethnography (What is the culture of this group of people?); reality-oriented theories (What can we establish is going on in the real world with a relative degree of certainty?); social construction (How have people in this setting constructed reality and what are the consequences of their constructions for their behaviors?); systems theory (How and why does this system as a whole function as it does?); and grounded theory (What theory emerges from and is grounded in fieldwork so as to explain what has been and is observed?) (Patton, 2002, pp. 79-128). Ultimately, ethnography was rejected because my data needs did not require immersion in the culture. Reality methods were excluded for their positivest ontology. Systems theory offered more of a balcony view, while I wanted a view from the factory floor. A table affording a more thorough look at my thought processes can be found in Appendix A.

This process of selection left me with two remaining traditions, according to Patton. The first, social construction, is not a method in its own right, but an ontology or way of understanding the participants' reality through their own eyes. The second, grounded theory, begins from the perspective that theory can come from, rather than drive, research, and it offers a rigorous analytic method to arrive at that end point. I adopted social construction as a way of thinking about my data and grounded theory as a way of handling and analyzing it. Although these two approaches have certain inconsistencies (explained at great length elsewhere), there is a strong history of constructionist adoption of grounded theory method (Charmaz, 2008), and so I tag along. How I reconciled the inconsistencies will be detailed as the inconsistencies arise.

Social Construction

Social construction is not a methodology, but an ontological perspective that views "reality" as a product of shared understandings within a group or organization, invented collectively over time through beliefs, actions, and agreed-upon interpretations of events (Garvin, Edmondson & Gino, 2008). Constructed realities are based on collectively shared scripts, frames, and taken-for-granted assumptions (Liao & Wu, 2010). People may experience this reality as existing independently of themselves, and their beliefs or understanding of this constructed reality may constrain or facilitate their actions (Garvin et al., 2008). Despite the fact that socially constructed reality is a collective human interpretation, people within those cultures believe these interpretations to be real and act in ways that are consistent with the creation of that reality (Price, 2003). Actions taken on the basis of these interpretations can be physical or structural, and these structures can serve to institutionalize certain aspects of the constructed reality, even while relational aspects remain more dynamic or fluid (Kontoghiorghes, Awbre & Feurig, 2005).

There are two approaches to constructionism: dualist and monist. A monist approach stops with the identification and description of a constructed reality from the perspective of the studied culture. A dualist approach acknowledges that the researcher, outside the studied culture, may distinguish between the researcher's objective understanding of a phenomenon and the studied group's claims about it (Patton, 2002). Given the many culturally shared and acted-upon myths—"the earth is flat," for example, leaving the door open to a dualistic approach seems prudent. Nevertheless, from a social constructionist view, a good starting place for exploring a successful sustainability process starts with a look at the collectively constructed understanding within the organization of its path to success.

Using narrative and the *in vivo* language of the interviewees, the goal of social construction is to take the reader into each organization for a rich understanding of each firm's approach to sustainability decision-making, and also of the cultural and structural context in which these decisions are made.

Grounded Theory

Grounded theory (GT) starts from a position of no theory and offers a systematic method for developing theory, or at least moving closer to theory development, using field-collected data about a phenomenon (O'Reilly & Marx, 2012). GT is a qualitative approach, and like ethnography, it is designed to place the researcher within the subject environment to examine context, processes, motivations, relationship dynamics, and the subjects' own understandings of the phenomena in question. But unlike ethnography, being in the field does not necessarily require lengthy immersion, and the end goal is not simply understanding through rich description, but obtaining adequate high quality data to work with for the purpose of ferreting out patterns—theoretical conceptualizations—that might be the basis for future research. Theories are said to "emerge" from a very systematic process of GT analysis, which involves iteratively comparing each bit of data with every other bit of data in a methodical way, looking for repeating ideas, grouping these ideas into thematic categories, and then looking for relationships that connect these themes through theoretical concepts (O'Reilly & Marx, 2012). It is an iterative, non-linear process, in that the analytic procedure often sends the researcher back to the data or the data source or to find additional sources, looking to validate or clarify themes as they begin to emerge through the process. This method of analysis is both inductive—discovering patterns from many bits, and abductive—which might be understood as an inference comparable to an educated leap of intuition (guess) (Douven, 2011).

GT is an appropriate choice for this research because the existing body of theory offers multiple, occasionally conflicting suggestions, difficult to choose among. Also, much of the literature is grounded in survey rather than observed data or open-ended queries, providing little in the way of nuance. GT gives the researcher an opportunity to explore the data to expose theoretical constructs that can be compared to existing literature, and can also possibly suggest previously unconsidered conceptual implications for further study.

GT is not without its limitations, both theoretical and actual. For the novice researcher, the clearly laid out "instructions" that attend GT are comforting. But, although the procedural logic of GT's step-by-step analytic process was originally offered as a method of adding rigor and reliability to qualitative research (Charmaz, 2005), there is no way to get around the impact of the researcher's talents and biases on the study conclusions. That instructions are clear does not take away from the fact that judgments must be made all along the analytic way about which data bits seem similar enough to be categorized, and how to ferret out themes inherent in further category groupings. And that induction and abduction are involved begs a question about the qualities or characteristics of the researcher, her experience or training with the subject matter, data gathering techniques, or GT methods themselves, and her capacity for making the educated yet nevertheless intuitive guess, even with an abundance of data available (Bunch, 2007).

All research carries with it the imprimatur of its author. The idea that even the natural, quantitative sciences are neutral and free of all bias has been rejected since Kuhn's writing on paradigms (1970). Like all researchers, I came to this research with a self-identity and assumptions, and all interpretation are filtered through these lenses. The analytic process, in the actual doing, was not without challenges of subjectivity for me, and how I explored those challenges is described within this writing at the appropriate places. On the positive side, the GT

method itself highlighted problem points, which became reflexive opportunities to grapple with my own sense-making of the data, to request the opinions of others, and often to return to the sources to look for additional information to clarify a point of interpretation.

By way of example, after finishing the initial GT analysis, I became interested in putting my list of interview questions through the GT analytic process. This set of questions was developed as a simple interview tool. It was not meant to standardize the interviews or to be in any way exhaustive, since in GT, discoveries made during the data collection phase steer further questioning ("theoretical sampling," in GT parlance). The list was simply to safeguard against failure to ask something important, and to have a fall-back tool if I chanced across a bashful interviewee. During the analysis it occurred to me that, were I to have the opportunity, I would have designed that list differently. This recognition is not uncommon among novice researchers (Bunch, 2007). Further, the realization prompted an "aha!" moment. Whatever predictive biases I'd held at the onset of my research were likely embedded in the initial question set.

Putting my original question set through the GT exercise demonstrated a preexisting set of expectations or biases and demonstrated the differences between my prior expectations and my ultimate findings. For example, my interview questions anticipated stakeholder inclusion in the decision-making process but not elsewhere, whereas the data suggested extensive inclusiveness along every step of the value chain, from problem exploration to innovation to implementation. Second, interview questions anticipated conflict during and after decision-making, in the sense that I expected "trade-offs" and their ramifications. By contrast, neither organization believed it was making trade-offs, nor did they speak about their decisions in those terms. They framed partial solutions as "steps" along a path rather than a trade-off or

compromise, and they did not discontinue their search for improved solutions. These activities greatly dissipated the dissonance and internal competition I had anticipated.

Putting interview questions through GT analysis turned out to be a form of triangulation—not for the validity of the data so much as for the validity of the process and my approach as a researcher. Seeing the disparity between my original predictive biases and my analytical findings reassured me of two things. First, the GT method is rigorous enough to surmount bias, and second, that as a GT researcher, I had remained open to the data despite unavoidable entry bias.

Lastly, GT's goal is to generate theory. I was not that ambitious at the starting point. My goals were to see whether my findings shored up any of the vast body of prescriptive literature, or the opposite. Nevertheless, in the comparison of the two firms, theoretical constructs applicable to both situations did emerge. I consider this nothing short of amazing.

Case Study

Case study is appropriate for obtaining an in-depth understanding of phenomena, where the boundary between the phenomenon and its setting are not clearly delineated or where available theories seem inadequate (Yin, 1981). Case research can provide insight in situations where little is known about the phenomenon, or where, as here, current theories are inadequate or do not resolve outstanding questions about the phenomenon (Eisenhardt, 1989; Yin, 2003). The case study provides a strategy to understand the dynamics present within a single setting (Eisenhardt, 1989), by obtaining the viewpoint of multiple actors, and looking at interactions and relationships between actors and groups of actors. As such, case studies have utility for studying complex situations. Case studies can provide the type of detail and nuance not readily obtainable through other research methods, such as experimental and survey research (Tellis, 1997). This

study is a cross comparison study of two organizations. Following Yin, each case will be individually analyzed prior to the cross-case analysis (Yin, 2003). A detailed discussion of the implications of research method on use of the case study will be further outlined in the section on research methods.

Case Study in a Constructionist, Grounded Theory Application

Case studies enjoy a couple of decades of history in the field of organizational and management studies (Eisenhardt, 1989; Yin, 2003). The strongest tradition of case study in management literature is based in the work of Yin, whose ontological and epistemological approaches derive from positivist tradition. It is important to make note of the distinctions between Yin's positivist approach and the social constructionist approach undertaken in this study. Positivists believe that knowledge can be objectively and reliably identified. In the instance of the case study, the cases are selected with an eye toward (a) proving up theory— the case has all the components necessary to test theory; (b) toward extending theory—the case is rare, creating an opportunity to see if theory functions at the extremes; or (c) to develop theory—the case is one which is ripe for exploring an as-of-yet un-theorized or under-theorized phenomenon for the purpose of identifying patterns that might contribute to theory development (Yin, 2003). This is done through a rigorous—and therefore scientifically "dependable"—analytic process that may yield patterns useful for identifying similarities in other cases—yielding theory. The relevance of any case or group of cases is its relationship to the existing body of theoretical knowledge.

Constructionists, conversely, see reality as performative and relational, knowledge as a dynamic phenomenon, being continually constructed within the context of the studied phenomenon. Thus, while a phenomenon can be said to be real, it is also fluid and shifting. It is

being articulated and re-articulated through conversations, relationships, and actions. This fluidity means that researchers can hope to glean only a situated, fragmented, and partial knowledge (Hansen, 2011; Latour, 1987). That research can be no more than the snapshot across the time period studies is born out clearly here, where in both organizations significant change occurred after the research concluded. In one case a new CEO changed processes his predecessor felt critical to sustainability activities. At the other firm, certain sustainability functions handled locally were transferred to a headquarters office after the study period. How these changes ultimately impact the firms' sustainability activities is outside the realm of this study.

Meaning is assembled not by relationship to theory, but by following the action, piecing together from the data the relationships and contexts from which meaning takes shape. While the ultimate goal of a positivist case study is to develop generalizable theory, social constructionists understand that the situated and constructed nature of theory may have limited generalizability (Hansen, 2011). While patterns may emerge from constructionist research, they arise within context. The role and impact of contextual characterizations must be carefully threaded into any theoretical or conceptual discussions emerging from the work.

Evaluative criteria are also different. Yin (2003, cited in Latour, 1987) recommends evaluative criteria conceptually similar to the positivist criteria of natural sciences. According to Yin, conceptual validity requires precisely formulated analytical concepts that can be tested. Muddy, poorly defined concepts hinder building upon extant theory. Internal and external validity involve building a chain of logical causal reasoning that others can follow, and the ability to demonstrate the study's generalizability through replicability of the study in another similar situation, respectively. Reliability is also related to replicability. Another researcher,

looking at the same data and using the same analytic method, should draw the same conclusions (Latour, 1987).

By contrast, constructionists look for conceptual clarity, consistency, interest, and realism. Clarity of concept is the unambiguous identification of the object of the study, and that clarity makes it possible for researchers to relate one study to another. Consistency has been described by Hansen as "fixed points" related to the concept, around which observations about relationship and connections can be made (Latour, 1987). These points are the reoccurring events or characteristics that identify the phenomenon being studied as a phenomenon. Interest goes to data collection and can be defined as something similar to saturation. When a researcher has enough information to develop an understanding, she has something "interesting" she can translate or interpret into knowledge. Interest also addresses the reasons the phenomenon is of concern at all. A phenomenon is of concern when it exhibits a difference from what might be expected, and creates a tension of interest of some sort. Realism is an evaluative criterion that takes the place of replicability, which, from a constructionist, contextually situated perspective, would not be anticipated. Instead, an evaluative criterion might be, very simply, whether the phenomena are likely to happen. If they seem likely, given the context and explanation, then the descriptions are realistic (Latour, 1987).

Taking the constructionist view a step further, it should be noted that the research can be seen as its own phenomenon, its data illuminating not only the phenomenon under study, but also the researcher's subjective choice-making. Decisions about what case to take, what questions to ask, what data to collect, and what frame or lens through which to consider said data all shape the ultimate findings generated by the research effort. Despite the application of an exacting method like the grounded theory method, which permits the researcher to trace her thought

process and attending analytic decisions, and also enables her readers to draw their own conclusions about the researcher's decision process, it is impossible not to acknowledge the impact of researcher subjectivity on study outcomes. As the cases unfold within this research, tracing the impact of the researcher's thought trail is also part of the constructionist process.

Finally, this is a multiple case study. I follow Yin's procedure of treating individual within-case analysis first, followed by a cross-case comparison (Yin, 2003). Yin suggests the reason for this approach is to avoid contaminating my judgment. However, it must be noted that I chose to follow this prescription as a means of organizing my activities, and to focus my mind on the task at hand, rather than to avoid contamination. Both the grounded theory method and human nature would suggest it is virtually hopeless to avoid "contaminated judgment." I found it impossible to forget the data collected at each subject firm as I visited the next. Likewise, it was impossible to avoid thinking back to the teachings of the first case while doing analysis on the second. I could, however, use those moments as opportunities to be reflective and to intentionally become precise about differences and similarities within the individual contexts of the perceived links. And grounded theory method requires "constant comparative method," or using the knowledge gained during each interview and at each phase of the analysis to help the researcher determine next questions or analytical steps. In this sense, research is "constructed" much as noted above, and cannot remain neutral, as might be attempted in a positivist approach.

Unit of Analysis

The unit of analysis is the firm. Originally, based on the constructionist idea that understanding comes from "studying things in the making" (Latour, 1987b), I had intended to use individual decision opportunities as the unit of analysis. However, a statement made by Seventh Generation's sustainability officer, Gregor Barnum, during a Phase I interview led to a

decision to use the firm itself, using the decision opportunities as narrative examples. Barnum noted that his firm's individual decisions are made in the context of the firm's culture, and that one could not possibly understand the decisions without understanding their situated-ness within that culture (Researcher Interview, G. Barnum, September 30, 2008). Given his perspective, I wanted to be sure to capture the contextual aspects of these firms' realities.

Sampling Strategy

Selecting cases is not "sampling," per se (Tellis, 1997), but cases must be carefully selected to provide a rich example of the phenomenon of interest. Qualitative inquiry typically involves small, purposefully selected and information-rich samples that can shed a deep light into the phenomenon (Patton, 2002, Lincoln & Guba, 1985). The two cases selected for this study are examples of "extreme" case selection, because they are notable for their success in a world full of failures (Patton, 2002, pp. 230-231), and of "snowball" sampling, or identification of cases of interest through contacts who were aware of firm sustainability activities (Patton, 2002, p. 237).

Cases were solicited from among firms with a reputation for environmental stewardship. The solicitation list was developed with the assistance of individuals with "field expertise," including employees of non-profit organizations with an environmental mission such as The Nature Conservancy and Tucson Botanical Gardens, and through my network of lawyers and lobbyists whose practice includes environmental matters, whether representing firms, nonprofits, or agencies. A few firms with well-known reputations for environmental stewardship (e.g., Seventh Generation, InterfaceFLOR,) were solicited.

In some cases, firms were cold called (e.g., contacted directly via email and phone). In most cases, however, an introduction was made through a mutual contact, which was first

followed up by email, and then by phone if the response was positive. Two of my subject firms, Seventh Generation and Montemaggiore, responded positively to cold calls. I was aided by introductions to Cox Arizona and SCD.

While this method of case selection suffers somewhat from over-subjectivity, the alternative—selecting cases utilizing a barometric such as the Dow Jones Sustainability (based on "extra-financial criteria") or FTSE ET50 (environmental technology) indexes—was problematic in the following ways: (a) I am not qualified to evaluate the index selection criteria; and (b) the index lists change over time, and a company might not be on the list by the time the study is complete. Further, these indexes are built upon outward criteria such as financials, annual sustainability reporting, or green product lines (see, e.g., SustainableBusiness.com, 2013). Early research into the problems with transparency around reporting, and the difficulty of assessing the assorted criteria and motives of available indices also dissuaded me. I was interested in firms' "inner determination" to stay on the sustainability track. Hence, I chose a more subjective selection method.

Through these methods, four firms were initially selected. Ultimately, this research focuses solely on two of the original four, Seventh Generation, Inc., and Cox Arizona. Yin (2003) suggests that multiple-case studies hold distinct advantages in that they provide more evidence, and are therefore considered more robust than the single-case study. Four firms seemed like a manageable number, given my determination to spend approximately one week inside each firm observing, interviewing, and collecting additional data. However, after doing both phases of my field work, I jettisoned two of the firms, each for an entirely different reason. The first firm, SCD, has a green product line, and therefore a compelling reason to walk the walk. However, through data gathering I discovered that SCD, like most firms, found itself

unable to move much beyond surface sustainability measures. Its management perceived the economy to be its major barrier to progress. As will be seen, that finding is in contrast to Seventh Generation, also with a green product line, yet making its way, despite the economy, toward sustainability. I left the second firm, Montemaggiore, out of the study because its operation is so small as not to be valuable for cross-comparative analysis. However, the creativity of the family owners in the face of the small profit margin common to small business is worthy of illumination, and I hope to return to the subject in a later study.

As will become obvious, the two remaining firms share very little in common. They vary in size and industry and operational structure. The one thing that unites these firms is a genuine intention to evolve toward environmental sustainability, as first evidenced through self-selected response to a call for subject firms, sent to each solicited firm, excerpted here:

> The corporation I seek will have earnestly set for itself the intention to evolve toward environmental sustainability. It will consider sustainable development to be a high priority, in a class with its other high priorities. It will have faced an occasion (or two or twenty) when its sustainability goal has been in conflict with another legitimate corporate goal, such as resource management, profitability, shareholder perception, etc. This corporation will be willing to allow me to study the decision-making process around these conflicts. The possible benefits for the corporation are as follows: (1) if they are successful with sustainability decisions, they may be published as a role model for other corporations; (2) if they are less-than-successful, but earnest in their desire to be sustainable, they will have the opportunity to have a free consultant look at their internal decision-making process to spot obstacles that may be keeping them from the success they desire; (3) if they believe in the cause of sustainable development, they will have the unique opportunity to help other firms by contributing to sustainability research.

These two firms will be described more fully within each of the case study sections of this research.

Data Collection and Handling

For purposes of this research, fieldwork strategies followed Patton (2002). Information was gathered from a variety of perspectives, and was theory-driven in that many participant leads

were followed to garner deeper understanding. Cross-validation and triangulation were accomplished through the gathering of multiple sorts of internal and externally generated data, including observation, interview, unplanned interaction with individuals within the study facilities, invited participation in firm activities, and through widely assorted documentation. Participant views were captured word-for-word as closely as possible, through a combination of recording and the researcher's amazingly fast typing skills. Relationships were carefully developed and nurtured, while maintaining a strict reflective awareness of the distinction between fact and perspective, much of which was captured through researcher memos. Researcher bias was reflexively considered throughout the process, and documented where appropriate in the final analysis (Patton, 2002, pp. 262-331).

Data were generated in two phases. Phase I, an exploratory opportunity, was conducted by phone. Phase II, the main body of the research, was generated through field interviews, field observation, and review of internally generated documents and assorted externally generated material available on the internet. Some follow-up data collection was conducted by phone and email. Field observations were made onsite at each firm location. In the case of Seventh Generation, I traveled to the firm's Burlington, Vermont, headquarters, where interviews and field observations was held over five consecutive days during the course of one week. In the case of Cox Arizona, interviews and observations were held off and on, over the course of several weeks, as various interviewees could make time. I also spent three days with Cox's sustainability coordinator, Jason Giali, accompanying him to meetings and observing his work days. I spent approximately the same amount of time (the rough equivalent of five full work days) inside both Cox Arizona and Seventh Generation, and additional hours on the phone or in email exchanges before and after my time in the field with employees from both firms.

At both firms, "key informants" (Patton, 2002, p. 321) Gregor Barnum (Seventh Generation) and Jason Giali (Cox Arizona) assisted in identifying individuals, data, and observation opportunities, and other informants provided data leads, documentation and observation opportunities. Later, during the analytical stage, other key informants, especially Sue Holden at Seventh Generation and Susan Anable and Kristina Waters at Cox Arizona, were helpful in providing additional explanation to fill in data gaps and provide insider insight on researcher observation.

