HOW ARE WE TO GO ON TOGETHER?

DIALOGUES ON THE SOCIAL CONSTRUCTION OF SUSTAINABILITY

Proefschrift ter verkrijging van de graad van doctor aan de Universiteit van Tilburg op gezag van de rector magnificus, prof.dr. Ph. Eijlander, in het openbaar te verdedigen ten overstaan van een door het college voor promoties aangewezen commissie in de Ruth First zaal van de Universiteit op dinsdag 8 juni 2010 om 14.15 uur door Mary Elizabeth Altomare Nattrass, geboren op 8 maart 1950 te Concord, New Hampshire, USA.

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The colleagues and practitioners who shared their stories and who continue to work with persistence and patience to make the new story a reality.

My husband Brian for his constant and gentle support, intellectual engagement, countless conversations and explorations into making sense, and glorious sense of humor that always shows up at just the right times.

DEDICATION

This work is dedicated to

Brian, my inspiration, partner, co-conspirator, and the companion of my heart;

Kristen and Staci, my earliest motivation for this journey;

Sarah, Kylee, and Sydney whose future is at stake;

All the pioneering practitioners it has been my privilege to know and serve; and

All the sustainability practitioners, who follow in their footsteps.

SUMMARY
(Samenvatting)

This qualitative study uses dialogue and story to explore how the concept of *sustainability* is moving from the margins to the mainstream of social discourse, becoming a framework for coordinating action, and serving as the foundation for an emerging field of practice throughout society globally. I suggest that the terms and forms being socially negotiated as sustainability can be viewed as a movement from one intelligibility, or story, to another.

Humanity's old story states that humanity is small and powerless compared to the wild, vast, and powerful forces of nature. While human actions may be able to inflict local or regional harm to natural systems, they lack the capacity to irreparably destroy major ecosystems, or significantly alter major global systems, such as the climate system (the threat of nuclear annihilation aside). The old story assumes that the Earth will continue to provide all of the resources that humanity requires while, at the same time, absorbing all of the waste that humanity produces—despite the seemingly insatiable demands of a rapidly growing and increasingly urban, industrialized, and consumerist global population.

In the new story, humanity has itself become a global force of nature, capable of rendering irreparable harm to the Earth's complex natural systems, including climate. The new story tells us we can no longer take for granted that the Earth will continue to sustain our species indefinitely into the future unless we actively exercise wisdom and develop more sustainable practices. Humanity must learn how to live in conscious balance with the rest of Earth's natural systems. This requires intentionally acting in a manner consistent with the understanding that human activities can potentially harm natural systems beyond recovery—resulting in the undermining of global civilization, even jeopardizing the continued survival of our species along with countless others.

After laying out my purpose and approach for this study in Chapter 1, I engage in a *dialogue with ideas*. I view this exploration as a dialogue because it represents an on-going conversation—one that I have been engaged in for the better part of my adult life. This exchange finds many expressions, which include multiple and diverse media, such as texts, movies, television, both popular and academic media, as well as the conversations I have had with sustainability pioneers and practitioners, including my husband and partner, Brian, and those that I have carried out internally with myself as I have reflected on what I have read, seen, heard and experienced. Because I am the common denominator weaving together the threads of this dialogue, this exploration is at once both philosophical and autobiographical.

In Chapter 2, I explore the diverse ways that humanity has ascribed meaning to *nature*—from nature as the pervasive, powerful yet distinct "other" or "not-human" world, to nature as the storehouse of resources and commodities existing solely for use and exploitation by us as the dominant species. I engage in this exploration because fundamentally sustainability is about relationships, about the connections we perceive, as well as the interconnections that exist whether we perceive them or not. The meaning, or meanings, we ascribe to nature is an expression of the relationships we believe to be true. What we believe to be true is ultimately the foundation for our actions and practices.

In Chapter 3, I examine how this relatively new idea, sustainability, grows out of an emerging understanding that human systems are in danger of becoming precariously out of balance with the natural systems that enable and support our life. In this dialogue, I draw upon diverse disciplines and perspectives including astronomy, biology, history, literature, philosophy, popular culture, psychology, and sociology, as well as my own reflections, questions, and conclusions. In seeking to understand what sustainability

means, I first explore what *un-sustainability* means, as so much of the sustainability discourse is more accurately about signs that humanity's current course is not sustainable, meaning that we may be on a collision course with our own nature-based life support systems. I posit that this un-sustainability story is a necessary stage in the movement from the dominant intelligibility that operates as if humanity and nature are separate and separable, to a new intelligibility in which the interdependence and interrelationship of humanity with the rest of nature is assumed.

As the ramifications of the un-sustainability story become more apparent within global society, increasing numbers of individuals and organizations are beginning to engage in sense-making conversations about what those implications mean to them. As they seek to make sense of this new story and act in accord with this new understanding, a new field of practice is emerging that requires distinct, new and often unfamiliar, skill sets and perspectives. Ultimately the hope is that this emerging field of practice is a transitional one, as the transformation into the new intelligibility means that sustainability practice becomes the new common sense or business-as-usual, rather than continuing as a set of new and distinct practices. During this transitional phase, sustainability practitioners represent the exception from business-as-usual; in the new intelligibility, they become the rule, as all practitioners will need to integrate sustainability perspectives into their work.

I define a *sustainability practitioner* in two specific ways, one predominantly internal to an organization, the other external, as follows:

1. Anyone who has specific formalized responsibility within an enterprise for any aspect of its sustainability education, strategies, practices and/or outcomes; and

2. Anyone who consults to or advises an organization's leaders and an organization's sustainability practitioners on sustainability education, strategies, practices and outcomes.

Based on my experience in the field, I suggest that three of the key tasks of an internal or external sustainability practitioner are to:

1. Help sustainability make sense within the organization's context;

2. Help the organization identify how to act in alignment with the sense that sustainability makes; and

3. Help the organization to integrate sustainability into its ongoing story, and by doing so, facilitate the evolution of both the sustainability story and the organization's own story.

In Chapters 4 through 7, I shift my dialogue with ideas to a *dialogue with practitioners* about the practice of sustainability. This conversation draws upon my experience with several complex and prominent organizations, each with a global reach: IKEA, Interface, Nike, Starbucks, and the United States Army. Although the focus of the dialogue in these chapters is practice, both *sense making* and *storytelling* are central to the conversation, as well as to the skill set of the practitioner. In other words, sense making and storytelling are aspects of sustainability practice. We make sense of our world through a combination of stories and actions. The stories we tell make sense of the actions we take, and our actions confirm, validate, and make sense of our stories. In essence, a skilled sustainability practitioner is a conscious storyteller who helps others in his/her organization see the intelligence of the new story in terms and forms that make sense within the organization's context. Having established the foregoing, I then explore three ways that organizations are making sense of sustainability.

In Chapter 4, I look at the power of storytelling. As we seek to understand the world and our place and relationships within it through a sustainability lens, the very telling of our process of exploration contributes to the formation of the new intelligibility. Sustainability practitioners make liberal use of stories to describe the implications of un-sustainability, to demonstrate the advantages of a more sustainable approach, and to recount the success and processes of their own or other organizations engaged in the same inquiry. Ultimately, the sustainability practitioner also helps to weave the sustainability story into the organization's story, which normalizes and validates this new way of coordinating and conducting organizational activities.

In Chapter 5, I examine how we can use systems thinking to draw new maps, so we can *see*, i.e., perceive and understand, and help others to see, how the organization is interdependent and interconnected with multiple other systems, human-created and natural. The very act of making explicit the relationships and interconnections that were previously outside the organization's frame of reference provides orienting cues for what types of actions can and should be taken as well as who needs to take them. This practice connects the abstract idea of sustainability to the organization's field of activity— thus making sustainability-oriented action more tangible and intelligible. This process is frequently referred to in the world of commerce as *making the business case* for sustainability, i.e., showing its relevance in a world where relevance is measured by financial profit and loss.

In Chapter 6, I look at the importance of getting into action as a fundamental means of creating and validating the reality of sustainability in practice. Unless we enact the sustainability story it remains in the realm of fantasy. Acting in accord with the assumptions of interdependence and interrelatedness gives the new intelligibility form, shape, and reality. Each sustainability-based action that each organization takes makes the meaning of

sustainability more intelligible. The results of these actions become part of the story that practitioners tell. The telling of the story encourages further action.

In Chapter 7, I complete my dialogue with practitioners by outlining specific tools and describing specific processes that practitioners can use to help their organizations move in a more sustainable direction.

In Chapter 8, I summarize the major points and conclusions of this study. Ultimately, I consider the possibility that the transformation from the current dominant intelligibility to a sustainability-based story signifies a fundamental evolutionary challenge and shift for our species. Helping to socially negotiate the new terms and forms of this shift is, at heart, what today's sustainability practitioners are tasked to carry out.

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INTRODUCTION AND OVERVIEW

Truth, naked and cold, had been turned away from every door in the village. Her nakedness frightened the people. When Parable found her she was huddled in a corner, shivering and hungry. Taking pity on her, Parable gathered her up and took her home. There, she dressed Truth in story, warmed her and sent her out again. Clothed in story, Truth knocked again at the villagers' doors and was readily welcomed into the people's houses. They invited her to eat at their table and warm herself by their fire.

Jewish Teaching Story retold by Annette Simmons
The Story Factor (2001, p. 27)

It's all a question of story. We are in trouble just now because we are in-between stories. The Old Story—the account of how the world came to be and how we fit into it—sustained us for a long time. It shaped our emotional attitudes, provided us with life purpose, energized action, consecrated suffering, integrated knowledge, and guided education. We awoke in the morning and knew where we were. We could answer the questions of our children.

But now it is no longer functioning properly, and we have not yet learned the New Story.

Wendell Berry
"The New Story" (1985/86, p. 1)

Pi Patel: "So, you don't like my story?"

Mr. Okamoto: "No, we liked it very much. Didn't we, Atsuro? We will remember it for a long long time."

Mr. Chiba: We will.

[Silence]

Mr. Okamoto: "But for the purposes of our investigation, we would like to know what really happened."

Pi Patel: "What really happened?"

Mr. Okamoto: "Yes."

Pi Patel: "So you want another story?"

Mr. Okamoto: "Uhhh…no. We would like to know what really happened."

Pi Patel: "Doesn't the telling of something always become a story?"

Mr. Okamoto: "Uhhh…perhaps in English. In Japanese a story would have an element of invention in it. We don't want any invention. We want the 'straight facts,' as you say in English."