Interviews

Beginning with the interview process, the grounded theory method researcher shapes the flow of data as it unfolds, through an active listening process Charmaz calls intensive interviewing (Charmaz, 2006). Broad, open-ended interview questions are selected, and then further clarifying questions are asked, such as "Can you explain more about how…" and also questions designed to pull additional information on topics raised by the interviewee, such as "Can you share more details about…" and "You mentioned … Can you tell me about that too?" Interviews are part of an iterative process, whereby information gleaned during the last interviews may be used to partly shape future interviews in order to pursue information to flesh out ideas raised previously. The researcher chooses to dip back into the data, or even to seek out new data sources, when new ideas of interest are raised, or when knowledge gaps raise questions.

This process of allowing emerging information to partly guide the interview and data gathering process is called "theoretical sampling." This requires clarification, for GT does not begin with theory in the standard sense. Rather, the GT data sampling process is theory-driven. When interviewees or other data sources suggest that idea or activity has some contributory relationship to the phenomenon under study, or the researcher herself begins to detect suggestive

patterns, she adapts her data collection, whether through interview, observation, or documentation, to look for data to further confirm or disconfirm the emerging "theory" about the phenomenon. In other words, through contextual reflection and constant comparison between her reflections and the data, she develops data-based theoretical constructs that guide future data exploration. This sampling process provisionally ends when the data she collects no longer yields new gaps in understanding or questions. This point is called "saturation" (Charmaz, 2006).

Semi-structured in-depth interviews were the main data collection tool used in all firms. Employees sampled from a variety of departments, and in some cases, vendors, subcontractors, and consultants were interviewed. In all cases, contact persons within the firms both identified interviewees and were responsive to researcher requests for access to additional interviewees. In keeping with grounded theory method, interviews were driven partly from a list of open-ended questions, and partly theoretically driven based on interview information.

Interviewees were interviewed at their convenience. Interviews were open-ended, and interviewees were not dissuaded from talking about anything they wished to discuss. However, interviews were focused on gathering stories about the firm's sustainability projects, decision-making procedures that resulted in those projects, and about firm culture around sustainability (e.g. stories, training, "framing"). Interviewees were also asked about challenges or barriers to meeting sustainability objectives and how their firms approached these challenges. Interviewees were asked only one specific question about themselves: interviewees were all asked to share their personal definition of sustainability, in order to identify the range of reference frames existing within a single firm. In some instances, field interviews were followed up with a phone conversation for the purposes of clarification or to expand upon the available data.

A list of questions of interest to the researcher is shown in Appendix B. However, it must be emphasized that no interviewee was asked to answer the entire list of questions. The list served only as a reference for the researcher, rather than as a standardized set of interview questions. Because the interviews were semi-structured and theory-driven, many interviewees ventured well off the anticipated subject matter. Informal discussion opportunities occasionally arose during the course of observation. My notes from these conversations have also become part of the evidentiary record.

Field Observation

I also collected data as a field observer. Observational opportunities were varied and included such activities as observer participation in an all-day training session, accompaniment of potential vendors on a facilities tour, observation of internal cross-department meetings, departmental staff meetings, and so forth. As a general proposition, I was introduced at each of these events as a research student, attending the event as a quiet observer. Despite Patton's warning to remain unobtrusive to avoid generating anxiety (Patton, 2002, p. 291), my presence mostly was both noted and welcomed—possibly because studying their sustainability success was viewed as flattering. There were three or four occasions during which I was asked to participate in some way by the meeting leadership, or otherwise intentionally drawn into the conversation by the participants. Although I had some misgivings about participation, I realized that the invitations were a reflection of inclusivity or openness in the observed culture. Also, my semi-control of the interview process through the selection of interview questions and follow-up topics probably had more impact on the outcome of my data than did these few breaches of observer protocol. To the extent that my own choices in either setting seemed to matter to data generation, it is pointed out in the case discussions.

Document Review

Documents can be a rich source of information and history (Patton, 2002) and such was the case for the internal documents shared by the firms. These were collected from the field as they came up in discussion, or were obtained by my request or at employee suggestion. Examples included meeting minutes, work product, or memos. Other useful information included publicly distributed documents obtained from the Internet, such as annual reports, marketing materials, press releases, memos, meeting minutes, letters, and various other items. Follow-up interviews, with either the original interviewees or others, occasionally resulted from review of these documents.

As a side note, little use was made of firm-published collateral materials such as annual reports, marketing materials, and press releases. Although Yin (2003) urges researchers to bring in alternative sources of data as a means of triangulation, these documents were clearly geared to shape public opinion. They offered little insight into struggles experienced within the firm regarding sustainability challenges. Even Seventh Generation's annual "Corporate Consciousness Reports" (see, e.g., Annual Corporate Consciousness Report, 2011), which take transparency to new heights by detailing certain errors of judgment and other firm mistakes, were superficial treatments compared with the stories told by interviewees of these same incidents. That the interviews were more telling than the publications should notdetract from Seventh Generation's effort at transparency with its customer base. "Trust" is a large component of Seventh Generation's modus operandi.

CHAPTER 4

THE CASES: SEVENTH GENERATION AND COX ARIZONA

This chapter contains a deeper description of subject firms Seventh Generation and Cox Arizona. Traditionally, descriptions would be incorporated into the next chapter detailing the application of grounded theory to the data. Instead, descriptions have been pulled into this separate chapter to highlight the "maximum variation sampling technique" (Patton, 2003, pp. 234-235)—a selection of cases with extreme differences which make starkly obvious any common patterns that emerge from the data. These two firms exhibit such differences. Seventh Generation is an example of what has been called "clan culture," "full of shared values and common goals, an atmosphere of collectivity and mutual help, and an emphasis on empowerment and employee evolvement" (Yu & Wu, 2009, p. 28). By contrast, Cox Arizona is an example of an hierarchical culture: "The hierarchy culture has a clear organizational structure, standardized rules and procedures, strict control, and well defined responsibilities" (Yu & Wu, 2009, p. 28). Despite marked dissimilarities in organizational structure and firm culture, data analyses found in later chapters will show remarkable pattern commonalities. By describing these two firms side-by-side here, I hope to make these contrasts evident to the reader as a backdrop to the later analytical discussion.

About Seventh Generation

Rather than making a business case to support their values, Seventh Generation makes a "value case" to support its business. A business case, according to employees, always begins with the question, "Why is this the right thing to do?"

Seventh Generation is a privately held company based in Burlington, Vermont. Since 1989, Seventh Generation has been in the business of selling products manufactured with a concern for social justice, human health, and the environment. Its products are distributed

throughout the United States and also to a small but growing international market, through natural food stores, grocers, big box, and other retailers. Today, their products include recycled fiber paper products, safer, environmentally neutral—or in a very few cases, nearly so—cleaning and laundry products, baby toiletries, diapers and related products, feminine hygiene products, and trash bags made from partially recycled plastic (Sillito, 2013). At the time of this field study, as a result of a market model shift to a mass marketing approach— including sales of Seventh Generation products through Walmart—sales of Seventh Generation's products was on the upswing, tripling in just one year to $1.6 billion in 2009. The previous year, Seventh Generation's sales topped out at $150 million, up 20% from the previous year (Burkitt, 2010). Growth has slowed, now that the move into Walmart stores has been accomplished, but the company continues to trend slowly upward. The company had approximately 50 employees at the time of the interview, and has over 100 now.

Seventh Generation's sustainability activities occur all along their value chain, from sourcing to end use. Internally, Seventh Generation encourages employees to adopt a sustainable lifestyle through education programs and through grant and loan programs for home greening projects (Zouhali-Worrall, 2009). The company is a member of the Coalition for Environmentally Responsible Economies [CERES] and adheres to its ten principles for measuring its environmental and social performance. Those principles are protection of the biosphere, sustainable use of natural resources, reduction and disposal of wastes, energy conservation, risk reduction, safe products and services, environmental restoration, informing the public, management commitment, and audits and reports (CERES, 1989). Company activities that meet CERES principles are too numerous to list, but many of these will become evident during the narrative that follows.

Seventh Generation also developed and adopted its own set of principles, called "Global Imperatives," which are to be considered as a barometer at every decision occasion:

1. As a business we are committed to being educators and to encouraging those we educate to create with us a world of equity and justice, health and well-being.

2. To achieve this we must create a world of more conscious workers, citizens, and consumers.

3. We are committed to creating a world that is rich in value as contrasted to a world that is rich in artifacts.

4. We will work to create governance and social systems that increase the capacity for understanding differing perspectives and points of view.

5. We believe that our business and all businesses should engage in the personal development of everyone who works for them.

6. We are committed to approaching everything we do from a systems perspective, a perspective that allows us to see the larger whole, not a fragmented, compartmentalized world, not just what we want to see, our own point of view, our own reality, but a world that is endlessly interconnected, in which everything we do affects everything else.

7. We must ensure that, globally, natural resources are used and renewed at a rate that is always below their rate of depletion.

8. And lastly, we are committed to creating a business where all our products' raw materials, byproducts, and the processes by which they are made are not just sustainable but restorative, and enhance the potential of all of life's systems. (Document, Great Place to Work Cultural Audit, 2008)

Every employee hired has been queried about his values, looking for alignment with these Imperatives, because they will all be responsible for aligning their own work with these Imperatives at all times:

> When adding new employees to our community, we look for individuals who demonstrate a strong cultural alignment, as well as expertise and top talent in the skills and experience areas of the positions we are hiring to. It is critical that we hire candidates who align with our Global Imperatives and Company Essence. (Subject Record, Great Place to Work Cultural Audit, 2008, p. 4)

Seventh Generation has evolved substantially over the years. Its first founder, environmentalist Alan Newman, originally conceived of the business as an opportunity to promote care of the planet by selling an assortment of "green" products manufactured by others. In 1986, he launched a business called Niche Marketing, selling such products for other companies. Niche Marketing eventually evolved into Seventh Generation (Saltzman, 2007). Along the way, the company inherited a small mail order catalog of household energy conservation devices from one of its customers. Newman saw the catalog as a vehicle through which he could more broadly launch his ideas, and he began to seriously build the mail order business. Newman needed a capital infusion to grow the catalog to the next level. In 1989, Newman first collaborated with Jeffrey Hollender, a like-minded environmentalist and New Yorker with business and fundraising acumen, who helped him write a business plan and raise money. Hollender and Newman entered into a partnership arrangement, each taking a 23-percent interest in Seventh Generation. Hollender used the remainder interest to raise $850,000 to take the company forward. That was also about the time the company changed its name to "Seventh Generation" for its reference to an Iroquois saying, "In our every deliberation we must consider the impact on the next seven generations." Their business timing was fortuitous, pumped up by a growing social awareness of environmental issues. As important as Hollander was to the company's growth at that time, he lived in New York, and remained in the background (Holt, 1991). Newman, on the other hand, garnered national recognition as an environmental prophet, heralded in such publications as *People Magazine* and the *New York Times* (Reed & Mathison, 1990; Saltzman, 2007). Three factors—being first to market in a significant way with environmentally friendly products, Alan Newman's positive publicity, and a

public primed by events such as the launch of the first "Earth Day 1990"—catapulted Seventh Generation forward.

The two men set a revenue goal of $20 million annually, but a turn in the economy in the mid '90s slowed their growth and forced lay-offs. In response to the financial crisis, the two partners' business philosophies began to diverge. Newman advocated for an enlarged catalog business, while Hollender pushed to developing Seventh Generation into a full-fledged retail brand. In 1992, a burned-out Newman opted for a six-month sabbatical. During Newman's absence, Hollender consolidated board opinion for his vision and blocked Newman's return to Seventh Generation (Holt, 1991; Reed & Mathison, 1990; Saltzman, 2007). After Newman's exit, Hollender took Seventh Generation public to raise money to implement his plans, and he sold off the catalog business for funds to develop a branded line of environmentally neutral household products. In 1999, the company bought back outstanding shares, returning the company to a private position (Berle, 1993).

Between 1992 and late 2010, Hollender, a charismatic and visionary leader, led Seventh Generation to $150 million annual revenue, selling products through multiple retail outlets and in both domestic and overseas markets. When, in about 2008, Seventh Generation's board began talking about taking the leap to a $1 billion company, Hollender found himself without energy for a next big corporate push. With the board's backing, Hollender decided to step away from management and focus on advocacy, a move he believed was in keeping with Seventh Generation's mission to educate the planet. Hollender hired his own successor, former PepsiCo CEO Chuck Maniscalo, but within months, unable to fully pull himself back, he succumbed to founder's dilemma—too many cooks in the kitchen. Maniscalo tendered his resignation, which the board refused, putting Hollender on leave and eventually firing him, in hopes of convincing

Maniscalo to stay (Sacks, 2010). Maniscalo did not stay, however, and today the company is led by his replacement, former Burt's Bees CEO, John Replogle (Goldmark, 2011).

As will be seen further along, the Seventh Generation represented in this case study is very much Hollender's creation, rather than Newman's or Replogle's Seventh Generation. This is important because the path taken by Seventh Generation toward sustainability achievement was very much imagined and led by Hollender. However, Newman's role before Hollender's take-over, and Replogle's after Hollender's ousting are both contextually important to this research. Newman's role is important for setting the company's cultural tone. Newman was (and still is) something of a hippie, while Hollender, though very much a tree hugger, was nevertheless a "buttoned up" New Yorker. Hollender's choice to remain in New York in the early years left Newman free to shape the firm character in Burlington. Despite many changes Hollender eventually wrought, the company's focus on hiring like-minded individuals, and an insistence on transparency both within the firm and with customers and other stakeholders, began with Newman (Reed & Mathison, 1990), and remained part of Hollender's Seventh Generation.

Replogle's Seventh Generation is also important to this study, providing a unique opportunity for triangulation—to check the "reality" of my own conclusions in keeping with constructionist evaluative criteria (Latour, 1987). This triangulation is discussed here, rather than within the analysis because it utilizes information gathered after Hollender's exodus from Seventh Generation past the time of the data collection. A follow-up interview in 2013 with customer relations manager Sue Holden, a 15-year employee, allowed me to evaluate the credibility of certain conclusions I drew during my GT analysis. These conclusions differed significantly from opinions voiced by a strong handful of the interviewees in 2008. I trusted my analysis, but because the particular interviewees included a key consultant and senior managers

responsible in large part for shepherding Seventh Generation's sustainability efforts, the stark disagreement nevertheless unsettled me. These interviewees had independently identified practices they considered critical to Seventh Generation's sustainability achievements. Conversely, my analysis suggested that not all the stated practices contributed positively, and in some cases appeared to create added problems for the company. I wondered, could these managers' views on the necessity of certain practices have been what Bolman and Deal have called the "shared myth" (Bolman & Deal, 2011)? According to Bolman and Deal, shared myths provide a symbolic frame for meaning-making, a shared understanding of how the world works that creates clarity within an organization and reduces chaos. A shared myth may be believed and acted upon, whether or not it is true. At the time of my interviews, did the employees of Seventh Generation believe in and live by a shared myth that wasn't wholly accurate?

One example of a shared myth is the unusually democratic decision process employed by the company. The environmental movement has widely believed since Brundtland that democratic processes are necessary to sustainability outcomes (WCED, 1987). Hollender would have been aware of that, and in fact has advocated for the necessity of the democratic model (see, e.g., Hollender, 2011). Hollender built an unusually democratic input and decision process within Seventh Generation. He had an inner circle upon whom he leaned heavily, a senior managers' team with which he had a love-hate relationship, and other assorted ad hoc committees through which ideas were vetted. He was also known to encourage any employee to freely give input or feedback prior to a decision. It was not unheard of for Hollender to survey his entire staff about an issue, as he did when the company was contemplating the addition of a disinfectant to its line of cleaning products:

> Disinfectants can be quite controversial, whether there's a need for them or not. To address that, Jeffrey sent out a question to the entire company saying "Here's what we

> thinking of doing. Here are the varying opinions on that. I want your feedback." Everyone who wanted a voice had [an opportunity to express it]. (T. Fowler, Researcher Interview, November 17, 2008).

While Hollender or the senior management team ultimately made the final decisions, the high level of inclusivity demonstrated all the positives and negatives of the democratic process. The process did not prevent sustainability achievements, did help to keep everyone informed, and no doubt increased the number of perspectives considered, but it cost the company substantially in other ways. Important decisions were slow in coming, sometimes taking years. For example, at one point, the company decided it was time to reformulate their dishwasher gel and powder to make them biodegradable. The project was halted (temporarily—today's versions are indeed biodegradable) for cost concerns. However, in an embarrassing snafu that caught media attention, the word "biodegradable" was prematurely printed onto the packaging. Despite the company's strong values around customer trust and transparency, the company took months to wrestle with a decision about redoing the packaging:

> We got ahead of ourselves. It was noted, and we had to take it off. It was removed…,but only after many months of meetings, where people said, "We don't want to lose the boxes." Eventually Jeffrey said, "Just do it" (M. Wolf, Researcher Interview, November 14, 2008).

Though the trigger on decisions was ultimately pulled by Hollender or the senior management team, the decision path during Hollender's tenure was often arduous.

By contrast, Replogle ratcheted down the level of inclusivity and substituted intentional internal communications designed to keep people informed about issues being addressed. Under today's management, decision-making is made by smaller, often cross-departmental, teams without broader employee participation. Holden said the company is still respectful and willing to listen to individuals outside the decision-circle who wish to be heard, but the company no longer actively employs processes designed to seek out such input. The move, she said, greatly

freed managers' time for other work, and also facilitated faster decisions (S. Holden, Researcher Interview, April 28, 2013).

Returning to interview Holden in 2013 gave me a rare chance to triangulate the essentiality of these and other practices of Seventh Generation's past against the company's present experience. In the interim, the company also dropped certain language choices and organizational learning practices they'd been taught by key Hollender consultant Carol Sanford. But they also retained many such practices, including values-based hiring; what Hollender called "radical transparency" inside the company, and with customers and other constituents; innovative practices that can lead to new products and increased sustainability; a strong awareness of, and action-taking based on, social equity issues related to product manufacture and lifecycle; and programs supportive of employees and community. Granted, my follow-up conversation with Sue Holden represents the perspective of only one individual. Even so, as triangulation, the conversation permitted a reality check for my own conclusions. Because the company grows, thrives, and continues evolving sustainably despite the absence of certain practices I considered unessential to Seventh Generation's sustainability achievements, I rest more easily with my own conclusions.

About Cox Arizona

We decided it was appropriate for us to set goals and objectives for the area of conservation like we do with anything else we do in business. Everything we do, we ought to look at it and ask, is there a more environmentally friendly way to do that?

—James Kennedy, CEO, Cox Enterprises

Cox Arizona [Cox], headquartered in Phoenix, Arizona, is the largest provider of communication and broadband entertainment products to business and residential users in metropolitan Phoenix and Tucson. Cox's 18,500-mile hybrid fiber coaxial cable network throughout Phoenix and Southern Arizona provides homes and businesses with digital television,

high speed Internet, home networking, high-definition television, and digital telephone service over its own nationwide IP network.

Cox serves over three million "product services"—phone, data and video entertainment—to over one million homes and businesses in Arizona (Cox Media Group, 2009b, p. 6). In metro Phoenix, Cox serves approximately 2.5 million product subscribers. In Southern Arizona, Cox serves approximately 400,000 product subscribers. Cox revenues represent 15 percent of the total business revenues for its headquarters company, Cox Communications, Inc., which provides the same services to roughly 6.2 million customers across 15 states. Those figures puts Cox Communications among the top five largest communication services in the nation (2009a), along with Time-Warner Cable, Comcast, DirectTV, and Dish Network (Yao, 2012). Cox Communications is a wholly owned subsidiary of Cox Enterprises, Inc., headquartered in Atlanta, Georgia. Cox Enterprises is a communications, media, and automotive services company with revenues of more than $15 billion and 50,000 employees (Cox Media Group, 2009b).

Cox employs upwards of 3,000 Arizona residents and has a payroll of about $232 million, including benefits. As a consumer, Cox Arizona purchases more than $100 million in local and regional goods and services annually, and as a taxpayer, generates more than $90 million in taxes and fees to the local, regional, and state governments.

In 2007, Cox Enterprises CEO, James Kennedy, launched Cox Conserves, a sustainability initiative to be adopted by each Cox Enterprises subsidiary. The program encourages each of the company's subsidiaries to find ways to significantly reduce energy consumption, to conserve natural resources, and to adopt "eco-friendly" behaviors. Their larger conservation initiatives focus on alternative energy, community engagement, greening their

fleets, waste management, and water consumption. Cox Enterprises also launched a "Supplier Sustainability Initiative," which both seeks out suppliers who share the company's environmental and social sensibilities and assists suppliers who want to learn new sustainability behavior (Cox Media Group, 2012).