Pi Patel: "Isn't telling about something----using words, English or Japanese---already something of an invention? Isn't just looking upon this world already something of an invention?"

"Uhh…"

Pi Patel: "The world isn't just the way it is. It is how we understand it, no? And in understanding something, we bring something to it, no? Doesn't that make life a story?"

Yann Martel
Life of Pi (2001, pp. 301-02)

A culture cannot evolve without honest, powerful storytelling.

Robert McKee
Story: Substance, Structure, Style, and Principles of Screenwriting (1997, p. 2)

THE PURPOSE OF THIS STUDY

In 1975 when I was a young mother of two children—one two years old, the other newly born—I read a book entitled: *The Limits to Growth* (Meadows, Meadows, Randers and Behrens, 1972). The book reported the results of a

study commissioned in 1971 by the Club of Rome, an international group of businessmen, scientists, and statesmen. The study was conducted by a group of researchers at the Massachusetts Institute of Technology to investigate the long-term causes and consequences of trends in population growth, food production, resource consumption, industrial capital and pollution using a computer model called World3. The purpose of the model was to imagine different stories of the future by projecting possible pathways the world might take based on then-current facts and informed guesses about the future. Fundamentally the book came to three conclusions:

1. If the then present growth trends in world population, industrialization, pollution, food production, and resource depletion continued unchanged, the limits to growth on this planet would be reached sometime within the next 100 years (around 2075). The most probable result would be a sudden and uncontrollable decline in both population and industrial capacity.

2. It was possible to alter these growth trends and to establish a condition of ecological and economic stability that would be sustainable far into the future. The state of global equilibrium could be designed so that the basic material needs of each person on earth could be satisfied and each person could have an equal opportunity to realize his or her individual human potential.

3. If the world's people decided to work toward this second outcome rather than the first one, the sooner we began working to attain it, the greater would be our chances of success. (Meadows et al., 1972)

At 25 with two young daughters for whom I desired only the best future, this version of the future was a new, and not a very welcome story. In fact, it terrified me. Although it was not a story I wanted to believe, I decided at that

time that if there were even a chance it might be true, I needed to do everything within my power to understand this threat to my children's future and to change it. Looking back from the perspective of more than 30 years later, I can see that this has fundamentally become my life story: the quest to understand and to help others understand what story we are writing together so that we can consciously choose to create together the story that reflects our highest aspirations and that serves the greatest good. This quest took me back to school to study anthropology and international relations; and then to work in academia and research, particularly in third world social and environmental issues and the resolution of international conflict.

Then in 1992, the United Nations Conference on Environment and Development (UNCED)—also known as the Earth Summit—was held in Rio de Janeiro, Brazil. By this time, I was 42 and my daughters were 19 and 17 respectively. In the intervening years I had completed a B.A. in cultural anthropology, an M.A. in international relations, served as an Executive Administrator of the Duke University Center for International Development Research, helped coordinate a groundbreaking commission on Central American Recovery and Development, done studies for the U.S. Agency for International Development and the World Bank, and moved to the Washington, D. C. area to work with an organization that helped non-profit organizations develop their capacity to carry out their important work.

For me at that time, *The Earth Summit* was an extraordinary meeting with respect to the scope of its concerns and the number and level of the participants. It was the largest meeting of world leaders held up to that time. Fundamentally the Summit concluded that nothing less than a transformation of global behavior would bring about the changes needed to avoid environmental and social disaster. I was relieved, elated, and hopeful that the issues that I had felt for so long deserved greater global attention were indeed receiving that attention. It was clear that global society had not made

significant progress since 1975 when I read *The Limits to Growth*. If the story had changed, it had not changed for the better. Perhaps now, I thought, the tide would shift.

In 1993 I met the man who would become my husband, Brian Nattrass, who through his own life's story had chosen a similar quest. At the time we met, he was the Chairman and CEO of Earth Day International, the international coordinating organization for the Earth Day movement, and I had been advising the organizations that made up Earth Day USA. Shortly after we met, Brian had been invited by Maurice Strong, who had served as the Secretary General of the 1992 Earth Summit, to attend the inaugural meeting of an organization called *The Earth Council* that was being set up to mobilize and support a global network committed to achieving the goals and initiatives that had resulted from Earth Summit. The meeting, held in San Jose, Costa Rica, included presentations from some of the world's leading scientists about the state of the global environment and their "plausible stories" or projections for the future. As he listened to these reports, Brian, whose background was in law and business, suddenly felt a tightening in his chest, as if a band had wrapped around him and was squeezing the life out of him. At first he feared he might be experiencing a heart attack, but then came to realize that somehow he had viscerally let in a new story. What the scientists were essentially saying was that if current trends were to continue, there would be dramatic changes in global ecosystems that could result in massive suffering and death for countless millions, even billions of people.

Brian's daughter, Sarah, was not yet five years old. He tells the story of how, even though he was aware of global environmental problems from his role as CEO of Earth Day, it was at this meeting of the Earth Council in Costa Rica in 1993 that he really felt the urgency, that he really understood that "the old story wasn't functioning properly," as Wendell Berry (1985/86) suggests, and that we needed as a species, and he needed as an individual, to understand

how to create a new story. From those vital moments on, he knew he had a conscious choice to make: he could leave the meeting and pretend that he still believed the old story—go home and, as he explains it, "go down first class on the Titanic," or he could devote the rest of his life to understanding why the old story isn't functioning properly and how we could help create an enlivening New Story, individually and as members of the complex organizations through which we organize our social activities.

Since we met in 1993, Brian and I have been on this quest together. We have studied sustainability, systems thinking, organizational change, communication, and how human systems learn and change. We worked together on the research and writing of his Ph.D. dissertation on corporate learning and innovation for sustainability. We have written three books together on the subject and are currently working on a fourth. We have worked with numerous organizations including Fortune 500 corporations, non-governmental organizations (NGOs), municipalities, and large institutional systems such as the United States Army and NASA (the U.S. National Aeronautics and Space Administration). We have taught in elementary and secondary schools, colleges, universities, and business schools. We have briefed business leaders and military leaders about sustainability. We have given countless presentations and talks. We have witnessed some breakthroughs, and we have come to live with the question: why is it so hard for people to see and take in the sustainability story so that we can act together to write a future story that is different than the one I read in 1975 in *The Limits to Growth*, and Brian heard in 1993 in Costa Rica?

Although the urgency seemed clear to me in 1975 and was reinforced in 1992; and it had become powerfully and viscerally evident to Brian in 1993; we clearly still belonged to a relatively small group of people globally who even seemed to be paying attention to this "sustainability story." Why, we wondered, was the urgency not more evident to everyone else? Why couldn't

everyone "see" this reality? Despite the attention drawn to society's need to take a different direction, very little real progress seemed evident.

We were certainly not alone in our concern. Years after the Earth Summit, Maurice Strong (2000) reflected in his autobiography:

> When the conference was over, [the world leaders] all flew home to confront their own peoples and their own problems, and I went back to my own business. The Halifax G-7 conference came and went, the fiftieth anniversary of the United Nations, Rio+5, more G-7 meetings, as the years passed. The Kyoto meeting on global warming and climate change ended with an agreement, but a feeble one. I watched and waited. On the substantive issues, the determination that Rio had helped express seemed to slip away, the momentum dissipating. On the really tough issues there was very little progress at all.[1]

Why—with evidence all around us, and the future of our children and grandchildren at stake—was there so little progress, so little change, still so little awareness and action? Perhaps we were not telling the story clearly enough. When we talked to business, for example, business leaders seemed to want a different story—one called "the business case for sustainability." "*We don't want any invention. We want the 'straight facts,'*" as Mr. Okamotu explains in the Life of Pi. Similarly, business leaders wanted to know with some certainty how thinking about and acting on this thing called "*sustainability*" would benefit the bottom line, would add to their profits, would fit into their story.

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[1]Strong, M. (2000). *Where on Earth Are We Going?* Toronto, Canada: Alfred A. Knopf, p. 4.

At times I wanted to scream out: "don't you understand, we should really be asking what the sustainability case is for business!" Nonetheless, Brian and I worked diligently to craft the "sustainability story" in a way that at least, like Truth clothed in story, would get us in the door and an invitation to sit at the table. Still it seemed like inordinately hard work when to us the need for urgent attention seemed obvious, at least if global society was going to write the story of a vibrant, prosperous, and healthy future—including ensuring the sustainability of those businesses that insisted they just didn't see the business case. What was it that they needed? What story would make sense to them?

> I know what you want. You want a story that won't surprise you. That will confirm what you already know. That won't make you see higher or further or differently. You want a flat story. An immobile story. You want dry, yeastless factuality.
>
> Pi Patel in *Life of Pi* (Martel, 2001, p. 302)

In 2003, a decade after Brian and I chose to undertake this quest together, I wanted to figure out how we could tell a better story, or perhaps how to tell the story better, so that we could better facilitate the adoption of more sustainable practices in more organizations. I wanted to understand how we could move from the *Old Story* Wendell Berry refers to that has helped create an un-sustainable direction for global society, to the *New Story* that Berry suggests is not quite formed yet. I wanted to understand better how we come to create the stories we live by; what motivates us to believe in the stories we believe in—even if they no longer serve us—and what keeps us from accepting or creating a new story—even when evidence is mounting that we urgently need to do so. I wanted to make sense of what we were experiencing in practice: some hopeful pockets of movement in the midst of massive resistance to change. I intuitively felt that we were part of a greater social conversation, and I wanted to explore how to be more effective in engaging

this conversation and inviting more powerful storytelling. I wanted to test and build on this intuitive sense. I wanted to reflect upon everything we had learned, engage in some new conversations to expand and refine our thinking and practice, and ultimately share insights that could be helpful for others as it is clear that we need to create this *New Story* together. This is the journey that led me to this dissertation. This document tells the story of this journey.