Although Cox Conserves was the initial impetus for Cox's sustainability program, each individual entity under the Cox Enterprises umbrella is given the freedom to identify its own plan of action based on its particular setting and situational needs. Cox Enterprise also facilitates opportunities for its subsidiaries to come together to share best sustainability practices.

Cox has a traditional, centralized management structure, although it also relies on strong regional cross-functional senior management teams for top-level decision-making. The Arizona senior management team asked the then-head of Cox's Asset Management Division, Farid Melki, to champion Cox's sustainability efforts. Melki, an architect, had already made a significant impact on Cox's bottom line by convincing management to treat every company resource as an asset, from property to vendor service contracts to people. When he began thinking about sustainability, he took a "business case approach," arguing that sustainability is about reduction—reduced waste production, reduced energy utilization, reduced fuel consumption, reduced water consumption, and so forth:

> I actually sold an idea to the senior team that has nothing to do with environmental [activity], a new business model. I presented the case that an asset to the company is an asset, whether a building a vehicle, converter, product, employee. All those are assets. And right now those assets have a life cycle, and the life cycle is a common denominator—acquisition, sustainability or extending by maintenance, and then disposition or reclamation of each asset. Then I shared with them, if somebody does not see big picture for all those assets, we are very much reactive than pro-active, acting on a service level rather than core partners. When you combine all those assets, it's significant money to company. We need to position the asset in the business model. So therefore I sold that idea to the senior team. (Researcher Interview, F. Melki, September 7, 2008)

While Melki sold his proposition as good business, what actually made it a successful and pervasive sustainability proposition was the authority of his position and the broad sweep of his responsibilities. Melki was uniquely positioned to integrate sustainability planning across the entire Cox value chain:

> This is actually smarter—looking at every process we have, and every operation, every aspect of it, evaluating it to incorporate sustainability consciousness into that process...Once you know it, you become it. It's not a choice. From a business aspect, working with a sustainable understanding, incorporating it into the corporate process, into the acquisition of an asset or anything else, is more effective, cheaper, more environmentally correct, improves public relations, and on and on and on….It is an educational process, and as we find "oh here's a better way of doing it," and we take the next step forward. (Researcher Interview, F. Melki, May 2008)

While looking at "every operation, every aspect of it" sounds like a formidable job for any firm, let alone one the size of Cox, Melki's process has enabled the company to make significant and consistent progress over the short years since Cox Conserves was launched. Cox handled approximately 700 contracts through a centralized procurement and contract management team. All sourcing, purchasing, and vendor contracts, while originating in home departments, were funneled through the centralized team for investigation. Contracts manager Jason Giali had close working relationships with the originating departments to ensure that the purchase process resulted in the desired value and utility. Giali and his team added a sustainability requirement to the Cox contracting system. The process was surprisingly simple. Cox integrated a sustainability criterion into their standard sourcing rating sheet, along with other necessary criteria, like price point, maintenance and storage requirements, service, longevity, and so forth. Each of the criteria is weighted between one and 30 percent. The decision about how to weigh sustainability criteria depends on multiple factors.

> Jason showed me his point tally sheet for the landscaping vendors we'll hear presenting tomorrow. He weights criteria categories before he looks at the bids. In this case, he weighted "green/community" at 15 percent. The only higher criterion was "service

> agreement contract," at 30 percent. Everything else weighted between one percent and five percent. I asked whether all contracts are 15 percent green/community. He said between five and 15 percent. When I asked how he determined the percentage, he said the degree to which he relies upon the vendor to get to his sustainability goal determines it. (Researcher's Post-Interview Memo, July 23, 2008)

The sustainability criterion gets lower weight when the Cox procurement agent or the originating department has done their own sustainability research, is confident about what they need, and can specify it in the bid request. In that case, Cox will simply be looking at the vendor for its own internal sustainability awareness and activities. Alternatively, if Cox needs assistance assessing the environmental and social factors inherent in a particular asset, then the weighting goes up. They will be looking for a vendor with sustainability expertise in their industry, who can help Cox design the most sustainable plan. In each case, the Asset Management team works closely with the originating department to ensure that the utility value of the asset is maintained through other criteria, while sustainability functionality is also enhanced (Researcher Interview, J. Giali, September 7, 2008).

In the year and a half between the time James Kennedy launched Cox Conserves and the interviews undertaken for this research, the Assets Management team[7] used this system to identify, research, and implement an unusually large number of sustainability projects, ranging from contracts for services like landscaping and cleaning, to filling fleet tires with nitrogen to reduce wear and increase tire longevity, to changing out ice makers throughout the Cox facilities for more energy efficient equipment, to office supplies, and more. Each time a contract came up for renewal or rebid, Cox built in a sustainability requirement. This system worked so well that in 2010, Cox Communications in Atlanta invited Jason Giali to transfer to headquarters and

[7] The Asset Management Division has been renamed the Business Development Division to reflect the broader course set by Melki and the senior management team for the department, but will be referred to in this document as the Asset Management Division, as it was called during the research period.

institutionalize the Arizona system across the company nationally (Researcher Interview, K. Waters, August 6, 2008).

While Melki has undertaken some big ticket sustainability projects, such as a major headquarters solar installation and the build-out of a fully sustainable cafeteria—something, by the way, that could not be sold as "business case" because it cost more than it generated, his biggest impact by far at the time of my research was the implementation of the sourcing system that makes sustainability considerations a criterion with the same relative weighting as cost and other variables. By adding sustainability to the list of necessary criteria to move forward with any corporate contract, whether for services like janitorial or landscaping, or purchases like office supplies, equipment, or fuel, Cox ensures that, over time, the company will comprehensively research every contracted item or service for sustainability concerns. Over time, sustainability management will reach each and every asset Cox negotiates (Researcher Interview, J. Giali, September 7, 2008). Today, Cox signs or renews approximately 10 contracts a month for indirect services, and approximately 50 contracts a month for direct services. As a result of embedding sustainability criteria within the procurement process, sustainability gets revisited around 700 times a year, across all departments and all along the value chain.

In two short years, under Melki's and Giali's lead, Cox implemented dozens of projects. Some of these were not procurement projects, such as the initiation of a cross-function managers' project team, "TWIG," to identify recycling opportunities across the organization; elevating Earth Day at Cox to an important firm celebration, launched a telecommuting program to save fuel, reduce pollution, and give employees more time at home, building out the eco-cafeteria , and taking on the solar panel installation. But most of the work has happened through the contracting. Just a few examples include negotiating a substantial reduction in the price of

better quality recycled copy paper by bringing in value chain partners to leverage a larger purchase; developing a smaller, more efficient repair vehicle; replacing air in tires with longer-lasting nitrogen, replacing company ice machines with more efficient brands, adding energy reduction tools to electronics, contracting with janitorial, landscaping and others to incorporate greener products and processes into their service contracts, adding GPS to firm trucks to enable more eco-efficient routing and so forth.

As with Seventh Generation, I had an opportunity in 2013 to check back to get a few last questions answered and to see how Cox's sustainability program fared over the past several years. Farid Melki had taken a job at another organization. Jason Giali had been promoted to Atlanta to help translate the Cox Arizona system across the country and then, tragically, passed away. Giali's job in Arizona had been filled by Kristina Waters, who had assisted Giali at the inception of the Arizona roll-out of Cox Conserves. I was able to follow up with Waters and other employees. In the interim, Cox had expanded their sustainability efforts. It launched a national recycling program and also centralized its sourcing and procurement process to Atlanta to provide enhanced incentives for vendor sustainability collaboration. They initiated an "Investment Recovery" life cycle program to identify new uses for "waste." To date, the program diverts over three million pounds of "waste" from landfills annually to reuse and monetized recycling channels; reduces greenhouse gases equivalent to taking 12,500 cars off the road; and results in energy savings adequate to power 17,500 households for a year, and water emission savings of over 1,700 metric tons.

CHAPTER 5

APPLICATION OF GROUNDED THEORY METHOD TO THE DATA

Chapter 3 laid out the reasons to use grounded theory method for this study. This chapter lays out the application of the method to the study data. Grounded theory method is a deeply iterative method. Its legitimacy relies heavily on a process called "constant comparison," which involves returning repeatedly to review the data throughout the analysis, to check whether concepts emerging through the analysis continue to hold as additional information is reviewed. Through this process, the researcher forms a theoretical understanding of the subject phenomenon by discovering recurring themes in the data, and through reflection and inductive and abductive reasoning, ferrets out the elements contributing to the occurrence of the phenomenon. A framework is then developed using these elements, called "core constructs," that explains how the elements relate to form the resulting phenomenon—in other words, why.

Developed by Barney Glaser and Anselm Strauss in the 1960s (Glaser & Strauss, 1967), the grounded theory method has been remodeled over time by other authors. I adopted Auerbach and Silverstein's (2003) model, for its plain English instructions without a plethora of extraneous explanatory matter. Unfortunately, Auerbach and Silverstein did not fully address all questions that arose during the analysis. At those times, procedures from other authors were adopted. The remainder of this section outlines the specific steps in the grounded theory method and explains method choices made in this research.

Coding the Data

For part of the coding work, both coding software and manual coding were employed. The software application, SaturateApp, is freeware developed by Jonathan Sillito of the University of Calgary (Sillito, 2013).

Step One: Restate the Research Concern

The research concern is stated in the form of "burning questions" (Patton, 2003) and are to be used for focusing attention while reviewing the data, rather than as hypothesis-like questions to be tested. Research concerns present "fixed points" (Latour, 1987) against which to assess the relevance of bits of raw text. These are my burning questions:

- How do these organizations identify and choose sustainability activities?
- What problem-solving techniques are employed when sustainability values conflict with other legitimate organizational values?
- How do these organizations support outside-the-box thinking to create sustainability opportunities or to innovate past barriers?
- What structural, cultural, or political factors enable sustainability implementation and problem-solving?
- What tools are brought to bear on the known sustainability barriers; e.g., issues involving complexity, uncertainty, perpetuity, and systems

Step Two: Sort the Raw Text

The text is reviewed line by line, highlighting relevant ideas (see Figure 2).

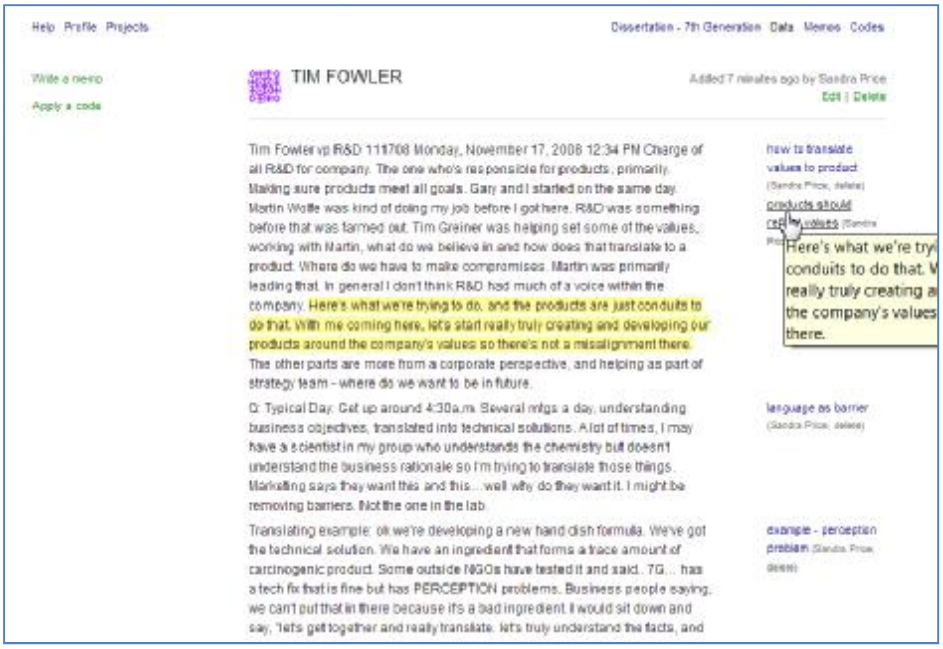

Figure 2. Example of Coding Step Two, SaturateApp.com coding freeware.

This step is called open or substantive coding by some GT users. Going through the raw data resulted in the identification of a very large number of relevant ideas. In GT, what constitutes "relevant" is what seems to be so to the researcher (Auerbach & Silverstein, 2003). The process is not "anything goes." The researcher, by the time she arrives at this coding step, has developed and will be aided in her decision-making by "theoretical sensitivity":

> Theoretical sensitivity refers to a personal quality of the researcher. It indicates an awareness of the subtleties of meaning of data. One can come to the research situation with varying degrees of sensitivity depending upon previous reading and experience with or relevant to an area. It can also be developed further during the research process. Theoretical sensitivity refers to the attribute of having insight, the ability to give meaning to data, the capacity to understand, and capability to separate the pertinent from that which isn't. (Strauss & Corbin, 1998, pp. 41-42)

Familiarity with the literature, personal and professional experience, time spent inside the subject firms, and a growing comfort with the data gave me both confidence and a knowledge base for open-coding my text.

Open coding Seventh Generation data produced more than 900 relevant bits of raw data. Open coding Cox Arizona data produced over 300 bits of raw data. Seventh Generation yielded many more bits of data than Cox Arizona because I utilized less external documentation for Cox, and because I conducted nearly twice as many interviews at Seventh Generation. Everyone within Seventh Generation was involved in sustainability efforts, which was not the case at Cox Arizona. Additionally, Seventh Generation's modus operandi for achieving sustainability was more complicated than that of Cox, and generated more complex sets of narratives. Although Auerbach and Silverstein's Step Two is intended to "make the text more manageable" (2003, p. 5), 900 data fragments for Seventh Generation did not feel "manageable." To get a handle on the range of topics present in the data, a manual sort was conducted. Labels were created for each topic, and related fragments were literally "bagged" into sandwich bags. The contents of one such baggie are available in Appendix C. Thirty-eight topics emerged—a more manageable universe. This extra step also provided an opportunity to refamiliarize myself with the data.

Step Three: Identify Repeating Ideas

As part of the open coding process, relevant fragments of text are grouped into sets of repeating ideas. Ideas are considered repeating when they either use the same or similar words or express the same or similar ideas (Auerbach & Silverstein, 2003). All relevant ideas were grouped into categories with other, similar ideas. During this step, rigor was maintained through "constant comparison." Constant comparison is a process of repeatedly checking the data to determine whether the choices the researcher makes are substantiated (Charmaz, 2006).

For Seventh Generation, the 900 plus ideas fell into about 30 repeating ideas. Through constant comparison, these were then consolidated into 21 ideas (see Table 1). For Cox Arizona,

the 300 plus ideas also fell into about 30 repeating ideas, eventually consolidated to 17 (see Table 2).

Table 1

Seventh Generation Repeating Ideas

Repeating Idea
We seek customer trust, and trust requires transparency and authority
A two-way dialogue with customers helps us understand how products impact families & the environment
A two-way dialogue with customers is necessary to build brand loyalty and secure our profitability
Tools put Seventh Generation employees on the same page for meaning-making and problem-solving
We use performance indices but we don't have them worked out for everything
The company as a reflection of Jeffrey Hollender, and Hollender made sustainability an imperative
The opportunity to be a change leader is super exciting and motivating
Align internal operations to mission and values
Align external relations to mission and values
7G efforts to create a workplace reflective of its values
Building a diverse, inclusive, learning organization
Language obfuscates but shared frames facilitate
Elevating consciousness – educating the world
Stories of inadequate human, information, materials, technological resources
Stories of doing the right thing
Stories when no good choice is available
Stories of the wrestling process
We see the world as a dynamic, living systems
Building the business case
Building brand and brand loyalty
Innovation

Table 2

Cox Arizona Repeating Ideas

Repeating Idea
COX Enterprises leads – it's hardwired into the founders family – but they give us leeway
Leading in moral culture that sees sustainability as an extension of that morality
We control risk by keeping project corporate control inside the asset management department
Leading the community through media, classes, spots, to educate, train, create change
Changing a complex system requires attention to multiple impact considerations and careful research to find value-added, long-term solutions
Make it better, take it further, think outside the box – ideas can come from anywhere
We leverage our vendors and other partners, one way or the other. We also leverage our own assets, goodwill, influence and size
Not all fixes are within immediate reach, but "I consciously think of hiccups as a an opportunity to tap"
Sustainability done right will add value on the business side, as well as the environment
To ensure successful models, we bring in all effected stakeholders, experts, etc, before presenting the case to business leadership
By integrating sustainability into one core business process, Cox ensures sustainability will be addressed methodically and habitually, across all firm activities and at values commensurate with other critical business imperatives

Step Four: Identify Common Themes

The sets of repeating ideas were reorganized into groups of ideas that implicitly or explicitly shared an idea (a theme), and the themes were named (Auerbach & Silverstein, 2003). These themes are conceptual in nature, rather than descriptive, moving the research from the descriptive coding stage to a more theoretical thinking process.

The 21 Seventh Generation ideas were consolidated into ten themes (see Table 3). The Cox Arizona 17 repeating ideas were consolidated into three themes (see Table 4). As part of the iterative process, repeating ideas were regrouped for a better fit with the emerging themes.

Table 3

Conceptual Themes Connecting Repeating Ideas for Seventh Generation

Themes	Repeating Ideas
Customer communication preserves trust and secures loyalty	• We seek customer trust, and trust requires transparency and integration • A two-way dialogue with customers is necessary to build brand loyalty and secure our profitability
Learning tools for problem solving	• Tools put 7G employees on the same page for meaning-making and problem-solving
Jeffrey leads us and we lead the industry	• The company as a reflection of Jeffrey Hollander's values, and Hollander made sustainability an imperative • The opportunity to be a change leader is super exciting and motivating
Aligning ourselves and our partners to the mission	• Align internal operations to mission and values • Align external operations to mission and values
Supportive workplace culture	• 7G efforts to create a workplace reflective of its values • Building a diverse, inclusive, learning organization
Shared language and frames	• Language obfuscates but shared frames facilitate
We are educating the world	• Elevating consciousness across the value chain and educating the world
We wrestle with obstacles – we don't give in	• Stories of inadequate human, information, , materials, technological resources • Stories of doing the right thing • Stories when no good choice is available • Stories of the wrestling process
We apply a systems perspective	• We see the world as a dynamic, living system
Everything must have a business case	• Building the business case • Building brand and brand loyalty • Innovate!

Table 4

Conceptual Themes Connecting Repeating Ideas for Cox Arizona

Themes	Repeating Ideas
Top-down leadership required, enabled and supported sustainability change	• COX Enterprises leads – it's hardwired into the founders family – but they give us leeway • Leading in moral culture that sees sustainability as an extension of that morality • We control risk by keeping project corporate control inside the asset management department • Leading the community through media, classes, spots, to educate, train, create change
Managing for complexity requires careful research, collaboration, innovation plus cautious implementation	• Changing a complex system requires attention to multiple impact considerations and careful research to find value-added, long-term solutions • Make it better, take it further, think outside the box – ideas can come from anywhere • We leverage our vendors and other partners, one way or the other. We also leverage our own assets, goodwill, influence and size • Not all fixes are within immediate reach, but "I consciously think of hiccups as a an opportunity to tap"
Business case plus inclusion plus key core processes lead to rapid and comprehensive sustainability achievement	• Sustainability done right will add value on the business side, as well as the environment • To ensure successful models, we bring in all effected stakeholders, experts, etc, before presenting the case to business leadership • By integrating sustainability into one core business process, Cox ensures sustainability will be addressed methodically and habitually, across all firm activities and at values commensurate with other critical business imperatives

Step Five: Develop Theoretical Constructs

During Step five, themes are reviewed for explanatory power. Causal connections or contributory relationships between themes are identified and articulated as generalized abstract ideas rather than being tied to the specific case (Auerbach & Silverstein, 2003). Using this selective coding (Strauss & Corbin, 1998), the researcher attempts to reconcile all the

relationships between the various themes, relating them to the research concern. The process ideally yields a concrete organizing framework for the data (Auerbach & Silverstein, 2003). In my case, surprises in my conclusions sent me back to do a third literature review in some additional areas. Following is the breakdown of Step Five results for the two firms.

During Step Five, I deviated from Auerbach and Silverstein's (2003) coding method to add an extra analytic step, developing "core concepts." Glaser, Strauss and Corbin ask the researcher to work through the theoretical coding process until a core concept emerges, a concept to which all the remaining relevant concepts relate. Ideally, a primary concept will rise to the surface like cream. Otherwise, the researcher must make a cognitive choice about which conceptualization is most critical and elevate it. Occasionally, more than one core concept will emerge from the data (Urquhart, 2012). I adopted the use of cores as a lens for identifying which constructs were most important and to explore whether one or more constructs were necessary to explain the remaining constructs.