APPROACH TO AND ORGANIZATION OF THIS STUDY

Since I began this journey of exploration, what I call *dialogues on the social construction of sustainability*, I have seen a shift take place in social discourse with respect to sustainability. In 2003 I was experiencing some frustration that progress, although taking place, seemed exceedingly slow and often blocked. By 2006, I began to see signs that the sustainability discourse was beginning to move from the margins of social discourse into the mainstream. In 2009, not only are powerful sustainability stories emerging across all sectors of society, the term "sustainability" has become common parlance, part of the lexicon of popular culture. It is amazing to witness what has happened over the course of the six years—from 2003 to 2009—that I have been thinking about and working on the research, practice, and writing that is woven into this dissertation. My approach throughout the research, practice, and writing synthesized in this document has been to engage in a multidimensional dialogue, a set of conversations with ideas, experience, and practitioners. The conclusions and insights I reach and share emerge from these conversations. This dialogue is woven with two inter-related threads:

1. A dialogue with *ideas* based on:
    a. Questions that arise from my continuing experience;
    b. Various texts that I explored or conversations in which I engaged;
    c. The understandings and preconceptions I bring to the inquiry; and
    d. My reflections upon all of these.

In particular, in this dialogue with ideas, I explore two key areas: first, how we make sense of and understand the human-nature relationship (Chapter 2) and how we make sense of, and understand, *sustainability (*Chapter 3). I draw upon diverse disciplines including astronomy, biology, history, literature, philosophy, popular culture, psychology, and sociology, to name a few.

2. A dialogue with practitioners about *practice* based on:

    a. My own knowledge and experience gained through practice and my exploration of various texts;
    b. The experience of others gained through their practice and accessed through case studies, stories, and conversations; and
    c. My reflections upon the stories insights, ideas, questions, and conclusions that emerge from these experiences of the world.

This conversation with practitioners takes place in Chapters 4 through 7 and draws upon my experience with three prominent organizations: Nike, Inc., Starbucks Coffee Company, and the United States Army. In Chapter 4, I look at the power of using stories, because, as Pi Patel in the *Life of Pi* suggests, the world isn't just the way it is, it is how we understand it, and the very telling of something becomes a story. As we seek to understand the world and our place and relationships within it through a sustainability lens, the very telling of it contributes to the *New Story*. In Chapter 5, I look at how we think in systems, as this holistic and integrative perspective is fundamental to understanding sustainability. In Chapter 6, I look at the importance of action in creating the reality of sustainability. It is through action that we confirm and perpetuate our stories. In Chapter 7, I complete my dialogue with practitioners about practice by outlining specific tools and describing specific processes that Brian and I have found valuable in helping organizations make sense of sustainability in their institutional contexts. Finally, in Chapter 8 I

return once again the question that weaves this dissertation together: How are we to go on together? I consider the transition from the intelligibility that guides our actions today to a new intelligibility that will guide our actions in the future as an evolutionary challenge, based on the premise that the old intelligibility we need to transform is placing the evolutionary prospects of humanity in peril.

My approach throughout this document is fundamentally as a storyteller. The story I tell is my own story, and it is more than that. The storyteller, the story, and the social context from which they emerge are intertwined, interrelated, and interdependent. Throughout this study, I draw upon and use stories drawn from my own experience and stories told by others as a way to engage in a broad-ranging conversation about sustainability and about how we create our world together. The story is far from written. It is under construction, and I invite you, the reader, to join in its creation.

RESEARCH DESIGN AND METHODOLOGY

This qualitative research study uses dialogue and story to explore how the concept and practice of *sustainability* is emerging through a process of multiple and diverse social conversations about changing conditions on the planet, how these are affected by and affect society, and how we can make sense of what this means for the actions we take in the world. The focus of this study is on the social creation of meaning around the term *sustainability* as a way to:

1. Come to terms with the social and ecological interdependence that albeit often invisible to us, characterizes, constrains, enables, and defines life on Earth;

2. Coordinate the complexity of how we carry on the activities of life together on this planet in such a way that we increase, rather than decrease, the possibilities and options for life, particularly human life, to continue and thrive on Earth; and

3. Explore how we can as practitioners help the institutions in and with which we work to more effectively integrate sustainability into their stories of why they exist, what they stand for, how they operate, and what they contribute to the world.

My research design centers on what I call an expanded practice of dialogue wherein the conversation takes place across multiple dimensions and media, and it also takes place within myself across time. A common theme in the dynamics of this dialogue is a wide-ranging search for stories. I view story as a way we make sense of the world we experience. "Doesn't the telling of something always become a story?" asks Pi Patel (Martel, 2001, p. 302). By exploring various stories from diverse perspectives—the many ways of telling something about how we understand our place in the world, our relationship with "nature," our relationship with each other, our ways of describing "reality" or how the world works and how we work within it—I am not only in dialogue across time and space, I also link these diverse stories in a story about how I am making sense of these things.

I draw stories from multiple media. Some of the stories come from academic research and theory building in different disciplines. Other stories come from current events. Some are historical narratives. Some of the stories come from practice, working with organizations to understand how to use story to make sense of what actions they should take in the world. Some of the stories come from interviews I conducted with more than 100 leaders and practitioners in organizations that are working on sustainability in numerous organizations including the three organizations I focus on: Nike, Inc., Starbucks

Coffee Company, and the U. S. Army. The common factor in all of these stories is that the dialogue flows through my own story and my own sense-making endeavor. Because of this, a key element of the research design is a process of reflection, a recurrence of my own voice as significant to the dialogue.

This approach is consistent with Denzin and Lincoln's (1994) assertion that qualitative research has a multi-method focus that involves an interpretive, naturalistic approach to its subject matter. "This means that qualitative researchers study things in their natural settings, attempting to make sense of, or interpret, phenomena in terms of the meanings people bring to them…qualitative researchers deploy a wide range of interconnected methods, hoping always to get a better fix on the subject matter at hand" (p. 2). I am very much aware that this "better fix on the subject matter at hand" runs through the lens of my interpretation, the meaning I bring to it, and thus must always have a subjective element to it. The telling of it becomes another story.

As a methodological approach, qualitative research serves the intention of my study, as my intention is to make sense of the meaning that society is attributing to *sustainability* as an intelligible guide to how we live and act together in the 21st Century. Patton's (1990) description of the themes of qualitative inquiry reinforce why I have chosen qualitative over quantitative inquiry:

1. Naturalistic inquiry studies real-world situations as they unfold naturally;
2. Inductive analysis provides a process of discovery by exploring open questions rather than testing theoretically derived hypotheses;
3. A holistic perspective views the whole phenomenon under study as a complex system that is more than and different from the sum of its parts;

4. Thick description seeks to capture people's personal perspectives and experiences;
5. Personal contact and insight allows the researcher to get as close as possible to the phenomenon under study;
6. Context sensitivity places the inquiry in a social, historical and temporal context;
7. Empathetic neutrality recognizes that complete objectivity is impossible; and
8. Design flexibility allows adaptation as the inquiry produces new understanding or insight. (Adapted from Patton, 1990)

The starting point for qualitative research is the biographically situated researcher, who enters the research process from within an interpretive community that has its own way of making sense of the world, its own historical research tradition and points of view, and often its own language (Denzin and Lincoln, 1994). The research and the researcher are inseparable. The qualitative researcher operates from principles that combine beliefs about ontology (what exists in a given domain), epistemology (what constitutes knowledge—how we know what we know), and methodology (the approach and methods we use to gain and validate knowledge). "These beliefs shape how the qualitative researcher sees the world and acts in it" (Denzin and Lincoln, 1994, p. 13). How I, as the researcher, experience the "other" and analyze and interpret data—in the case of this study, multiple stories—is shaped and constrained by my beliefs—the stories through which I make sense of the world. I, as the researcher, am the primary instrument for data collection, interpretation and analysis in qualitative research. This means that as a researcher, my values, preconceptions, knowledge and ignorance of the subject matter, and experience provide insight, and also bias, as I approach the research and make my interpretations. I explore my role as researcher and active participant in the dialogic process in more detail as I engage in my dialogue with ideas.

Over the course of this study I celebrate my role as researcher, story-creator, storyteller, participant in the construction of meaning, practitioner, consultant, teacher, explorer, and active member of multiple communities of belief and practice that have a stake in whether we create a sustainable or an unsustainable future. I realize that this approach also frames and bounds the specific questions I ask, the data and stories I seek, and the interpretations, reflections, insights and conclusions I reach and share.

I feel it is important to say something at this point about the nature of empirical research and its place in this study. In empirical research we base our conclusions on data we observe or experience directly or indirectly. Two empirical research approaches are common in qualitative research: case studies, which provide an in-depth examination of a specific situation to gain a greater understanding of the phenomena under consideration; and action research through which research ideas are developed and tested through an iterative process of action/experimentation, reflection, validation, action, etc. The research for this dissertation combines both approaches. I look at specific cases by using stories from the organizations I include in this study to illustrate or explore certain points. At the same time, as my research and inquiry have evolved over the past six years I have put ideas that have emerged from this inquiry into practice. This has helped me further develop and test those ideas and has influenced my approach to and interaction with the people and organizations with which I interact, including those featured in this document.

I have not conducted this action research as an experiment in linear causation such that I applied a given idea to cause or not cause a pre-defined outcome. Rather I have used insights drawn from this research process to encourage practitioners with whom I worked to consider new perspectives, approaches or direction in their practice. Mine was generally one of several voices in the conversation, and we were engaged in the act of learning and co-

creating solutions together. The entire process of the research-action-reflection endeavor has been an empirical dance focused on developing insights into how to facilitate the movement of organizations to more sustainable practices and, whenever possible, applying those insights. The causal pathway of insight to action is often ambiguous in this approach, but in the case of the stories I tell in Chapters 4 through 7, the results have been unambiguous. Both approaches to empirical research—case examples and action research—have been vital to my ongoing learning and reflections in this research process. I call upon both approaches in the stories I tell in my dialogue with practitioners.

CHAPTER 2

DIALOGUE WITH IDEAS ABOUT THE HUMAN-NATURE RELATIONSHIP

In the first book I read on social construction, *An Invitation to Social Construction*, Ken Gergen (1999) poses the question to the reader: "…how are we—author and reader—to go on together?"(p. vii).[2] In the context of the book, the author obviously brings a great deal to the conversation. Yet, as an author myself, I know full well that it is a conversation; and, as Gergen (1999) reminds us, it is the reader who must breathe life into the words.

This particular question—how are we to go on together—has emerged as a central theme of my research and practice; for this is, indeed, the larger question that I pose: how are we to go on together, not just in our relationship as author and reader, where, "if we are successful…perhaps new paths will open" (p. vii),[3] but as a species organized into countless communities of meaning, yet sharing one Home Planet, and consciously or not, constructing a shared future through how we relate not only to one another, but to the rest of the natural world out of which we arise and on which we totally depend. Gergen (1999) echoes this core concern of my inquiry: "Perhaps the major challenge for the twenty-first century is how we shall manage to *live together* on the globe" (p. 149).[4]

In this dialogue with ideas, I use the question—how are we to go on together—in two ways: as a compass to lend direction to which conversational pathways I explore, and as a touchstone to gauge whether a given pathway opens new possibilities and insights into how the question might be answered.