Seventh Generation. An initial nine relational themes emerged from the Step Five process:

1. Leadership makes sustainability an imperative.

2. A shared definition of sustainability doesn't matter. A commitment to figuring and doing the right thing does.

3. Everyone drinks the Kool Aid.

4. Values are at the center of everything—they are core, primary, non-negotiable, prerequisite and requisite.

5. You have to show a business case.

6. We take a systems perspective.

7. Make time, space and tools available to wrestle with the issues that come up.

8. Commitment to integrity (authenticity) ensures our focus on mission.

9. A learning culture improves our approach.

Ultimately, all of these were subsumable under three umbrella or core concepts. The first, "Embedding a sustainability imperative," incorporated themes related to leadership: the idea that "Everybody drinks the Kool Aid," and concepts related to values, integrity and doing the right thing. The second core, "Enabling learning to dismantle barriers," incorporated themes of learning culture and systems perspective. Certain relational themes were broken up and parceled into this second core—shared frames, for example,—while other data fit more squarely within the third core. All themes pertaining to structures and processes created by Seventh Generation to enable and support learning were grouped under the heading, "Making time, space, and tools available to wrestle with issues that come up."

Cox Arizona. An initial seven relational themes emerged from the Step Five process:

1. Mandating sustainability from the top, leading with local planning and implementation

2. Embedding a sustainability criterion reaching across the value chain through procurement processes

3. Systems thinking

4. Bringing impacted parties in to preserve utility values

5. Enable learning for problem-solving

6. Barriers are temporary

7. Business and environmental value-added sustainability done right will add value on the business side too.

Ultimately, all of these were also subsumable under core concepts surprisingly similar to those at Seventh Generation, despite the vast differences in the power structures and corporate cultures of the two firms. "Embedding a sustainability criterion" incorporated the leadership mandate and the procurement process. "Learn through barriers" incorporated systems thinking, bringing impacted parties to the process, and considering barriers temporary. The last one, "Utilizing existing management culture, tools and protocols for supporting learning" incorporated the Asset Manager's leveraging all the tools and processes available to all Cox managers to overcome sustainability barriers and resistance.

Step Six: Develop a Theoretical Narrative or Proposition

> A theoretical narrative describes the process that the research participants reported in terms of your theoretical constructs. It uses your theoretical constructs to organize people's subjective experience into a coherent story. It employs people's own language to make their story vivid and real. (Auerbach & Silverstein, 2003, p. 73)

The narrative is abstracted enough to be useful in other similar cases or for further research. The results of these steps can be found in the next two chapters. Chapter 6 illuminates the core idea of a embedding sustainability "mandate" (Seventh Generation) or "criterion" (Cox Arizona). Chapter 7 looks at the two remaining, related cores. The primary core is that organizations use learning processes to dismantle barriers. A related and necessary core is the availability of "empowerment tools" (Kanter, 1998) such as time, money, and resources to support learning processes. The chapter also discusses the decision to extricate the construct of empowerment tools from the primary learning core.

Coding Issues and Choices

Red Herrings in the Data

Themes emerged from the interview data that did not survive analysis despite strong interviewee advocacy for their relevance to sustainability. These themes were ultimately deemed

to be "red herring" fallacies—arguments in which the conclusion is unrelated to the premise. Red herrings included the need for a democratic process to solve sustainability problems (Seventh Generation), the necessity of creating a "business case" for sustainability (both firms),[8] and a business case sub-theme, brand loyalty (Seventh Generation). These themes were jettisoned during Step Five, despite the fact that Auerbach and Silverstein (2003) state that tossing orphan themes during Step Five is unacceptable:

> You have already decided [during Step Three and Four] that all of the repeating ideas and themes are important. Thus, you must continue to organize your themes until you develop theoretical constructs that include all of them (Auerbach & Silverstein, 2003, p. 69).

Auerbach and Silverstein's directive on orphans assumes the researcher will have identified and grouped only those ideas relevant to the studied phenomenon during Step Three, overlooking other possibilities. A researcher may identify and group ideas either because her subjects believe they are relevant to the studied phenomenon—even if this later turns out to be a fallacy—or because the ideas do have relevance for the organization but not to the specific phenomenon under study. It may not be until the researcher frames explanatory concepts that certain assertions of the interviewees become suspect. Much the way a researcher's own hidden bias may surface and surprise her as unanticipated patterns and relationships begin to emerge, the mythological character of subject belief may only be recognizable as analysis yields insight adequate to undercut the myth. Jettisoning a theme holding no explanatory power as a result of reflecting on data in light of emerging conceptual relationships is supported by Eisenhardt (1989) as an important part of validating the integrity of the research:

[8] It is interesting to note that "theoretical sensitivity" (Patton, 2003) may help the researcher recognize relevancy, but it may also throw her off track. As an environmental policy lawyer and an academic working in the discipline, I was exposed to "business case" literature and was biased right along with Cox and Seventh Generation employees regarding its relevance.

> When a relationship is supported, the qualitative data often provide a good understanding of the dynamics underlying the relationship, that is, the "why" of what is happening. This is crucial to the establishment of internal validity. Just as in hypothesis-testing research an apparent relationship may simply be a spurious correlation or may reflect the impact of some third variable on each of the other two. Therefore, it is important to discover the underlying theoretical reasons for why the relationship exists. This helps to establish the internal validity of the findings. (Eisenhardt, 1989, p. 542)

Democratic process. As detailed in Chapter 4, Seventh Generation employees held a shared myth that a fully inclusive, democratic process was necessary for sustainability. Glaser, in writing on qualitative data analysis [QDA], reminds the researcher that GT is not looking for the voice of the subjects, but rather, concepts carefully generated from data:

> [M]any concepts are "in vivo" concepts: that is, they come from the words of the participants in the substantive area. Let me be clear: standard QDA emphasizes getting the "voice" of the participants. In vivo concepts are not such "voice," in the sense that what phenomenon they attribute meaning to with a concept is only taken as a GT concept, not taken as description. The participants usually just give impressionary concepts based on one incident or even a groundless idea. They do not carefully generate their concepts from data with the GT methodology and try to fit many names to an established pattern. They are not establishing a parsimonious theory. They may have many concepts that do not fit or work. GT discovers which in vivo concepts do fit, work and are relevant. (Glaser, 2008, p. 2)

Business case and brand loyalty. Employees at both Seventh Generation and Cox repeatedly argued the necessity of a business case for sustainable development. At Seventh Generation, ideas about brand loyalty and about making a business case were important to the firm's competitive edge, but they did not directly bear upon sustainability achievement. Companies operating in a highly competitive industry such as the cleaning products industry are not likely to make it—whether or not sustainable—unless they have some particular competitive advantage (Porter, 2008). Brand loyalty was very relevant to Jeffrey Hollander's business plan for Seventh Generation, but it was not directly relevant to achieving sustainability. Similarly, Cox's sustainability manager used a business case justification for his sustainability program, based on the idea that reducing materials use would bring cost benefits, and both he and his staff

repeatedly mentioned the need to present a business case for new sustainability projects. However, in reality, not all of Cox's sustainability projects were reductionist in nature. Contemporary literature suggests the business case has not been adequate to get a business to sustainability, if for no other reason than it is not always possible to make a business case for each sustainability activity. Any particular action may have only the most tenuous and indirect connection to a business case. Some sustainability activities will easily provide a business case. Some will not. "Making a business case" is a business concept with important business purpose, but it is not directly relevant to achieving sustainability. This distinction will be made more fully in Chapter 8.

CHAPTER 6

CORE CONCEPT: EMBEDDED SUSTAINABILITY

"Embedded sustainability," a term gaining traction in the literature on sustainability behavior, is another way of saying that sustainable development practices need to be integrated into core business systems and across the entire value chain. The specific "embedding" mechanisms utilized by Seventh Generation and Cox Arizona to institutionalize the sustainability criterion across their value chains were extremely dissimilar. This is significant because it implies that embedding sustainability can be tailored to fit firm culture and practice. Also, one firm's embedding practices involved the extensive cultural saturation that contemporary scholars are advising, while the other firm's practice was narrowly limited to a single function within its operations. The practices of the second firm suggest the exciting possibility that successful sustainability behavior across a firm's value chain may be more easily achievable than previously thought.

Several types of "embeddedness" are recognized in the literature. Cognitive embeddedness refers to the degree to which common mental models or shared vision among actors impact their economic activities. Structural embeddedness refers to the flow of assets, information, and status among collaborators and competitors. Cultural embeddedness refers to historical perspectives—collective norms and beliefs that inform behavior. Political embeddedness refers to the power influencers upon economic and other activities. Spatial or geographical and temporal embeddedness are physical factors that influence decision making. Relational embeddedness looks at the quality of the relationships between social actors. The more embedded an activity, the less flexibility actors have to shift practices (Baas & Huisingh, 2008). Also, it is assumed that all dimensions of embeddedness must be treated as functioning

simultaneously, although not necessarily with the identical influence (Boons & Howard-Grenville, 2009).

Embeddedness activities do not occur in a vacuum. They are embedded within networks of relationships, information, and resources. The level of embeddedness will to some degree determine the constraints and opportunities actors experience in decision-making about their activities. The interplay must be explored in each change situation (Boons & Howard-Grenville, 2009). In the context of sustainable development, the embeddedness of current failed practices works against change and innovation. Similarly, getting sustainability to "stick" will require embedding sustainability practices across these dimensions (Baas & Huisingh, 2008).

Based on the Baas and Huisingh (2008) protypes, Seventh Generation cultivated cultural embeddedness of its sustainability imperative by its hiring and performance requirements, and it enabled cognitive embeddedness through training programs. Cox, on the other hand, relied on structural embeddedness through its procurement criterion, and relational embeddedness, actuated through relationship-building with impacted personnel and external vendors.

Seventh Generation's Embedded Sustainability Imperative

Jeffrey Hollender, Seventh Generation's "chief protagonist," personally embodied a sustainability ethic, and as a transformational leader (more on this below), inspired the same in his staff. The sustainability imperative began with Hollender. Hollender hired people who shared his values, and because he is charismatic and inspiring, Jeffrey served up the Kool Aid, so to speak. Jeffrey was motivational and inspirational, and his employees found his passion contagious. Captured in the construct, "Everybody drinks the Kool Aid," was the adoption by the whole Seventh Generation crew of the organizational vision. The employees saw their labor as world-changing work, and as such, intensely and personally meaningful:

> I was attracted to Seventh Generation because I met Jeffrey at conference through Peter Senge—a learning thing. I was interested because we're at an opportunistic place in history. Seventh Generation has an opportunity to stay core to its values or go astray and become mainstream and loosen some of their ideals around the foundation of company. I felt I could be positive contributor to making sure they stick to values. (Researcher Interview, R. Doyle, November 14, 2008)
>
> My wish has always been to be involved in a social cause that I can be excited about and where I can make a difference. (Document, Employee Wish List, 2001 Retreat)

Even those who came with a set of values only vaguely similar to Hollender's became passionate after they engaged in the work alongside other passionate, smart, cause-motivated people:

> This is probably the smartest group of people I've ever met in my life. There's no question this amazes you. The hiring, you're attracted to that. I interviewed dozens of places and wondered why there weren't more qualified people. Of course there are, but they weren't attracted to those other things [the way they're attracted to this cause]. It blows you away—you can't believe it, and then you want to be the best you can be. It gives the company resilience. I don't think a person is going to want to leave the company in that situation. (Researcher Interview, C. Middings, November 14, 2008)

Another theme under "Everybody Drinks the Kool Aid" is expressed by the quote, "The opportunity to be a change leader is super exciting and motivating" (Researcher Interview, C. Middings, November 14, 2008). The cause-oriented activism is reminiscent of followership in the context of "transformational leadership." Transformational leadership has been described by Bass as leadership that occurs when:

> [L]eaders broaden and elevate the interests of their employees, when they generate awareness and acceptance of the purposes and mission of the group, and when they stir their employees to look beyond their own self-interest for the good of the group.... Attaining charisma in the eyes of one's employees is central to succeeding as a transformational leader. Charismatic leaders have great power and influence. Employees want to identify with them, and they have a high degree of trust and confidence in them. Charismatic leaders inspire and excite their employees with the idea that they may be able to accomplish great things with extra effort. (Bass, 1991, p. 21)

But charisma is just the beginning. According to other leadership writers, the strong moral nature of the transformational leader's own values, and the authenticity with which the leader

lives and displays those values inspires followers to live up to their own better moral selves. In the words of Price, quoting Burns:

> "The leader's fundamental act is to induce people to be aware or conscious of what they feel—to feel their true needs so strongly, to define their values so meaningfully, that they can be moved to purposeful action" (Burns, 1978, p. 44). In essence, this form of leadership transforms people from the selves that they are into the selves that they should be. As a result of the transformation, people are poised to be true to their better selves. (Price, 2003, p. 68)

Hollender's moral values were on display with every decisive moment. When the democratic committee process didn't yield a clean outcome, Hollender made swift decisions in line with the company value system:

> Jeffrey Hollender called a meeting of the exec committee, the company VP of marketing, the VP of sales, John Murphey. The head of consumer relations, the VP finance, Jeff Phillips, the director operations, Jay LeDuke…What should we do? Went around table, Sue Holden, our consumer relations head, said, "Stop selling. It's not true to who we are." John Murphey worried that if we pulled the product, we would lose shelf space that would be hard to recover. The VP of finance didn't want to give up the sales. Jeffrey made the decision, taking all the product out of warehouses and off shelves until we have a natural formula again. I was impressed by how clearly he saw it, the decisiveness of his action. (Researcher Interview, M. Wolfe, November 14, 2008)

Hollender's clear vision and his passion for the cause, his willingness to live out those values through Seventh Generation, and his outside activities clearly inspired his employees, as well as people around the world. My data were replete with evidence of this inspiration. When discussing the company mission statement during a Values and Principles committee meeting, someone asked:

> Does it capture his [Jeffrey's] aspirations? (Document, 2005 Values & Operating Committee: Clarifying our Deep Purpose and Finalizing our Mission, 2005)

During an interview, an employee gushed,

> I used to go to any conference I could that had Jeffrey Hollender speaking at it. Now I get to edit his blog post and learn what he's thinking at that hour. (Researcher Interview, C. Middings, November 14, 2008)

Another employee said:

> I had been purchasing Seventh Generation products. I got their newsletter. I'm a huge fan of [Jeffrey's]. I've read Jeffrey's books. I thought he was a hero! (Researcher Interview, J. Moran, November 14, 2008)

Hollender clearly inspired the vision, but there was nothing in the data to suggest that Hollender's transformational style of leadership was enough, in and of itself, to get people over the barriers to sustainability. To ensure that the business served the cause, Hollender went a step further and institutionalized—or to use the fashionable term in the literature—embedded sustainability *as a performance imperative*. Hollender made sustainability a job performance issue for every single Seventh Generation employee. In much the same way profit cannot be an option for a business, in this company sustainability was also considered non-negotiable. Every employee was to keep the eight Global Imperatives and the three pillars of sustainability—environmental, social and economic—in mind every step of the way. Such was the path by which Hollender foresaw success.

Some might distinguish between sustainability and profitability, in that if the company loses profitability it is forced to shut its doors, whereas if the company loses sustainability, it may remain open. That distinction made no difference to Jeffrey Hollender or to the company he created, because the company mission valued sustainability as highly as it valued profits and chose not to trade one off against the other. To be forced to do so would have been a Sophie's Choice for Seventh Generation. Seventh Generation's commitment to sustainability resulted in management dedicating enormous amounts of time and money to developing tools and tactics to problem-solve their way around such trade-offs.

Hollender institutionalized (embedded) sustainability through employee responsibility. He instituted a hiring system to identify employees who embraced his value system, extensively

trained employees to see the world through the sustainability lens, and made sustainability thinking a job performance issue for every employee. In so doing, Hollender embedded and operationalized the values across the company's value chain. Once embedded, the Sustainability Imperative became a thing unto its own, belonging to the organization and separate from Hollender. Table 5 shows the relational construct "Embedding Sustainability Value Imperative" and its supporting themes.

Table 5

Relational Construct, "Embedding Sustainability Value Imperative"

Relational Construct	Supporting Themes

Embedding a sustainability imperative across the organization and the value chain	• Jeffrey Hollender's transformational leadership style
	• Hiring, training and setting job performance requirements to motivate cause-related employee activism
	• Keeping values at the center of everything by:
	  ○ Aligning operations with mission and values
	  ○ Aligning external relations with mission and values

Figure 3 visually maps the organizing relationship between the core construct of embedded sustainability and its supporting themes.

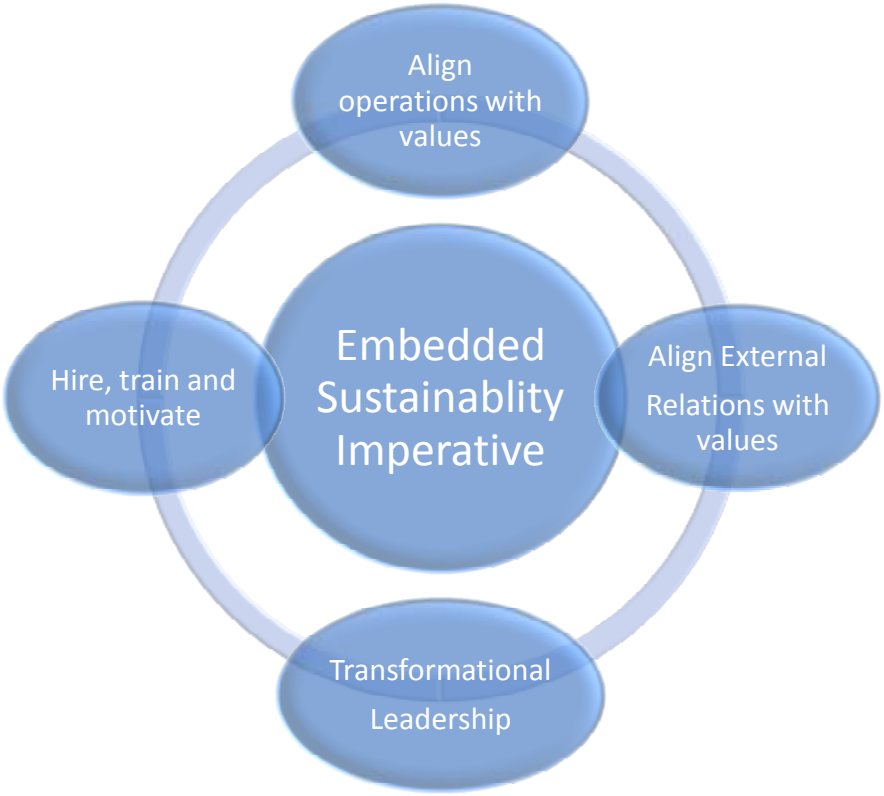

Figure 3. Visualizing embedded sustainability imperative as a core.

Cox Arizona's Embedded Sustainability Criterion

Cox' sustainability criterion began with a conservation initiative launched by its Atlanta parent company, Cox Enterprises. All subsidiaries were expected to act in accordance. That initiative, Cox Conserves, emerged from the personal and family values of the current company chairman, James Kennedy. Conservation is "hard-coded into the founder's family" (Researcher Interview, J. Giali, September 5, 2008). As part of Cox Conserves, Cox Enterprises established some minimal annual programming for its subsidiaries, including a Cox Heroes program celebrating an individual's contribution to the environment or community, and planned meeting events where Cox subsidiaries could share sustainability ideas (Cox Media Group, 2009a). But

the main thrust of Cox' sustainability programming was handed off to the individual subsidiaries to plan and implement their own sustainability programs. Interactions between Cox Arizona and Cox Enterprises with regard to locally determined sustainability decisions were rare, occurring only when an activity had an impact up the chain of control. Cox Arizona never interacted directly with Mr. Kennedy on sustainability matters.

As with Seventh Generation, the mandate from above was the impetus, but it was insufficient to produce sustainability behavior. In Cox Arizona, a plan to embed sustainability into a core business process—asset and services procurement—was hatched by Farid Melki, director of the Asset Management division. Cox had a centralized procurement and contract management team. All sourcing, purchasing, and vendor contracts, while originating in home departments, were funneled through the centralized team for investigation. Cox Arizona does about 700 contracts per year. By embedding a sustainability criterion into the procurement process, Cox could make substantial strides in the very short period of time since Cox Conserves was launched. In his role, Melki was uniquely positioned to integrate sustainability planning across the entire Cox value chain by:

> …looking at every process we have, and every operation, every aspect of it, evaluating it to incorporate sustainability consciousness into that process...into the acquisition of an asset or anything else… (Researcher Interview, F. Melki, May 2008)

While many companies silo their sustainability efforts in community relations departments or in stand-alone corporate responsibility offices (Frankental, 2001), Cox placed its sustainability activities within a department that served as a critical partner to every other department inside the organization. This made a monumental difference at several levels. First, siloing—or towering, as Norton calls it—leads to knowledge and value gaps between departments and reduces the success of cross-functional activities. Managers assigned to

implement sustainability activities may find themselves at odds with managers responsible for achieving other organizational goals such as marketing, safety considerations, resource management, profitability, shareholder relations, and so forth (Norton, 2005).

Second, when sustainability responsibilities are ensconced on the periphery of an organizational structure—in departments considered staff function, such as the community relations department, it suggests that sustainability activities are ancillary to the main or "line" work of the organization (Frankental, 2001). Or as Laszlo put it, sustainability programs that are "bolted on" rather than "built in" are less likely to endure (Laszlo & Zhexembayeva, 2011). The structural impact of such placement is limited. This idea comes across in an interview with one of Cox' public relations employees, who wanted to initiate some sustainability projects before Cox Conserves was launched, but discovered that her department was too peripheral to successfully undertake sustainability efforts on its own:

> I was going to [Arizona State University] where I picked up a green issue of the State Press. It was all done in recycled paper. I brought it to Cox, and my team liked it. We wanted to launch it. I'd always been thinking about doing something. I'm from Canada where standards are different… I had worked at leading green hotel in Canada, the Royal York. I presented my idea to my team and to Pye, my director….But sometimes, Communications can't do anything until there are foundations… in place. Until this year, when Farid and Jason were ready, and Cox Conserves was launched nationally, I wasn't able to [get a green project going].

By contrast, as the sourcing and asset management arm of Cox, the Cox Asset Management Division was integrally involved with every division at every level. The division acquired a working understanding of each department's function and successful working relationships. Asset Management Division's job was critical to the functionality of each department they worked with, and it was Melki's job to ensure that functionality criteria were not diminished after sustainability was added as an additional criterion. The Division's authority to act in the marketplace, coupled with its strong working relationships inside the firm and its

leverage with external vendors and other partners, enabled it to exchange knowledge, collaboratively problem-solve, and act on sustainability decisions.

It is unknown whether Cox's senior management team knowingly placed the sustainability function in Asset Management Division because of these factors, or whether the team entrusted the function to Farid Melki because of his background and management style and the team's trust in him. Either way, the fortuitous placement resulted in the embedding of sustainability values into a core business function with cross chain reach and authority to act, ensuring the operationalization of its sustainability criterion.

Table 6 displays the relational construct, "Embedded Sustainability" as operationalized at Cox Arizona.

Table 6

Embedding a Sustainability Criterion

Relational Construct	Supporting Themes
Embedding a sustainability criterion via a core business process integrated across the entire value chain.	a. Strong corporate mandate; Cox Conserves;: "It's hard-coded into the founders' family" b. Coordinating sustainability efforts through a core business operation with execution authority c. Embedding a criterion for sustainability values through a core business process integrated across the value chain to ensure systematic and methodical attention

Figure 4 illustrates this concept.

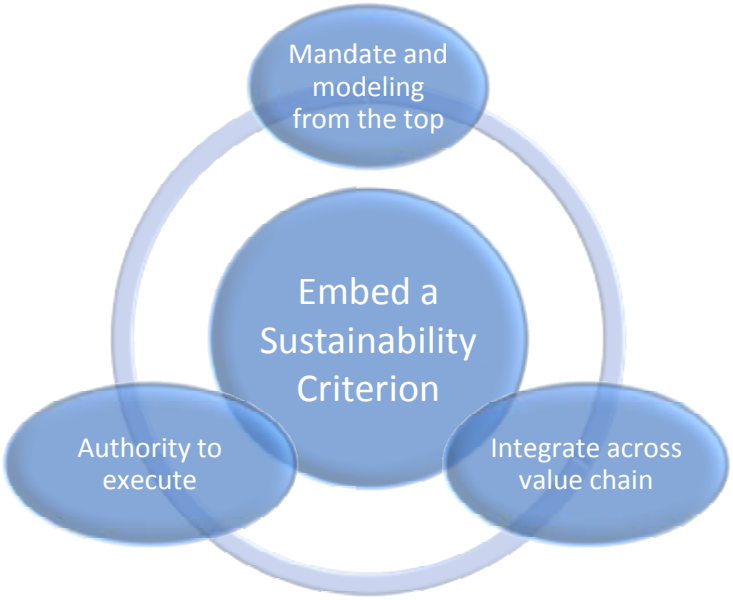

Figure 4. Relational construct, "embedding sustainability criterion."

Cross-Case Comparison: Embedded Sustainability

Both Seventh Generation and Cox's sustainability drives originated with leadership. Seventh Generation's imperative originated in founders Alan Newman and Jeffrey Hollender's values, with Hollender refining the vision after Newman's exit. Cox's criterion began with Cox Conserves, a mandated program from Cox's Atlanta conservation-minded parent company. However, unlike Kennedy at Cox Enterprises, Hollender was very much present and did not relinquish the implementation details. Hollender was a transformational leader whose sustainability vision was known nationally, and the company was fashioned to be a vehicle to carry out that vision.

Seventh Generation embedded the sustainability imperative through its people. The organization hired for value synchronicity, articulated its values through eight Global Imperatives, and charged each employee with the responsibility to consider these Imperatives with each decision. By creating a web of awareness, Seventh Generation ensured that all

organizational activity could be intentionally aligned to organizational values. Seventh Generation employed a variety of tools to ensure the success of its employee responsibility program, including strong leadership support, a cross-department team project structure to create time and space for working through sustainability issues, and ongoing training for personal and professional development designed to raise employees' awareness and improve their sustainability skills set.

By contrast, Cox institutionalized (or embedded) the sustainability criterion by housing its sustainability program responsibility within the Assets Management Division, a core management operation that oversaw the life cycle of all purchases and service contracts for the entire organization. The Assets Management Division was considered a critical partner for all other divisions and had a high degree of autonomy and authority to act within its own purview. By embedding responsibility within the Asset Management Division, sustainability coverage could sweep the expanse of the Division's reach. The Asset Management Division's main tool for pursuing integration of sustainability features across the entire organization was a procurement system that included a heavily-weighted sustainability criterion and adequate staffing to develop collaborative processes to investigate sustainability alternatives, ensuring that sustainability features would be woven into every contract.

That these companies embedded their criterion so differently suggests there may be no one "right place" to embed the criterion. It also suggests that the need for a pervasive "culture of sustainability" such as Seventh Generation created for their organization may not be necessary. At Cox Arizona there was no culture of sustainability. Most employees were far less involved than those at Seventh Generation. Cox implemented sustainability projects visible to employees and external stakeholders, such as greening the cafeteria, an Earth Day kick-off lunch, a cross-

function managers' team (TWIG) to identify recycling opportunities, reporting on conservation news in staff meetings, and posting stories about conservation activities in internal communications. A closer look at these projects shows that Cox's actions were geared to internal or external educational or reputational aims. Inside Cox, high visibility activities were designed to launch employee awareness—a good thing, but not commensurate with Seventh Generation's efforts to motivate and train employees to see and act on all job duties through a sustainability lens. Compare the personal awareness and sense of responsibility acknowledged by a Seventh Generation employee:

> This is the whole thing…having your mind in a place where you always think about things like that—it's in every deliberation, always being conscious of that. If you can always hold that while you're thinking of anything, it automatically comes up. (Researcher Interview, N. Stoddard, November 14, 2008)

By contrast, organizational efforts to achieve sustainability to a Cox line employee are a source of pride and acknowledgement, but not personal responsibility:

> Sustainability comes up not a lot. More, we talk sports, election, politics. Occasionally we'll talk about changes, especially like what we see in the cafeteria: "Hey this is something new …" (Researcher Interview, J. Dunn, September 7, 2008)

Whether an employee participated in sustainability decision-making mainly depended on holding a job that included contract authority. Many employees would never have any active participation in creating sustainability within Cox, although they may see and experience the outcomes. Cox's sustainability mechanisms did not rely on having everybody on board the way those of Seventh Generation did. Though there was talk of a "culture of sustainability," one interviewee put it like this:

> Is [sustainability] the culture at Cox? My answer to that is, today we are in the development of that culture. That culture is not mature. (Researcher Interview, F. Melki, September 7, 2008)

It should be emphasized that this condition should be seen as neither positive nor negative. While a culture of sustainability might be seen as a desirable feature of a social enterprise—a private company "established for the express purpose of repairing society" (Katz & Page, 2010 p. 59)—Cox Arizona's experience demonstrates that a firm need not stretch to Seventh Generation's level of culture saturation to successfully implement a sustainability agenda. Since the perception of high transaction costs—even short-term transaction costs— may detour firms from sustainability activities (Ostrom, 2009), this distinction is an important finding.

Imperative vs. Criterion

"Criterion" is defined as a principle or standard by which something can be judged or decided. "Imperative" is defined as an essential or urgent thing; a factor or influence making something necessary (Criterion, 2013; Imperative, 2013). Both terms embody the idea of a decision factor. However, "imperative" connotes a higher "imperial" rank for the factor. The term "criterion," on the other hand, suggests nothing of its relative rank among other criteria. When discussing the way these two organizations prioritized sustainability values, I used the term "imperative" for Seventh Generation and "criterion" for Cox. "Imperative" reflects both Seventh Generation's fervor and its set of Global Imperatives. Criterion reflects the fact that the Cox Arizona procurement process included sustainability as one of its procurement criteria.

Though the term "imperative" suits Seventh Generation's internal framing, over the long haul, no firm can afford to elevate sustainability *above* the other criteria necessary to company survival—profit-taking being most frequently mentioned as in conflict with sustainability outcomes, but product marketability, resource availability, workforce stability, and other such criteria are also important within the realm of firm success. In point of fact, both firms find

themselves struggling with competing criteria. The following story details Seventh Generation's struggle to balance profit-taking versus product improvement.

> We struggle a lot with financial authenticity, and balancing those two. You could make the most authentic product and have it be very natural, but consumers want to be able to afford it. I'd say right now our systems to make those decisions are lacking. We don't have a formal system to look at it objectively. There's not a consumer index that says, "if you deliver this much improvement in sustainability, you can deliver this much higher cost." There's not a good understanding of the relationship between the two. If I was to come to the management team right now and say I've improved the autodish gel, it's more authentic, and going to improve the environment, but it's going to cost us $300K to improve it, we would struggle. Consumers would not buy more because they already believe we are doing the right thing because it's 7G, and so we would take a $300K hit for doing it. (Researcher Interview, T. Fowler, Nov. 17, 2008)

The second story tells about an unprofitable Cox sustainability project that cannot be tied to a business case and is being done for other reasons—to role model sustainability for its employees.

> [On greening the company cafeteria] Jason is a whiz at this. He really did his homework. There are different ways of going green. He specifically wanted to go biodegradable. He wanted to know if he went this path or that path, what is, in the end, the ultimate advantage to it. He sat down with our vendors, he'd done all the information, knew what he wanted… This is "subsidy account." They pay for everything and…we're not trying to do a profit and loss. (Researcher Interview, J. Hoffenburg, Sept. 5, 2008)

An economically sustainable firm that also practices environmental and social sustainability must find ways to accommodate sustainability needs alongside other criteria necessary to business well-being, so that in the overview, multiple goals are successfully met. Thus, for the purpose of synthesizing the embedding principle, the word "criterion" was selected.

Alternative terms were considered, including preference, priority, mandate, standard, presumption, requirement, primacy, duty, promise, and obligation. Terms that connoted outside force, such as "mandate" were rejected because those words implied "imposed." The influence of rhetoric (Milne & Walton, 2005) was also a factor. "Promise" and "obligation" need to be followed by a "to whom," and imply an external source. External drivers can lead to stakeholder-driven outcomes rather than true sustainable-centric outcomes. Words like

"standard" that implied a preset value were rejected because such terms imply the existence of a rule or set of rules—perhaps a best practice standard—governing sustainability outcomes. The data suggested that the subject organizations operate outside a "best practices" frame; instead, they practice from within the frame, "sustainable behavior is not optional." In this frame, "best practices" is not the desired outcome; true sustainable behavior is the goal post. Best practices would be considered a limiting factor, or as one interviewee reminded us, once you "see the endpoint," half measures provide inadequate and temporary, if sometimes necessary, choices (Researcher Interview, T. Fowler, November 17, 2008). "Preference" and "presumption" were rejected because they imply rebuttability, and as such, might give way under the right set of circumstances. These firms did not see the sustainability frame as expendable.

In the end, "criterion" was chosen because both organizations recognized sustainability as one among a small handful of essential operating criteria and committed themselves to finding ways to give precedence to sustainability outcomes through means that did not simultaneously marginalize other critical business values.

CHAPTER 7

CORE CONCEPTS: LEARNING PROCESSES TO DISMANTLE BARRIERS AND POWER TOOLS TO SUPPORT LEARNING

Learning Organizations

As noted in Chapter 6, Seventh Generation and Cox struggled with conflicting priorities along the road to sustainability like most firms do. For these two firms, however, the conflicts did not present insurmountable barriers due to the successful use of learning techniques. This chapter will show the distinct learning mechanisms in play in each organization that enabled the firms to dismantle barriers to sustainability success. While Seventh Generation established a formal learning culture, with ongoing committees, learning consultants, staff training in learning processes, and even the adoption of learning-oriented linguistic terminology, the sustainability managers at Cox Arizona employed an informal learning scheme adapted from its general corporate practices. Nevertheless, the organizations' learning practices share several similarities. As with practices for embedding sustainability, the distinctions suggest that learning practices for sustainability can be tailored to fit firm culture and practice. Finally, this chapter separates learning into social and structural components to emphasize the need for both components to successful sustainability programming.

Senge (1997) described the learning organization as one with a clear vision, shared mental models, a cultural willingness to experiment, and a proclivity for teamwork. Garvin et al. (2008) proposed three fundamental criteria necessary for an organization to be fully a learning organization: a supportive environment, concrete learning processes, and leadership that reinforces learning. Goh and others have connected the learning organization with improved innovation performance (Goh & Ryan, 2002). Westerlund demonstrated that learning with inter-

organizational (value chain) partners leads to novel product innovation (Westerlund & Rajala, 2010). The following learning characteristics have been tied to increased innovation performance: "Open communications and information sharing; risk taking and new idea promotion; and information, facts, time, and resource availability to perform one's job in a professional manner" (Kontoghiorghes et al., 2005, p. 185). The relationship between these varied elements has been well visualized in this graphic by Singer and colleagues (see Figure 5).

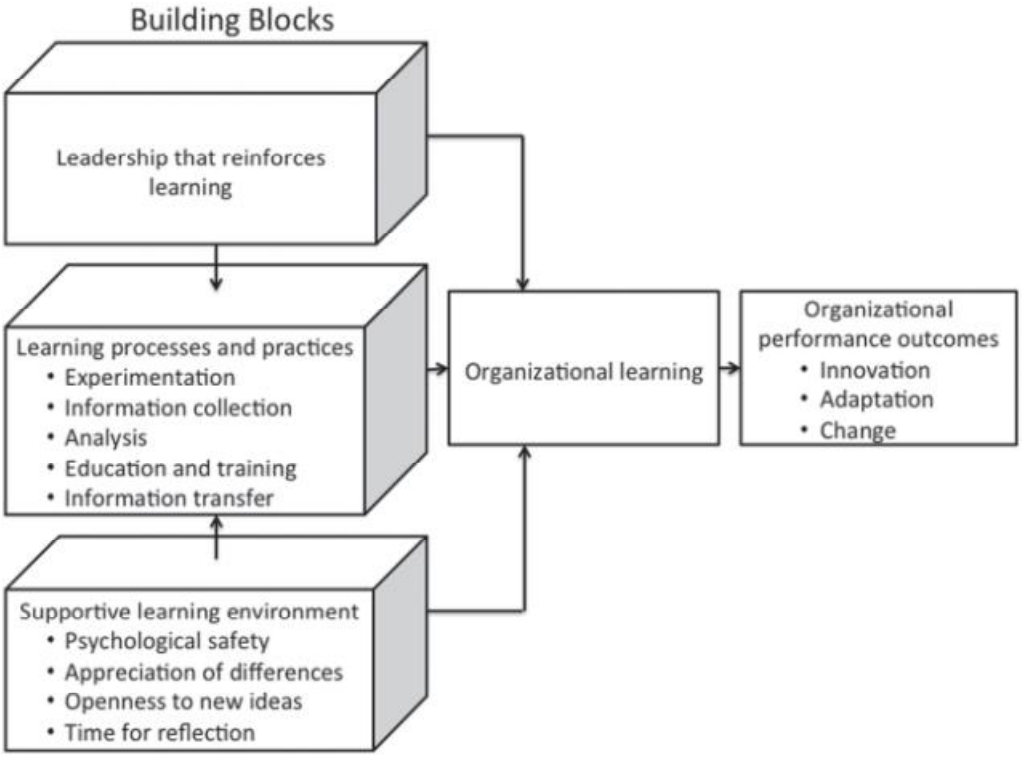

Figure 5. Organizational learning characteristics (Singer, Moore, Meterko & Williams, 2012, p. 435).

Although it is not visualized in Figure 5, Senge and others have identified systems thinking as a necessary discipline that facilitates the learning organization (Senge, 1997). Systems thinking allows one to see holistically and to recognize the interface between structures

and behavioral patterns that may otherwise be obscured due to the complexity of a situation (Yeo, 2005).

Seventh Generation: Do the Right Thing through Learning

The company culture at Seventh Generation is replete with characteristics of the learning organization. Beginning with leadership that reinforces learning, Jeffrey Hollender was personally committed to learning and innovation, for both his employees and the organization. He hired organizational development consultants to teach learning processes, specifically including systems thinking, and the employees embraced and wrestled with the larger perspective:

> If we do something "over here," it's the whole earth-to-earth thing. We understand the implications across every area. We may find the best vendor from one perspective, but learn the vendor is doing terrible things, from another. To me it seems from that way of looking at making decisions, it's pretty critical to have that [cross-function input] in place. (Researcher Interview, N. Stoddard, November 14, 2008)

> The systems approach both complicates and facilitates everything. I see that as a big difference from other companies. We are trying to think of everything. Sometimes it's another thing that prevents us from making decisions, because we're doing this, we often see [ultimate] endpoint, whereas other places I've been, you just see the next step. Where you see the endpoint it becomes difficult to make a move, even if the consumer may not be asking you for the whole enchilada. I know a diaper that you don't throw away is the answer, but if I can make a diaper that has no plastic, but you still throw it away, it's way better than where we are now, and how the consumer wants us to proceed. (Researcher Interview, T. Fowler, November 17, 2008)

A great number of themes in the data pertained to learning or the firm's support of learning. Although employees held differing opinions of what sustainability meant, they uniformly believed the firm would "figure it out" and do the right thing.