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[2]Gergen, K. (1999). *Invitation to Social Construction*. London: Sage, p. vii.
[3]Gergen (1999), p. vii.
[4]Gergen (1999), p. 149.

I approach my explorations as a dialogue. As Bohm (1996) suggests, dialogue can be understood as a "stream of meaning,"(p. 6)[5] in this case, a stream that flows through (1) various texts and conversations, (2) the understandings and preconceptions I bring to the inquiry, and (3) my reflections upon both of these. Engagement with ideas from this perspective requires entering into a *dialogic relationship* with the texts I choose, recognizing that the very questions I pose and the texts I choose are prejudiced from the outset. Gadamer (1979) posits that we all bring prejudice to our encounters, whether they are with people, texts or art. He refers to this as our *horizon of understanding* or "the range of vision that includes everything that can be see from a particular vantage point" (p. 143).[6] The dialogic process requires a willingness to test our own prejudices by (1) acknowledging we have them and being willing to see them; and (2) being open and willing to experience another's *horizon of understanding*.

We expand our horizon through the *dialogic relationship* through which a *fusion of horizons* becomes possible. We "let the text ask its own questions. As the text begins to present itself in its newness, one places its meaning 'in relation with the whole of one's own meanings.' The dialogic relationship is one in which one's own meanings and the meanings of the text are engaged in a conversation. In the successful conversation they, 'are thus bound to one another in a new community…[it is a] transformation into a communion, in which we do not remain what we were'"(Gergen, 1999, p. 144).[7] Thus, dialogue becomes a "*transformative* medium," a special kind of relationship "in which change, growth, and new understanding are fostered" (Gergen, 1999, p. 148).[8]

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[5]Adapted from Bohm, D. (1996). *On Dialogue*. London: Routledge, p. 6.
[6]Gadamer, H-G. (1979). *Truth and Method.* London: Sheed and Ward, p. 143.
[7]Gergen (1999), p. 144.
[8]Gergen (1999), p. 148.

I also use dialogue to refer to a form of presentation throughout this document. As Grudin (1996) points out, "the mind can dialogue with itself by asking questions and trying to answer them or by setting up two different frames of reference and comparing them; more ambitiously, the mind can examine its own words and premises in order to understand itself or renew its way of seeing the world" (p. 12).[9] Dialogue, Grudin (1996) suggests, consists of two key ingredients: reciprocity and strangeness. Reciprocity refers to: "a give-and-take between two or more minds or two or more aspects of the same mind" (p. 12).[10] Strangeness refers to: "the shock of new information—divergent opinion, unpredictable data, sudden emotion, etc…." (p. 12)[11] that may emerge. Grudin (1996) asserts that: "through reciprocity and strangeness, dialogue becomes an evolutionary process in which parties are changed as they proceed" (p. 12).[12]

In Chapters 2 and 3, I present my dialogue with ideas and my dialogue with myself in the form of questions. In seeking the answers to these questions, I begin with an attempt to capture my own *horizon of understanding* on each question including the conversational pathways that emerge from my own prejudices. As I explore these pathways, and the texts begin to ask the questions and present new information or strangeness, I examine what *fusions of horizon*, new insight and understanding emerges. With this new understanding, my dialogue returns to the original question: how are we to go on together? I explore how this exploration has expanded my own horizon with regard to how communities make meaning together, and how "all that is meaningful grows from relationships [within which] the vortex of the future will be forged" (Gergen, 1994, p. ix).[13]

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[9]Grudin, R. (1996). *On Dialogue an Essay in Free Thought*. Boston: Houghton Mifflin Company, p. 12.
[10]Grudin, p. 12
[11]Grudin, p. 12.
[12]Grudin, p. 12.
[13]Gergen, K. (1994). *Realities and Relationships*. Cambridge, Massachusetts: Harvard University Press, p. ix.

OPENING PERSPECTIVES ON THE HUMAN-NATURE RELATIONSHIP

Let me start with an exploration of what in my own horizon of understanding leads me to believe that these particular areas of inquiry matter. First of all, I begin with four beliefs:

1. That a healthy, flourishing existence on this planet for ourselves and for future generations is desirable;

2. That the possibilities for creating a healthy, flourishing existence on this planet for ourselves and future generations is in danger;

3. That whether and how we are to go on together to create a healthy, flourishing existence for ourselves and future generations, depends upon how we make sense of the world and our relationship with and within it; and

4. That how we make sense of the world, our relationships with and within it, and the possibilities for continuing those relationships starts with our beliefs about the relationship between humans and the rest of nature and our beliefs about the relationships between and among human communities.

Thus, the first area of inquiry—how we understand the human-nature relationship—is foundational. The second area of inquiry explores the emerging meanings attributed to and being generated around the term "sustainability," which in my opinion is as much about our perceived relationship with each other as it is about our understanding of the human relationship with the rest of nature. It is my belief that the sustainability discourse signals a "tension

among intelligibilities" (Gergen, 1994, p. 13)[14] that heralds a possible paradigm shift in our understanding of the world and our relationships. The third area of inquiry looks for how we can begin to resolve and evolve this tension by adopting new stories and metaphors.