> I have never been in a company that's spent so much time trying to do the right thing, and figure out the consequences. We're not always right, but 99 percent of the time we tried to do the right thing. It's frustrating when you find out something about your product that isn't right, but you know in your heart you tried to do the right thing. It makes it a lot easier to come to work. (Researcher Interview, T. Fowler, November 17, 2008)

Figuring it out tended to involve an inclusive, deliberative or research-based process to identify the right course of action:

> If you look at our diapers, there are things in our baby diapers, there are things that are not that different from conventional products… There are ways we can upgrade authenticity or source of materials. We engage in discussion, about "those materials are still bad." "But it's better than we were…" and "How can we making progress?" We let in the diversity of opinions. The mix makes us what we are. We have… a lot of passion in the discussions….Having those types of discussions is good part of the job… It's a more consensus-based company. In some cases, consensus is the right way. For other decisions, like the financial ones, the leadership can make decisions on day-to-day. But on products, materials, we talk. Not everyone needs to agree, but once we reach a decision, everyone needs to align to it, to be comfortable enough not to veto it. (Researcher Interview, G. Embleton, November 14, 2008)

> I'd say that we don't have agreement among the company as to what the definition of sustainability is…I think sometimes the diversity of opinion and definition creates a more robust product. (Researcher Interview, M. Wolfe, November 14, 2008)

Hollender also brought in consultants to teach the staff how to be better learners. He used a series of consultants, the work of one of which was grounded in Senge's writings on learning organizations. Another, consulting at the time of the research, Carol Sanford, provided help achieving shared frames around the firm's Global Imperatives, and through the use of a set of expressive terminology designed to further that purpose. The human resources manager, explaining the orientation of new employees to the language, describes this:

> [We cover] corporate systems thinking, we set up a nice direction for decision-making. We talk about our "essence" and that's why Seventh Generation is in existence. It's very high level. We go over our core purpose, our core values, core processes. None of this has anything to do with what we do, but it also has everything to do with what we do. We teach Global imperatives. These are so great. They are so high level, you can apply them to everything you do. We ask them to… hold [the Imperatives] in mind. It's helpful. This is developmental management. We are striving for "collective consciousness," which will make us better than we can be as individuals. In the beginning it all starts to look a lot like. Some of it is jargon, some—about the core pieces of systems, is the common language that we use to talk about what we want to do. We use reflection, consciousness, discussion about the effect you seek, our aims, becoming and change, authenticity, frameworks. It's all from systems thinking. (Researcher Interview, N. Stoddard, November 14, 2008)

Like anything new, the training wasn't always easy to adopt, and wasn't embraced by all:

> Carol's foundation is good. But the language she created obfuscates. The Global Imperatives don't mean shit to me. Gregor and Jeffrey are bought into it, but nobody else in the company is. I'm into language that's more useful—systems language, positive feedback loops. Real tangible tools everyone could use every day. What Carol's doing is reinventing the wheel, and putting her name on it. She's nice, but I'm not sure it's the most effective way. (Researcher Interview, Employee Identification Omitted, November 2008)

But most were open-minded and willing to employ the methods:

> When I first came, there was an orientation where I was introduced to the global imperatives of the company, and some of our guiding principles. That was very challenging at first…[to] immediately be introduced to all these global imperatives. I was a little bit uncomfortable with the phrases and the language…I think about my growth and the developmental process. I keep a line in the kitchen where I measure my children. It's hard to see the growth on a day-to-day basis, but every once in a while, especially with new employees, I recognize how much I've grown. (Researcher Interview, J. Moran, November 14, 2008)

Sanford also provided training in framing, another learning technique that helps people move beyond the normal limits of perception toward systems thinking (Howard, 2009, p. 26). Framing was appreciated for assisting Seventh Generation in envisioning and dialoguing on matters of importance. Sanford helped Seventh Generation develop frames for their Global Imperatives:

> A framework is something you move your thinking to…so that [everyone is] guided by the same questions….At the basis are "Global Imperatives." (Researcher Interview, C. Sanford, November 18, 2008)

Discussion was addressed through the lens of the Imperatives, and that helped keep everyone on the same page, aligned to the company values, and able to have conversations that were difficult before the frames were employed:

> It's about shifting mental models, if you want to get into OD talk, about really understanding the true costs of consumption and stepping out of a mercantile frame of mind and into a holistic frame about business. (Researcher Interview, R. Doyle, November 14, 2008)

Here is an example of how changing the frame made a difference in internal communications related to problem-solving:

> [Using the frames] slowed Jeffrey down a lot and helped him see how he'd made mistakes before...Now he can accept restraint from others, now they can talk to him through the frames and he can have that conversation. Before he disregarded them because he didn't [get why they were trying to stop him]. (Researcher Interview, C. Sanford, November 18, 2008)

Hollender also instituted a team structure to provide an environment dedicated to sharing information, collaborative learning and problem solving; encouraging research and educated risk-taking; and providing an open environment in which ideas were welcomed. Problems, even high impact issues, were often studied and determined by cross-function teams, or even collectively:

> Seventh Generation is different from other places, around making good decisions. I'm a believer that people shouldn't be stereotyped into "they should only do this thing" like Nancy can only do IT. By looking at the capability that every person brings uniquely, for example, I have a certain way of looking at the big picture, and looking at all the workings within that, I think that particular skill can be applied across all areas of the company. Getting the right cross-section of minds in a room make sure you have the whole picture. We're not there yet, but working toward it. It's sort of like the way Obama views decision-making. I don't want to get just one opinion in the room, or need everybody to agree with me. I want to understand all aspects, hear everybody. Find the right balance to have the right persons in the room, and still be quick about it. (Researcher Interview, N. Stoddard, November 14, 2008)

Seventh Generation also practiced information-sharing toward sustainability innovation:

> This is the whole thing about being innovative—having your mind in a place where you always think about things like that— it's in every deliberation, always being conscious of that. If you can always hold that while you're thinking of anything, it automatically comes up. (Researcher Interview, N. Stoddard, November 14, 2008)

External partners were brought in for innovation, through collaboration or leveraging resources and knowledge to eliminate or repair unsustainable practices arising from their operations. Two examples, one regarding palm oil sourcing and the other a distribution partnership, are telling. In the first instance, palm oil, a common ingredient in many cleaning

supplies and toiletries, is being unsustainably farmed, to the detriment of the rain forest. Unfortunately, there is currently no good alternative, so Seventh Generation decided to source only from sustainable farms, and to work with NGOs to teach sustainable farming to willing farmers. I interviewed an employee on his way to Bali to sign a contract for sustainably produced palm oil. While he was there, he had a side trip to take:

> I'm also going to Sumatra. I'm meeting with World Wildlife Fund, looking at the flying elephant fund for "disenfranchised elephants." We have to find a safe way to drive wild elephants out of the plantations. Should be interesting, to say the least. (Researcher Interview, R. Doyle, November 11, 2008)

In the second case, Seventh Generation is attempting to reduce their carbon footprint through the use of degradable packaging, and they reach out to their supply chain, to educate, to collaborate, and if necessary, to use leverage:

> We're trying to get all our corrugated packaging to be 100 percent recycled. Several suppliers have converted because we've introduced them to Pratt Industries, the largest corrugated manufacturer in the U.S. We go to all our suppliers and take them to Pratt. "Here's our list [of what we need]. Go to it." [If] there is resistance at the filler's…because they believe the boxes won't be as strong, or…they'd have to deal with two suppliers, we pressure them, "Can you look at this for the rest of your line, for your other customers?" (Researcher Interview, P. Swain, November 14, 2008)

And although this does not directly speak to internal sustainability problem-solving, the next bit of text demonstrates how Seventh Generation leverages its learning outward into the industry, helping to remove sustainability barriers experienced by others. Where other businesses might keep their strategic advantage to themselves:

> One in ten cleaning products in the supermarket use palm oil. It's grown typically in Indonesia, and has host of sustainability issues—environmental issues, deforestation, species—orangutans—wiped out, and worker issues. If you [Google] you'd find environmental groups, human rights organizations, the whole spectrum of NGOs looking at their little piece of the problem….We use palm oil because technically no alternative. …We'll have signed an agreement to only use sustainable palm oil in products, [from] a producer who certifies sustainably sourced palm oil. It's audited by a company with high standards, Reinforced Alliance, the roundtable for palm oil…We'll be the first in the U.S. to make those claims. One thing very unique about us is…it's great that we'll be the first,

> but it will put pressure on the industry. Why aren't you doing it if we're doing it? It's beyond "first at marketing claims." It's leverage. (Researcher Interview, Reed Doyle, November 15, 2008)

Thus the concept "Do the right thing through learning" is the second core concept, as shown in Table 7.

Table 7

Relational Construct, "Do the Right Thing through Learning"

Relational Construct	Supporting Themes
Do the right thing through learning	• Tools, time, support & other resources, such as indices and measurement tools, to support problem-solving • Training for learning, such as shared frames, meaning-making and other learning processes • Open, diverse, inclusive, information-sharing culture, dialoguing with customers, collaborating with suppliers & distributors • Systems thinking • Culture that encourages and supports innovation

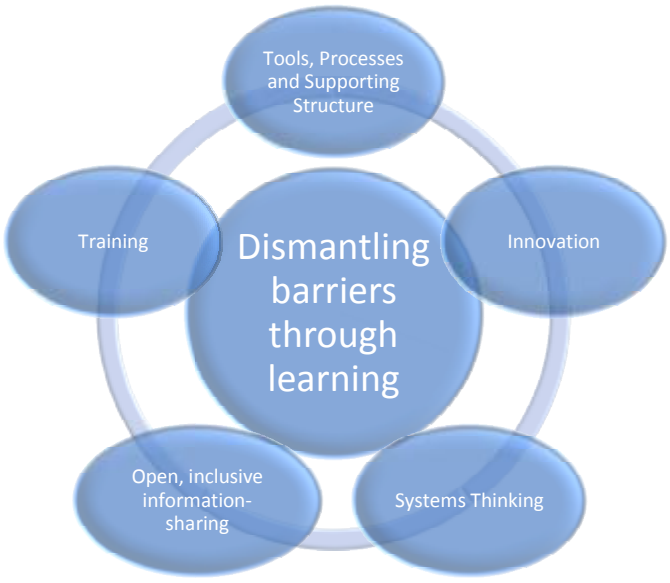

Figure 6. Do the right thing through learning as a core.

Cox Arizona: Problem-Solving through Learning

Cox also had several of the elements of a learning organization in place, despite the fact that nobody inside Cox utilized that language during interviews. A learning organization, according to Senge (1997), needs a clear vision, shared mental models, a cultural willingness to experiment, and a proclivity for teamwork. Gavin et al. (2008) suggested three criteria: a supportive environment, concrete learning processes, and leadership that reinforces learning. Innovation in a learning environment has been tied to open communications and information sharing, risk taking, new idea promotion, and information, facts, time, and resource availability (Kontoghiorghes et al., 2005). Systems thinking is considered a necessary perspective for successful organizational learning (Senge, 1997).

The Cox analysis showed the following well developed themes related to organizational learning:

- Systems thinking: complexity—changing a complex, multi-scalar system requires attention to multiple impact considerations, seeing barriers as complex but not unworkable
- Networking and inclusivity: bringing in stakeholders and vendors to the process to collaborate for value and problem-solving
- Clear vision and supportive leadership for sustainability values
- Tools: availability of research, education, time, information, experts—through Jason Giali
- Open to new ideas and innovation: "Ideas come from anywhere"

Cox's decision process related to sustainability planning and problem-solving does incorporate many features of a learning organization. Cox definitely approaches sustainability from a systems perspective:

> The other thing is, is this only a one-sided solution or is it a holistic, educated solution? …When I'm engaged in decision-making for my organization, I am not only thinking short-term, am also thinking long-term how it's going to impact, not only thinking [about] my organization, but that I represent the biggest organization in the Cox [family] so my decision-making I am looking not at what I do, but if somebody in Oklahoma wants to view us, how does that impact them as well? (Researcher Interview, F. Melki, May 14, 2008)

Cox takes a multi-scalar and future-oriented view, understanding that actions may have long-term ripple effects throughout the system:

> A big theme for Jason is waiting. He wants to do this stuff right. He wants patience from the employees, and it requires a lot of explanation, rather than saying "No." (Subject Record, Notes from the Field, July 23, 2008)

Cox reaches out to stakeholders to collaborate, educate, obtain the necessary feedback and build support for potential solutions:

> How do we spread our values across the company? An example is our new full-size truck [that replaced the van]. I partnered with Jason. Together we presented it to our boss and spoke with other directors involved, with other VPs, to get buy-in and hopefully pique interest in changes we want made. We actually had a prototype of the unit made up. We took it around to all the various groups in the field, at the Area Service Centers where guys run out of. We went the ASC route instead of through headquarters. Basically myself and the other individuals who have been on the vehicle functionality group, we've presented it to the techs who will use it, to the directors of the departments it's going to directly affect, to show them the cost savings, to get buy-in. By putting it out there, showing them numbers, and the actual product, by [adding] better ergonomics, we eliminated a lot of their issues. Everyone seems to be excited now. This is coming. (Researcher Interview, J. Sanders, June 9, 2008)

While fleet changes for sustainability involved several levels of outreach and collaboration, Cox made a practice of involving the end user in even the tiniest sustainability decision, to ensure the utility was there:

> This morning I walked into reception and met the woman who is the head receptionist. After signing in and receiving a laminated badge, I asked for the marker to put my name on the laminated badge, and she said I don't have to do that. I remarked that I was asked to do it Monday, and she said that Monday's receptionist was a temp, but they are trying to "go green," and that the markers aren't very green—well, the ink is green—but because they don't last that long, they aren't truly green [they needed to be disposed of]. She also showed me the old Cox badges. They stopped using those because they were expensive and also not "green." She said she chose to go with laminated ones because they are only 25 cents to make and last forever. (Researcher Notes, Day 2, July 23, 2008)

Cox believes in education, planning, and solutions that maintain the business utility over the long term:

> If I were for a moment, to consider Cox Communication Inc. as a green consumer as we relate to the vendors out there, any time there is a trend of awareness, like about asbestos, or mold, or carpal tunnel syndrome, any heightened awareness about something, entrepreneurs step in and start generating revenues in that field. As a consumer, it is important to sift through what are toys, just a fad, something that's going to come and go. There has to be assessment, measurement, and relevancy. What works for Cox in sustainability might not work for Honeywell. So… if the consumer, or Cox as consumer, is not educated about the topic, and therefore does not have the ability to make the assessment or understanding about how to incorporate sustainability into the business, then we're going to be totally subject to an entrepreneur yanking us around. [Companies who let that happen], those are the companies that are going to say, "I cannot afford it." They are only seeing [sustainability activities] as an added premium expense. They are not going to take advantage of the full benefit of what it could be. (Researcher Interview, F. Melki, September 7, 2008)

Cox operates under the strong belief that it can work through any issues through innovation, double loop learning, and open-mindedness. Here are some "turning the Rubik's cube" examples:

> [Some] water savings areas are too expensive to change, like the plumbing. Instead, we are looking at what we can control. We can control the landscaping. (Field Observation, Groundskeeper Meeting, July 24, 2008)

> Waste Management would like all our light bulbs back because they get a "spiff" back, but why shouldn't we get our own rebate? (Researcher Interview, J. Giali, September 5, 2008)

> So, we looked at every component—"gap analysis"—a business process that you look at the business, understand currently your objectives, processes, resources, budget, how do they integrate, and try to conclude are you using your resources effectively. Gaps,

> redundancies, overlaps, inefficiencies, etc. We took each organization, fleet was one of them, identified the gaps and bring in new visions and new solutions. Those new visions include sustainability and environmental compliance. It's… a better way of doing business. (Researcher Interview, F. Melki, September 7, 2008)

And there was a clear culture of innovation encouraged. As one employee expressed it:

> Innovation is expected—that you will always be thinking of new and better ways to do our business. Not just sustainability. It's an expectation of my job. We even have this program, kind of off the subject, but some green ideas have come of it, the Bright Idea program, for non-management. Anyone can submit ideas to supervisor, and together with supervisor crunch out numbers and put together the information. If it is implemented, [the employee] gets a cash incentive, part of the savings from implementing the idea. (Researcher Interview, A. Katsenas, September 8, 2008)

The only missing piece appeared to be a formal learning process. However, an informal learning process was in place. Information was methodically gathered about whatever sustainability challenge confronted Cox, and impacted stakeholders and necessary experts were consulted. Employees were open to new ways of thinking and doing, and searching out ideas that "might come from anywhere," hashing through information, ideas, and alternatives until something—novel or simple—emerged to meet both utility value and sustainability criteria.

Being a learning organization does not imply that a perfect solution will always be "learned" immediately. Giali told a story about a "temporarily" less than satisfactory solution for a pest control contract. Providing a sustainable pest control solution for Cox turned out to be a very complex problem:

> Pest control is another issue, especially in a LEED certified facility. We want to use as few [chemicals] as possible. But for our network facilities [at the headquarters], I can't have a rat get in there. If they gnaw on that [cable] it could cause significant damage. So we didn't take a full green approach necessarily there. We're using what [barriers] we can to make sure nothing gets in there, but we're still not fully implemented. We're still using some of the same pesticides as we always did…It didn't make sense because of the amount of work. You have to check baits, traps, catch little bugs on sticky paper. Someone has to monitor—it's a lot of work to monitor that stuff. We still have to work it out so that the vendor can get us information—any work-around or something other companies are doing some other places. I don't want to hire people or put a huge load on our people for pest control. We're not a pest control company. But we're trying to make

> sure we don't expose our guys to pesticides. (Researcher Interview, J. Giali, July 28, 2008)

He asked his vendor to research other environmentally preferable opportunities, to look at what's being done in other facilities. He was satisficed for now, but he considered the situation temporary. He takes a long-term perspective.

Cox chooses not to see barriers when it comes to sustainability any more than it would allow itself to see profitability as a barrier:

> I sense in your question that you are asking where could the hiccups be. What I want to tell you is, if I chose to recognize the hiccups, I would be focusing to the empty side of the cup and they would be more of a problem to resolve. It is a conscious view on my part to view the hiccups as an opportunity to tap into, instead. That's my invitation to everybody else. (Researcher Interview, F. Melki, September 7, 2008)

This attitude can be seen in other situations over which Cox does not have control. They contract with third parties to lay cable, a hugely important tool in the transmission of communications to customers.

> Third party companies manage the [cable]. We share a joint trench. It's not our contractor, not under [our control]. It's whomever the subdivision or property owner chooses. The costs are split among the communication companies [sharing the trench]. There are codes about depth and stuff, and they lay it….We don't yet have programs going regarding the "green" behavior of those companies, but it is on the agenda for future. (Researcher Interview, J. Giali, September 5, 2008)

And in situations in which the outside world has not come up with alternatives, Cox has the attitude that they will figure it out themselves. For example, at the time of these interviews, there was no easy way to recycle or reuse old cable casings. But they did not say, "We can't." It's always, "We're not ready":

> I see as a next step, reclamation as far as wire and electronics. We have an idea and a foundation, and we have gone to some businesses. We've had phone calls, meetings. They've shown us what they can do. We've been on site tours. We need to find out what are the best practices. We're thinking about cabling. What are you going to do with the casing that can't be recycled? We haven't figured it out, but we think we can…Same with

> screen monitors, and other things. But we're not [ready]. (Researcher Interview, J. Giali, September 5, 2008)

The key is that Cox sees sustainability as an ongoing challenge. The company does not approach partial fixes as "trade-offs," but as a temporary state while they continue to learn their way through a problem.

The learning model displayed under the leadership of the Assets Management Division is a reflection of the larger Cox Arizona culture. Collaborative, cross-team idea sharing and problem-solving was the norm throughout the Cox Enterprises family of businesses, and specifically within Cox Communication, such as this one:

> I think you can look at [this ability to collaborate] and say it's both—me and the company. The philosophy in the company is to look outside the box and come up with better solutions to problems. When you partner, it does improve things. Are there issues? You [research], you come to a consensus and move forward from there. What I've always been involved with, it's always been that way. If there's a better way to do things, let's investigate it and do it. Ideas for change pretty much come from everywhere. (Researcher Interview, J. Sanders, June 9, 2008)

Several themes, then, were broken down and rearranged to support relational construct, "Problem-solving through learning," as shown in Table 8, and visualized in Figure 7.

Table 8

Relational Construct, "Problem-solving through Learning" and Supporting Themes

Relational Construct	Supporting Themes
Problem-solving through learning	a. Systems thinking - Changing a complex system requires attention to multiple impact considerations b. Collective, collaborative process bringing in all effected stakeholders c. Empowerment tools—support, time, information, expertise, availability of assets to leverage. d. Open-minded—innovative - think outside the box. Ideas can come from anywhere. Turn the Rubik's cube until you find another way. e. Barriers are considered temporary—we are still learning our way through them.

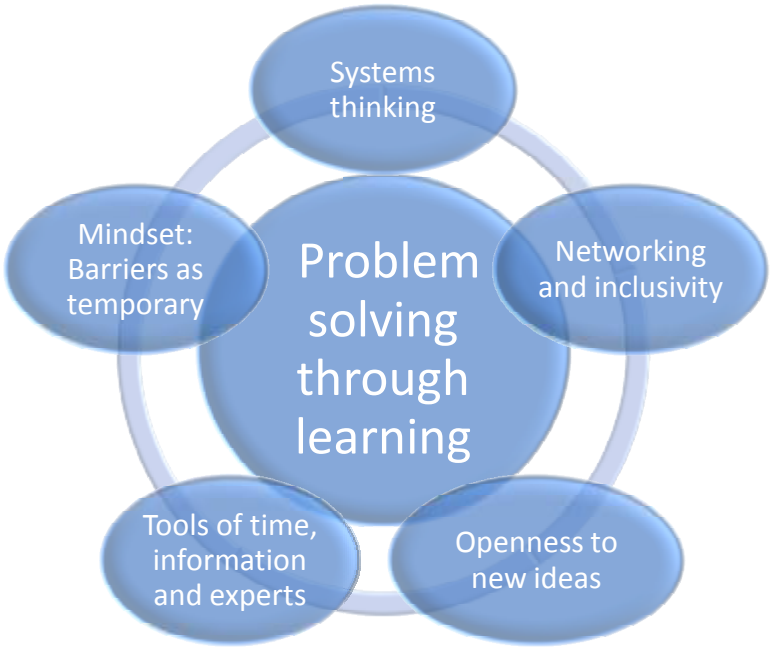

Figure 7. Visualizing the construct "Problem-solving through learning and its supporting themes."

Cross-Case Comparison: Learning Organizations

Cox and Seventh Generation share traits of a learning organization, including an intentionality about using a systems thinking perspective, bringing in stakeholders to work collaboratively to dismantle barriers to sustainability, and an open-minded, innovation-appreciating culture. However, stark differences exist. Seventh Generation's learning capacity was formally cultivated through the use of organizational development consultants with expertise in learning capacity, and through the adoption of an intensive program of training and tools designed to move the entire staff toward shared frames to facilitate communal sense-making. Almost all information was shared across the entire organization, and the entire staff was consulted on many decisions. The firm believed that the more diversity of views and inclusion, the better their decision-making might be: "I think sometimes the diversity of opinion and definition creates a more robust product" (Researcher Interview, M. Wolfe, November 14, 2008).

In this environment, individuals were encouraged, and ideas were welcome and could come from anywhere.

Cox shared the systems view—not as a consequence of intentionality, but rather, as a result of the leadership of a particular individual, Farid Melki, who brought that perspective to his job as Asset Management Division director and then diffused it out to his own staff. The staff member Melki put in charge of the sustainable procurement process, Jason Giali, adopted Melki's perspective, and after this study ended, was invited to bring his accomplishments to Cox Communication headquarters in Atlanta, where he further diffused it across the entire Cox culture.

Though Cox shared an open-minded approach to idea origination and a culture that appreciated and rewarded innovation, it did not share the democratic and broadly inclusive approach to problem-solving through learning. Its learning challenges were orchestrated from within the Assets Management Division. Information was gathered into that one office and shared strategically, bringing in only impacted stakeholders, technical experts, and where necessary, leadership. I don't mean to imply that Cox Arizona avoided collaboration or that the Asset Management Division made unilateral decisions. Outreach and buy-in are highly valued in the Cox culture, and all sustainability activities were undertaken with the involvement of impacted stakeholders at all levels. But these activities were not widely broadcast throughout the organization, and input was not solicited from unaffected employees or stakeholders just to diversify the input.

Despite the fact that Cox's learning process is organic to its management structure while Seventh Generation brought in consultants to teach structured learning tools, solutions emerged at both firms through a very similar process. Both firms carved out time; brought together

people, tools, and information to the process; and collaboratively hashed through creative alternatives. Formally implemented tools may have been more necessary at Seventh Generation, since their process was more democratic and inclusive, and also less focused. Conversely, Melki and his small team already shared a mental model and had the decision-making leadership role.

Power Tools to Support Learning

Kanter (1988) differentiated between social and structural conditions for innovation. Social conditions include leadership support; flexible opportunities to step out of the normal role; cross-fertilization inside the organization and with collaborative partners, clients, and stakeholders; and an open environment in which information can be readily shared. Such conditions include cultures that value diversity, believe in their people, and give leeway for getting out-of-the ordinary things done (Kanter, 1988). Structural conditions, on the other hand, are more pedantic but no less critical. They include elements such as allowed time, funding, expertise, and access to decision-makers (Bharadwaj & Menon, 2000). While the social conditions are well tended to in the literature, the structural preconditions frequently go unrecognized by management (Bharadwaj & Menon, 2000; Reynolds & Ablett, 1998). Organizations have unrealistic expectations of training and other change tools, and focus too little on infrastructure needs to support change. By way of example, infrastructure requirements were not recognized on Singer's visual (see Figure 5).

Two core concepts emerged from the analysis: "Embedding a sustainability criterion," and "Dismantling barriers through learning." However, work world experience suggested that subsuming the "Tools" theme within the core concept "Dismantling barriers through learning" was short-sighted. Despite the obvious supportive relationship between social and structural conditions for learning, experience and the literature both demonstrate that organizations talk the

talk, send members for training, hire consultants, implement change initiatives, and nevertheless achieve little or no movement unless the structural tools are also made available (Strebel, 1996).

Both Seventh Generation and Cox had the structural pieces in place. Seventh Generation set time aside for collaboration and development; e.g., Development Days, meetings, and retreats. Funding was made available for personal growth and professional training, expert consultants, travel for research, and other supporting activities. Cox, as well, had infrastructural support for learning. Ensconcing the authority for sustainability activities in the Asset Management Division provided access to decision-makers, and utilizing a systematized procedure within the procurement process meant that adequate staffing, time, and other resources were all available through the division. Both firms put their money behind learning, making necessary resources available.

The new core concept is named "Structural Power Tools" following Kanter's empowerment theory (Kanter, 1988), separate but equal to a learning culture. The visualization of the relationship between the core concepts and the remaining themes looks something like Figure 8.

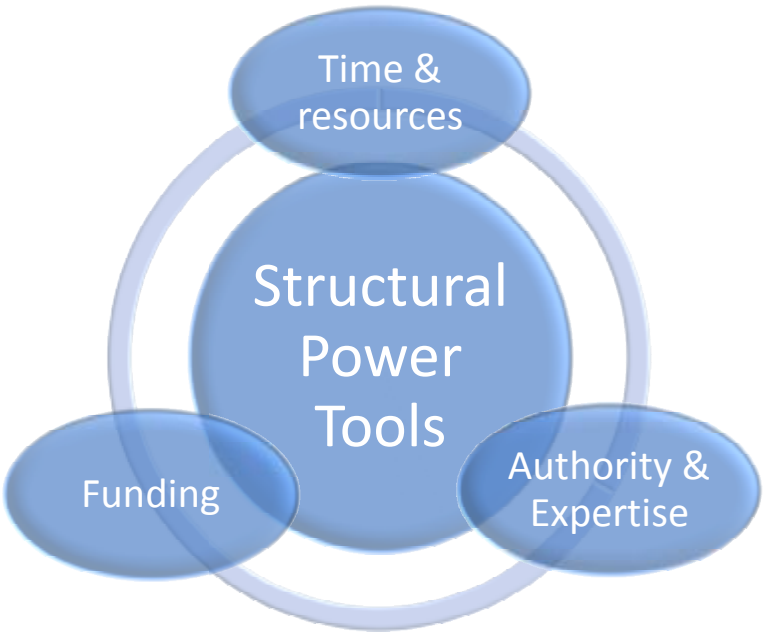

Figure 8. Core Concept Visual: Structural Power Tools.

CHAPTER 8

CONCLUSIONS

This research poses an interesting anomaly. Two firms that are polar opposites in organizational structure and culture nevertheless share a theoretical framework for sustainability success. This chapter addresses that anomaly, and the way in which the contrast highlights and improves emerging pattern visibility. The chapter also discusses the implications of the study findings for the existing sustainability literature.

Construct Parity: Fact Disparity

A multiple case study is beneficial because it sorts case-specific variables from those that are generalizable (Eisenhardt & Graebner, 2007). That principle is well demonstrated in this study, and further strengthened by the stark differences between the firms. The theoretical framework emerging from this study might not have been so clearly observable had the two firms been more similar in their structural and cultural make-up. Referred to by Patton as "maximum variation" sampling (Patton, 2003, pp. 234-235) and "polar sampling" by Eisenhardt (2007, p. 27) the stark differences mean that

> Any common patterns that emerge from such variation are of particular interest and value in capturing the core experiences and central, shared dimensions of a setting or phenomenon. (Patton, 2003, p. 235)

The analyses of Seventh Generation and Cox Arizona resulted in a nearly identical set of core constructs. However, the mobilization of these three constructs is governed by very different activity patterns endemic to the specific cultural and structural realities of each organization. Table 9 demonstrates the operationalization of the core constructs within each firm.

Table 9

Cross-Case Theme Comparison

Construct	Seventh Generation Themes	Cox Themes
Embedding Sustainability Criterion	a. Jeffrey Hollender's transformational leadership style	a. Strong mostly symbolic parent company leadership: "It's hard-coded into the founders' family"
	b. Hiring, training and setting job performance standards to embed a sustainability imperative within each employee to motivate cause-related activism	b. Coordinating sustainability efforts through a core business division with execution authority
	c. Keeping values at the center of everything by: o Aligning operations with mission and values o Aligning external relations with mission and values	c. Embedding a criterion for sustainability values through a core business process integrated across the value chain to ensure systematic and methodical attention
Organizational Learning to dismantle barriers	a. Systems thinking—use of Global Imperative frames	a. Systems thinking—Changing a complex system requires attention to multiple impact considerations
	b. Open, inclusive, democratic and collaborative, culture of cross-organizational and inter-organizational information-sharing	b. Collective, collaborative process bringing in directly-effected stakeholders to ensure solution's utility value
	c. Innovative culture	c. Open-minded—innovative—think outside the box. Ideas can come from anywhere. Turn the Rubik's cube until you find another way.
	d. No trade-offs, just a continuum.	d. Barriers are considered temporary, "hiccups." We are still learning our way through them

(table continues)

Construct	Seventh Generation Themes	Cox Themes
Providing Support "Power Tools"	a. Tools, time, support & other resources, such as shared frames, indices and measurement tools, experts, funds, to support problem-solving	a. Empowerment tools—support, time, information, funding, authority to act, expertise, availability of assets to leverage.

The organizations in this study are polar opposites in important ways. Seventh Generation under Jeffrey Hollender demonstrated the features of what has been called "clan culture," "full of shared values and common goals, an atmosphere of collectivity and mutual help, and an emphasis on empowerment and employee evolvement" (Yu & Wu, 2009, p. 28). Seventh Generation has a diffused power structure, a tradition of whole-organization knowledge sharing and decision-making, employees whose personal ideals match the mission-related ideologies of the firm, and a requirement that every employee be responsible for sustainability outcomes within their scope of work. By contrast, Cox Arizona is an example of an hierarchical culture: "The hierarchy culture has a clear organizational structure, standardized rules and procedures, strict control, and well defined responsibilities" (Yu & Wu, 2009, p. 28). Cox has a traditional top-down power structure with a strong regional leadership team, is far more siloed in their departmental functioning than Seventh Generation, shares information on a need-to-know basis, hires based on skills sets, and houses ultimate responsibility for sustainability activities within one division.

Sustainability Criterion

That the framework can be operationalized in different ways suggests that firms looking for a sustainability strategy may be creative about embedding a sustainability criterion in their own organizations so long as the following contextual elements are present: (a) Sustainability criterion must be embedded in a function with operational reach extending throughout the

organization and outward along the entire value chain; and (b) authorizing mechanisms must enable the responsible parties to carry out sustainability activities across their reach. The important question for a business is, "Where in this particular business is the lever with authority and reach?" That is likely to be a good place to embed.

Learning Approaches

Similarly, the distinctions in the two organizations' learning approaches demonstrate that a learning environment can be fitted to an organizational culture and does not need to take a cookie cutter approach. Whether the details of a sustainability project collaboration are widely known throughout an organization or kept from non-invested employees and partners until a later time may not always be important. What will be important will be: (a) information-sharing and collaboration with impacted stakeholders, (b) an open-minded approach to possible solutions that encourages outside-the-box thinking and creativity, and (c) a systems perspective that takes into account direct and indirect impacts.

Support Tools for Learning

An organization cannot expect to achieve even those sustainability results it is creative enough to dream, if it does not provide the supporting empowerment tools necessary for implementation. Necessary tools will be dependent upon the individual structure of the organization, but will at a minimum involve providing funds, time and space for pursuit of a sustainability agenda, whether the need is for staff, research and development, expert consultants, training, or other resources, at necessary levels.

Summary

Despite the many differences in operationalizing sustainability programs, the data strongly demonstrate the existence of all three factors, visualized in Figure 9, in both

organizations: (a) an embedded sustainability criterion that safeguards sustainability values in the face of competing values; (b) a vigorous learning environment that encourages creativity, collaboration, and out-of-the box problem-solving to dismantle barriers to sustainability, and does not see trade-offs or compromises as an acceptable outcome; and (c) a full suite of structural "empowerment tools" that facilitate follow-through.

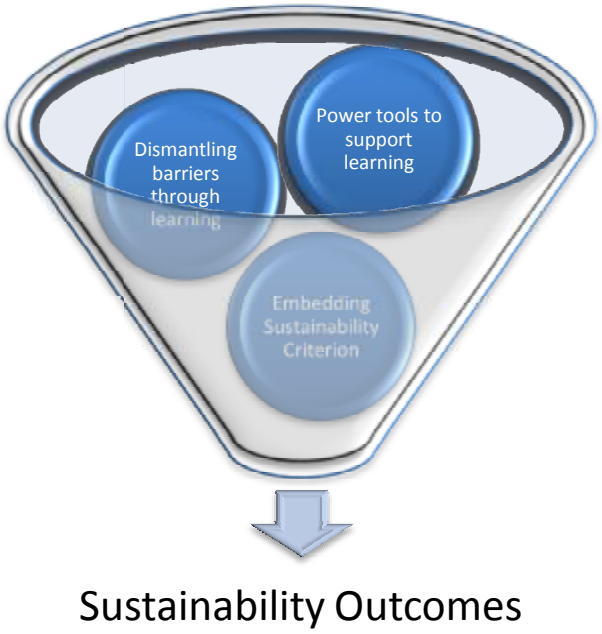

Figure 9. The Sustainability Trifecta.

Contributions to the Literature

This section contains a reflection on what may be an overly broad call in the literature for "embedded sustainability"; a challenge to the notion that a "culture of sustainability" is a precondition to a successful sustainability program; and finally, an affirmation for scholars who have said the emphasis on "the business case" belongs in literature on competitive advantage, not in the sustainability literature.

Bucking Convention: Streamlining "Embedded Sustainability"

The data from the Cox Arizona case suggest that the conventional wisdom on embedding sustainability broadly across many organizational operations may be unnecessary. Considering the transaction costs of sweeping change (Ostram, 2009), a simpler, more streamlined approach would undoubtedly be welcome.

Contemporary literature suggests that successful embedding requires attention to the multidimensional contexts in which social and economic activities are carried out (Boons & Howard-Grenville, 2009). The dimensions are identified as cognitive, structural, cultural, political, spatial, temporal, and relational. It is believed that all dimensions of embeddedness must be treated as functioning simultaneously, although not necessarily with the identical influence (Boons & Howard-Grenville). Consequently, many strategies offered in the literature to embed sustainability are ambitious in the ground they cover. For example, Laszlo and Zhexembayeva named 12 principles to guide embedded sustainability, including (a) maximizing sustainable value without compromising shareholder values, (b) meeting customer and stakeholder needs, (c) expanding sustainability activities through the entire value chain, (d) offering sustainability-based product differentiation, (e) integrating sustainability into the business core, (f) collaborating with stakeholders, (g) aiming toward transformational rather than transactional relationships, (h) cooperating with competitors for value-added opportunities, (i) enabling creative thinking, (j) unlearning conventional wisdom, (k) making sustainability everyone's job, and (l) building on local knowledge (Laszlo & Zhexembayeva, 2011). Other, slightly less broad strategies have been proposed by Haugh and Talwar, Bertels, Boon and Bass, and others, and have been detailed more completely in the literature review (Baas & Huisingh, 2008; Bertels et al., 2010; Haugh & Talwar, 2010).

The Cox Arizona case shows that a sustainability criterion need not be embedded in multiple functionalities to be successful. Instead, embedding sustainability in business function may be adequate, if the function is core and impacts choice-making across the entire organizational value chain. A sustainability criterion could be embedded through an accounting function, through a project approval process, through a facilities management process, through the office of a key executive (or even the boss's wife), if the process or person has the value chain reach and authority to carry out sustainability activities. How best to maximize an embedded sustainability criterion depends upon individual organizational structure and culture, and of course, must be accompanied by learning capacity and learning empowerment tools.

Bucking Convention: No Need for a Culture of Sustainability

Current research suggests that a culture of sustainability needs to be present for successful sustainability initiatives. Cox Arizona case data make it clear that sustainability achievement can come without a sustainability culture.

It is beyond the scope of this conversation to broadly review "corporate culture" in the organizational literature, but in a nutshell, corporate culture relates to the web of formal and informal norms, values, and beliefs as they are expressed through organizational myth, story, ritual, and symbol, and comes to be a shared framework for action, consciously or unconsciously (Bush & Middlewood, 2005; Morgan, 1996). The significant role of culture in hindering or fostering successful organizational innovation is also widely agreed upon (Linnenluecke & Griffiths, 2010).

Suggestions about what comprises a "culture of sustainability" are varied, running from something as simple as an organization in which environmental and social performances, in addition to financial performance, are important and in which those values are made explicit

(Eccles, Ioannou & Serafeim, 2012), to the much more comprehensive model that brings in people, strategy, structure, processes, and rewards to drive the culture of an organization towards sustainability (Galbraith, Downey & Kates, 2002).

The Cox Arizona data call into question whether a culture of sustainability is necessary or even important to positive sustainability outcomes. Although the Cox family founders' conservation ethic is a 125-year old cultural legend, the Arizona subsidiary's focus on sustainability was virtually non-existent until the Atlanta parent company announced the Cox Conserves program. Prior to Cox Conserves, Cox Arizona experienced occasional "lone ranger" projects run by individual employees within Cox, but there was no corporate ownership. Rather, there was toleration coupled with uneasiness about potential liabilities of self-help, and these programs were dismantled by the Asset Management Division immediately after it was vested with responsibility (Researcher Interview, J. Giali, September 7, 2008). During interviews at Cox, the idea of culture came up eight times, and it was mentioned many more times in Cox's collateral materials:

> It wasn't a huge culture stretch for us. We've been indoctrinated with this, sustainability is important. (Researcher Interview, A. Katsenas, September 7, 2008)

> While the Cox/Kennedy family has been the constant over that time, leaders have come and gone, but the culture imbedded by the family has endured. Our sustainability focus is just one example of that. (Researcher Email, S. Anable, July 2013)

However, self-identification is not synonymous with culture. Employees I spoke with were aware of a green push, but only with regard to the more visible projects:

> Didn't know much about [sustainability] until the last year or two, since Cox Conserves and the TWIG program [launched]…We hear about it. "Turning waste into growth." We receive emails about what's going on, like the covered parking lot with solar panels, the reusable mugs, the [biodegradable] Styrofoam cups in the cafeteria. [And the way you learn is] through emails, being in the cafeteria and seeing what's going on. A lot is pushed out by emails. But you also are here, and you see it every day… Or when I pull

> up web browser sometimes there'll be an announcement. (Researcher Interview, J. Dunn, September 7, 2008)

In spite of a minimal level of awareness, most Cox employees were not involved. Comparing Cox to Seventh Generation, where every employee has a personal responsibility to ensure sustainability, Cox employees are mostly detached from sustainability programs. The Assets Management Division head confirmed that a "culture of sustainability" is not present:

> Does John Doe, who works in the business group, does he think like Farid? What is the culture? Is that the culture at Cox? Is Farid a singular person, a lone ranger at Cox Communication? My answer to that is, today we are in development of that culture. That culture is not mature. I don't view that all my colleagues and the company are thinking in the same fashion. (Researcher Interview, F. Melki, September 2008)

Cox has been able to create an enormous sustainability impact without the need for an all-out organization-wide culture of sustainability. The implications of this achievement seem to be that an organization can move toward sustainable behavior first, and let the culture follow. Whether a true culture will follow is a subject ripe for further research.

Corporate culture—but not a culture of sustainability—did play a role in Cox's success. A fragment of text clarifies the cultural context in which the sustainability program was implemented. Rather than a "culture of sustainability," the culture of respect for leadership enabled Cox to move forward so efficiently and powerfully in such a short time frame:

> Ironically, it is the culture of Cox which has sustained and influenced the leadership for over 125 years. While the Cox/Kennedy family has been the constant over that time, leaders have come and gone, but the culture imbedded by the family has endured. Our sustainability focus is just one example of that. I have recently heard stories of the contents of James Cox's will and final testament which speaks of his passion for his employees and community, which he prioritized in order to best serve his customers...amazing guy. I…wanted to give you my gut reaction to your question about leadership vs. culture. I think that the tactics around sustainability come from the culture…which is bigger than the conservation focus. You are right that Arizona had the opportunity to implement the sustainability practices, but their success in doing so was based on a top down company culture. It would not have worked if you asked leaders and employees in a remote/field operation to embrace if you did not have the right culture...which means you have the right leaders and the right people to execute

> successfully because they believe in the company and support its well known beliefs and values. The culture is one of the top reasons people stay at Cox. (Subject record, Email, S. Anable, July, 2013)

Red Herring: The Business Case

Despite much discussion of the business case by subject firm, this study suggests that the idea of business case relevancy to sustainability outcomes is a red herring, adding weight to other current research demonstrating that "business case" approaches are inadequate.

In short, a business case is an argument that bringing a product or service to market will provide shareholder value (Boons & Lüdeke-Freund, 2012). That advantage derives from a competitive strategy around a business driver such as cost reduction, profit margin, risk reduction, reputation, brand value, or innovative technologies. The business case for sustainability provides a similar justification that responsible social and environmental behavior brings with it positive shareholder value (Steger et al., 2007).

In their book, *Embedded Sustainability: A Strategy for Market Leaders* (2011), Laszlo and Zhexembayeva link sustainability success to a competitive business strategy over and above the steps they suggest for embedding sustainability. Their formula includes the adoption of one of three competitive advantage strategies as part of an organization's embedded sustainability plan: Michael Porter's generic "positioning" strategies (Porter & Kramer, 2006); Kim and Mauborgne's new market-creating "blue ocean" strategy (Kim & Mauborgne, 2005); and Clayton Christenson's "disruptive innovation," which helps innovators push into the market significantly different versions of existing products or differing solutions to existing problems (Christensen & Overdorf, 2000). Triple bottom line theory also posits the requirement for a business case (Springett, 2003).

Despite multiple mentions of building a business case by employees of both Cox and Seventh Generation, there was little evidence in the data to suggest that the business case itself was a critical component in dismantling barriers to sustainable development for either firm. Rather, the business case occasionally served as a tool for warming leadership for project approval. In the following quote, an interviewee spoke about a large dollar energy project that she was able to get approved by leadership. This statement was in the context of the company being forward-looking. The infrastructure upgrade was to get the jump on tomorrow's technology, which she could see coming down the road.

> We just did a huge infrastructure upgrade with our servers. We brought in new technology that costs a lot more. I didn't really have to reconcile it. I was able to make a business case for it. I was able to take a technology and energy perspective. So they could hold the whole picture together. (Researcher Interview, N. Stoddard, November 14, 2008)

Similarly, another employee noted that making a business case helped him get the ear of management for project approval:

> It's not easy to sell the need [for change]…. Now I've [learned to] articulate those from a business standpoint. I think that's made things easier. (Researcher Interview, R. Doyle, November 14, 2008)

Despite being a good sales tool with management, in point of fact, Seventh Generation's sustainability mission was the primary consideration, not the business case:

> In bringing a business case [to the senior management team], the first thing to address is, "Why is this the right thing to do?" And then "How will we be differentiated?" First is mission, second is the strategic distinction, and the third is to bring third party experts to validate what I'm saying. (Researcher Interview, G. Embleton, November 14, 2008)

Similarly at Cox, the business case was part of the ritual of project approval:

> Anything that's going to burden the company's financial resources needs a business case and to be presented to leadership, to show the value-added, the return on investment. (Researcher Interview, F. Melki, September 7, 2008)

Despite articulated dedication to the business case concept, the decisions generated through the procurement process developed by Melki and Giali did not each require a business case. Purchasing and contract decisions were, of course, made with budgeting criteria in mind, but that did not preclude the inclusion of sustainability criteria in each contract decision, along with other essential criteria for whatever the purchase or service. If one way of reaching sustainability was too expensive, another path was sought. And at times, sustainability decisions were made despite expense.

The business case is part of the fact-based due diligence process a business goes through before committing resources to a new idea. It is also a tool that helps protect the viability of a business in the marketplace. Any company, whether or not committed to sustainability, must find a competitive advantage and develop a successful overall business model, articulated or not, if it hopes to survive (Porter, 2008). That model must of necessity involve products or services for which a business case can be made. But in terms of the hundreds of little decisions that go into running an operation, a business case does not and cannot be made for each of these. There may be no direct business case to be made for selecting a janitorial service because it uses safer, environmentally friendly products. There may only be an ethical case to be made that doing so is better for employee health and for the planet. A firm even may be willing to pay something additional for a service whose staff understand the art of cleaning without harsh chemicals. The economic balance to this extra cost may have to be found elsewhere.

As it happened, Seventh Generation's business strategy embraces sustainability; e.g., their value proposition is the safety and environmental neutrality of their products. Even though this strategy embodies the company mission and amounts to a promise to consumers that sourcing, production, and distribution decisions will be sustainable, Seventh Generation has not

figured out how to be profitable solely by figuring out a business case for each decision that carries through on that promise. Rather, Seventh Generation has tackled growth and profitability problems through a mix of financial and marketing strategies—e.g., take out loans, take the company public, lay off employees, develop a branded line of products and promote customer brand loyalty, build an online customer education portal, and so on.

This study demonstrates support for conclusions drawn in recent literature that relying upon the business case as a means of reaching firm sustainability is not working. However generically necessary for overall business well-being, the business case was not the critical component for dismantling sustainability barriers for the two firms under study. Rather, the actual keys were finding ways to systematically address sustainability issues across the business' value chain and utilizing and supporting learning processes to work through value conflicts and to innovate around barriers.

CHAPTER 9

STRENGTHS AND WEAKNESSES OF THE STUDY AND FUTURE RESEARCH CONSIDERATIONS

Chapter 9 addresses the strengths and weaknesses of this study. It also offers suggestions for future research to clarify the characteristics and placement of an effective and applicable "sustainability criterion."

Strengths and Limitations of the Study

This study adds to the body of empirical data that contextualizes complex sustainability problem-solving as it is situated within firm structure and culture. The strength of this study lies in the rich description of the inner workings of these two organizations, both "walking the walk" and both having discovered a successful combination of processes for dismantling barriers to sustainable development. The findings offer organizations seeking better sustainability outcomes some workable ideas and importantly, a reason to believe there is hope for success. The value of this study is enhanced by the rigor of the grounded theory method, which allowed the emerging constructs to be verified through constant comparison to the data. Constant comparison exposed weaknesses in certain unproven but popular notions in the literature, including the need for broadly embedding sustainability across many business functions, the need for a culture of sustainability, and the need to make a business case for sustainability. The cross-case comparison doubled the power of the case, due to the unique "polar sample," to test the solidity of the core constructs against the background of contextual information.

The limitations of this study are limitations attending the work of any neophyte. The learning must begin somewhere, and there is much learning in mistake-making. This work is the work of an individual researcher, as is the case with most dissertations. Thus, the analytic

conclusions of this study are the researcher's own, as are any mistakes that have been made. A collaborative coding process ensures a more balanced result with less likelihood that important ideas will be overlooked (Auerbach & Silverstein, 2003). This work would undoubtedly have been stronger with additional researchers' contributions, and outcomes might have been different. Finally, the analysis process, while rigorous, difficult, and methodical, cannot be separated from researcher bias. While any hint of doubt launched valiant efforts to check against the data and to consider alternative interpretations, there is no way to replicate or otherwise "check" the analytic conclusions I've reached.

Third, despite the fortuitous benefits of the polar sample, a two-case sample is a small sample. Organizations come in so many variations. The theoretical framework emerging from this study ought to be tested across a wider variety of organizations—and therefore provides an exciting future research opportunity.

Opportunities for Future Research

The most direct and pressing research opportunity is to further test the relationship between the three theoretical constructs emerging from this work; e.g. both firms have embedded a sustainability criterion that ensures the organizations act on sustainability concerns across their value chains; both organizations dismantle barriers through the use of learning processes; and both organizations support sustainability learning activities with a full suite of "structural power tools." Because these organizations operationalize these three constructs so uniquely, there are multiple benefits to gain from bringing more organizations into the study. If the trifecta holds across many firm structures and industry types, this framework would focus strategies for firms looking for a workable solution, and provide additional examples of how a sustainability criterion can be successfully embedded into different types of organizations. How an

organization chooses to embed a sustainability criterion will be dependent on the unique cultural and structural characteristics of the individual business.

Additionally, a beneficial line of inquiry drawing on "contingency fit" theory from organizational literature (Van de Ven & Drazin, 1984) could focus on identifying the right embedding structure for a particular firm or industry. The findings of this research also suggest additional research related to championship, pragmatic distinctions between guiding principles and guiding values, and corporate social responsibility.

Championship

Though the leadership styles in each firm were different, in both cases sustainability values had a local champion: Seventh Generation's Jeffrey Hollender and Cox's Farid Melki. A quick literature search of articles with the words "champion" in the title and "sustainability" or "sustainable development" anywhere in the article turned up 39 articles, only two of which directly discussed the role of champion in organizational sustainability management (Chadee, Wiesner & Roxas, 2011; Walley & Stubbs, 1999). By comparison, a stronger body of literature has identified the connection between the existence of a champion and innovation outcomes (see, e.g., Chakrabarti, 1974). Champions facilitate innovation's political and social acceptance within the organization (Howell, Shea & Higgins, 2005). Future research exploring the possibility that champions can play a similar role in the success of sustainability management may bear profitable fruit.

Pragmatism

The firms studied here were both motivated by leadership-imposed sustainability directives reflecting sustainability values, yet these directives were expressed in ideological terms at Seventh Generation, and in more instrumental terms at Cox Arizona. From a pragmatic

perspective, ideas should be testable (and tested) in practice (Kloppenberg, 1996). This perspective suggests a question for further research is whether material outcomes are impacted by a firm's choice to utilize guiding principles as potentially instrumental and measurable, or guiding values as potentially ideological and less verifiable.

Corporate Social Responsibility

Scholars interested in bringing the sustainability discussion under the umbrella of corporate social responsibility (see, e.g., Orlittzky, Siegel & Waldman, 2011) will also find useful points of departure in this research. In particular, CSR researchers are, like sustainability researchers, trying to understand the impact differences between peripheral and embedded CSR management approaches (Smith & Bartunek, 2013). Another research question raised by this research and particularly applicable both to CSR as a stakeholder-based phenomenon and to those who adopt a stakeholder theory of sustainable development, is how inclusive must CSR stakeholder involvement be, and at what point does a democratic process begin to impede action-taking?

Some Closing Thoughts

At the beginning of this document, I intended that this research prove to be beneficial to firms struggling to meet sustainability goals, invoking Easton, who said, "it is more important to be relevant and meaningful for contemporary urgent social problems than to be sophisticated in the tools of investigation" (Easton, 1966, p. 1052). The findings do offer contemporary organizations something relevant, and more importantly, useful to sustainability planning. The three construct "trifecta" relationship offers a reasonable path forward. A business might well succeed if it can find the right place inside its organization to embed its sustainability criterion: wherever a sustainability requirement placed in decision considerations would carry authority

across the entire value chain. That place might be, like at Cox Arizona, within the procurement office. It might be, for other cause-activated firms like Seventh Generation, posited within the employees. However, not all firms have centralized procurement. Not all firms are cause-activated. What of other firms? Those firms will have to ask which office or function within their organization touches their entire value chain in a meaningful way. As noted elsewhere, a firm has options, and it will need to carefully select the function with the best combination of reach and authority.

Once that function is identified, an organization may have some soul searching to do to prepare itself to wrestle with barriers as they arise. Questions will arise about how to enable learning within the organization, what training the organization will need, and what barriers to learning need to be removed. Fortunately, the idea of the learning organization is all the rage now, and great libraries of business books and many consultants are available to offer help to this end.

Finally—and this might be the most difficult part of all—to enable learning, an organization will need to carve out time, space, money, and resources to support learning, problem-solving, and innovation. In an economy where most businesses already run lean, this may seem like the biggest hurdle. But increasing an organization's learning capacity will no doubt create firm benefits far beyond breaking down the barriers to sustainability.

I invite any organization deciding to try this formula to contact me and share what you are doing, how you are doing it, and how well it is working. As Moore reminded us, "the doing" of sustainability is where the learning takes place (Moore, 2006). This is not just a dissertation. It part of the unfolding story of sustainability, as we collaborate to figure out what works.

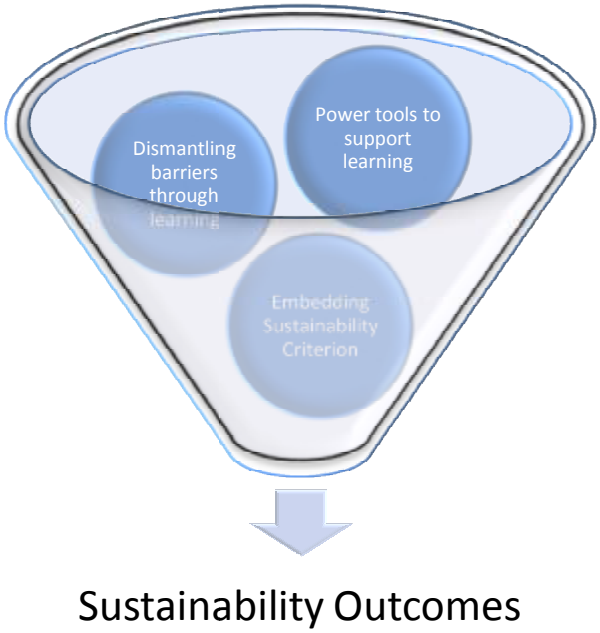

Figure 10. Visualizing the Trifecta.

APPENDIX A

RESEARCHER'S METHODS EXPLORATION

Goal	Ontologies	Epistemologies	Methodologies	Notes
Be in the environment where the phenomena occur; immerse myself	Naturalistic inquiry	Ethnography; grounded theory; social construction; phenomenology; heuristic inquiry	Field study; Observation; Interviews; Collect other sources of information	
Without preconceived notions of what will be found; awareness of biases that might affect observation or interpretation	Naturalistic inquiry	Grounded theory;	Reflexivity	
Values are contextually constructed in subtle and not-so-subtle ways; Scrutinize closely enough to unearth and understand as many contextual influences as possible; look for what is not said as well as what is said	Naturalistic inquiry	Social construction; ecological psychology; complexity & systems theories;	Case studies; Interviews; Reflective tools of analysis; Triangulation	Cf Moore's pragmatism with social construction, e.g. cities construct s.d. meaning & actions uniquely, culturally situated context; ecological psychology per Patton: goal directed behavior but only if unit the individual
Be able to test my interpretations of my data against meanings they hold for my informants; against actual sustainability outcomes	Naturalistic Inquiry Critical Realist	Relativist; pragmatist	Interpretive tools of analysis; Triangulated sources of data	Pragmatic evaluation: do the outcomes support the inferences?

APPENDIX B

INTERVIEW QUESTIONS

The following is a list of interview questions for guidance purposes only. These were asked in an open-ended grounded theory-style interview, and served mostly to help me stay on track with the research objectives:

Phase I Questions:

I. Sustainability Goals
   a) Overview of corporate sustainability goals
   b) What process was used to decide upon the company's sustainability goals?
   c) Was there disagreement at any point along the process about these goals (if so, please outline the arguments and tell me the outcome)

II. Implementation
   a) Talk about the decision-making process for sustainability decisions
   b) Who has authority
   c) What departments, persons and/or stakeholders are involved
   d) What decision processes are utilized
   e) Identify any problems or obstacles to implementing parts of sustainability goals, and explain the conflicts or issues, including who all was involved in problem-solving these issues?
   f) Discuss outcomes, if there have been outcomes, or where these issues stands now, if there have not yet been outcomes

Phase II Questions:

I. Processes—responsibility for innovating/processes for vetting

   a) Is there a method for identifying opportunities to integrate environmental features into firm activities?
   b) Do opportunities/ideas come from specialized sources, e.g. sustainability officer or expert, or do they come from anywhere/everywhere, e.g. the field, customers, other divisions, etc?
   c) How are these opportunities treated? Is there a process for how they get vetted and decisions get made?

II. General Questions- definitions/language choice/cultural presence

a) How does your organization describe/define sustainability?
b) What words do you use? In what contexts does it seem to come up most?
c) What is the history of sustainable behavior at your firm? How long has this been a concern? What brought it to the forefront for the firm?
d) How were you introduced to the concept at work?
e) Does your organization have a program of value education/inculcation about sustainability
f) Who (everyone, some people, some departments) receives this education?
g) If so, describe the extent of it and how it is communicated, by whom, when, etc., as thoroughly as you can.
h) Are sustainability issues aired specially (like you might have regularly scheduled meetings), or as part of other conversations?

III. Exploring stories of conflict between sustainability goals and other legitimate firm goals

a) What is (deep description of) the nature of the issue
b) Who and what did/will the problem impact?
c) What is the background history and context in which the issue arose?
d) Describe the perceived importance/impact of the issue relative to sustainability goal(s)
e) Describe the perceived importance/impact of the issue relative to other goal(s), e.g. economic, corporate, cultural, community, etc. What did this decision mean to/represent for involved or impacted parties?
f) Describe constraints, if any, relating to this problem, e.g. time, personnel, availability of information, resources, principles of behavior or action, etc.?
g) Describe the resources, if any, available to facilitate resolution of this problem, including people, time, physical, psychological, etc.
h) How did the issue move to the forefront of people's awareness?
i) Describe the first informal discussions about the issue and its progression to a more serious or formal discussion
j) Questions about the problem-solving or decision-making process
    a. At what point was the process initiated?
    b. Who, if anyone, was consulted about process, and in what order?
    c. What interests were consulted and how were they involved?
    d. What interests, if any, were not represented?
    e. Are there any other interests, in hindsight, who should have been involved? Why?
    f. Describe the features of the process
    g. Was it a standard process, or designed specifically around this issue?
    h. Who designed the process?
    i. Who was in charge of the process?
    j. Describe the formal aspects of it, if any
    k. Describe the informal aspects of the process

l. Describe the private, or behind-the-scenes aspects

k) What were the parties' expectations about process?
l) Describe the obstacles that arose in the course of problem-solving
m) What assertions were made?
n) What are the bases or assumptions underlying these assertions?
o) What private and public reactions were made to these assumptions?
p) Were the assumptions and assertions taken at face value or tested? If tested, how?
q) What conversations/negotiations were had both privately and publicly about these issues?
r) What expectations were there?
s) How did actualities match or differ from expectations?
t) What outcomes came from the process?
u) What steps were taken as a result of the process?
v) What parts of the issue remained unaddressed?
w) What proposals or ideas were generated to deal with the remainder?
x) What "relationship residue" remains from the decision-process?

IV. Relation back to Firm

a) Do these stories demonstrate firm sustainability values? Describe.
b) Do they demonstrate the same values that the participant-informants espouse? Explain.
c) Do they demonstrate a firm-wide sustainability ethic, or something less? If so, how?
d) What processes and structures for overcoming sustainability barriers are in evidence?
e) Do these processes favor or protect the ability to meet sustainability goals? If so in what ways?
f) Do the processes and decision-making structures demonstrate capacity for accommodating complexity, uncertainty, etc? If so, how?
g) How do these stories demonstrate the working of these processes and structures?

APPENDIX C

TOPIC SORT OF SEVENTH GENERATION RAW DATA

— employee 10 year anniversary sabbaticals
— employee benefits — employee benefit
— employee benefits carbon reduction assistance
— employee benefits cap & child care
— employee care & fun benefits
— employee conflict & trust issues
— employee empowerment — employee equity shares
— employee growth projects support & training
— employee hiring & training matters
— employee – incentive volunteer work
— employee incentive program ?
— employee input opportunity — employee input valued
— employee mediators — employee mobility
— employee owners
— employee performance planning tool
— employee problems — employee profit sharing
— employee protecting from pain
— employees articulate growth goals
— employees as owners
— employees attend and participate
— employees develop the operating principles
— employees expected to walk the walk
— employees - fast growing — employees feel heard
— employees - flexible work arrangements
— employees - looking at stress engagement assessment hr
— employees part of something larger
— employees see success & failure
— employees social selling process
— employees - the up and downside of risk-taking
— employee strategizing and prioritizing exercise
— employee traditional health benefits
— employee trust issues
— employee undertake growth projects
— employer - fulfilling work, training support, compensation & benefits, engagement
— employment of whole person
— encourage employees to walk the walk

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VITA

Sandra Price was born in Kansas City, Missouri, in 1956. She was educated in Overland Park, Kansas and received both a Bachelor's of Science degree in Communication studies and a Juris Doctorate, cum laude, from Arizona State University.

Ms. Price moved to Phoenix, Arizona, when she was 18 years of age and has spent the majority of her career as a public service professional, serving in both paid and volunteer roles in the public and non-profit sectors, working for or representing organizations as diverse as the Center Against Sexual Assault, The Nature Conservancy, the City of Tucson, Planned Parenthood of Central and Northern Arizona, the Avon Program at the O'Connor House.

Ms. Price acquired a strong desire to enter academia for the purpose of teaching public policy and advocacy. She has been teaching in the University and in the private sector since 2007. She also consults with nonprofits, particularly in the areas of capacity building, collaborative engagement, and board development. Prior to 2006, as a practicing lawyer, she represented clients at the state legislature and to state agencies, and also mediated and trained management professionals in conflict management, mediation, and Title VII.

Ms. Price entered the University of Missouri at Kansas City Interdisciplinary Ph.D. program to develop competencies in her discipline and as a researcher, and to leverage her years of experience back into the community through research and teaching. Upon completion of the Doctor of Philosophy degree, Ms. Price plans to continue teaching and consulting.