Finally, I address the question: so what? My ultimate purpose in conducting this research is pragmatic: how does our understanding of the human-nature relationship; the growing sustainability discourse; and new ways of seeing and telling our story in the 21st Century show up in what we do together, in our joint action? I turn to that dialogue in Chapters 4 through 8.

Reitan (1998) suggests:

> One of the most recurring themes in contemporary environmental theory is the idea that, in order to create a sustainable human society embedded in a flourishing natural environment, we need to change how we *think* about our relationship with nature. A simple change in public policy is not enough. Modest social changes—such as increased use of public transportation or a growing commitment to recycling—are not enough. Nor is environmental education that stresses the dangers of current practices and the prudence of caring for the earth. Even appeals to moral duty—obligations to future generations and to the fellow creatures with which we share the planet—are insufficient. *What is needed is a change in our worldview. More specifically, we need to change our view of nature and of our relationship with nature*[15] (emphasis

[14]Gergen, K. (1994), p. 13.
[15]Reitan, E. (1998). "Pragmatism, Environmental World Views, and Sustainability", *Electronic Green Journal*: Vol. 1: No. 9, Article 11.
http://repositories.cdlib.org/uclalib/egj/vol1/iss9/art11. Last accessed May 23, 2009.

added).

Although I agree that a shift in worldview is desirable and in fact necessary, I also believe that every change that takes place in alignment with a new system of intelligibility helps to bring that intelligibility to life. Although a shift in paradigm or worldview may be the most effective place to intervene in a human system for the greatest leverage for change (Meadows, 1997);[16] actions and behaviors that are aligned with such a shift can begin to manifest its meaning. Long before a new system of intelligibility becomes "common sense," actions consistent with it can begin to make "local sense." The practical relevance of these local successes demonstrates and reinforces the sense implicit in the new system. Thus successfully coordinated action in alignment with the new worldview engenders expanded possibilities of acceptance and expanded commitment to that worldview. Coordinating action becomes a means for shifting paradigms, even as a shifting paradigm becomes a means for coordinating action.

My starting point in dialogue in this area of inquiry is an account of my own *horizon of understanding,* what I see from my particular vantage point. I live in what I believe is one of the most beautiful places on the planet. Sitting in our home on top of a bluff, I look out over a slope of land that a legal deed attests is "owned" by my husband, Brian, and myself. A few trees were left standing when the previous owners built the house and, after the construction, great care was taken to transplant species of plant native to the coastal forests of British Columbia onto the slope so that it could grow back "naturally." We

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[16]Donella Meadows (1997) asserts that as other leverage points for change in a system are built on our worldview, changing our worldview is the most effective way to change other levers such as the goals, structures, or rules of a system. See: Meadows, D. (1997). "Places to Intervene in a System," originally published in Whole Earth Magazine. Available online: http://www.futuresfoundation.org.au/documents/wellbeingproject/supporting%20articles/Places%20to%20Intervene%20in%20a%20System%20-%20Donella%20Meadows.pdf. Last accessed on May 23, 2009.

have decided to "let nature take its course," by doing minimal cultivation – just enough to keep a path clear so that we can occasionally walk down to the top of the cliff that drops down to water.

The land is described as "high-bank" waterfront from which I look out over water, islands, and mountains. My unobstructed vista is constantly changing. The water is in constant motion. Today there are numerous sailboats and speedboats traveling in every which direction. Potted plants—flowers and herbs in riotous colors and mélange of fragrances—dress the patio, which affords almost a 180-degree view of land, water and sky. Frequent appearances of eagles, seagulls, hummingbirds and many birds whose names I do not know; dragonflies, butterflies, and other flying insects grace the day with motion and sound. Is this nature?

We feel very blessed to live in such a "natural" setting. I never tire of looking out over this changing scene no matter what the weather, season or time of day. Kahn (2001) reports on research that suggests that people often prefer natural environments to built environments and built environments near water and with broad vistas, like the bluff on which we live. He suggests that these preferences may, in fact, have an evolutionary genesis brought about through the long human-nature relationship:

> By most evolutionary accounts, human beings lived for nearly 2 million years on the savannas of East Africa. During this time, it is believed that certain features of landscape offered greater chances for individual and group survival. For example, bodies of water not only provided a physical necessity to individuals, but also presumably, a perimeter of defense from most enemies. Bodies of water also drew forth other animals and plant life on which humans depended. Prominences overlooking grasslands afforded views of

> approaching threats posed by certain animals or inclement weather. Trees with relatively high canopies did not block the view. Flowers indicated food sources (p. 9).[17]

I can accept the plausibility of that story. I often scan the view. I pay attention to the changes of the tide, the activity of the birds and the relationship of that activity with indications of fish in the area, and the weather patterns throughout the day. We often "joke" with friends who live on the other side of the bluff that between us we can watch the comings and goings from the mountains out into the ocean, and that if systems break down—a situation that we contemplate with some seriousness—we will at least have a good source of protein from fish. Is my observing and scanning "being in relationship" with nature?

If I am separate from nature, where does nature end and where do I begin? What separates me from nature? Is it the boundaries of my body? Suzuki (1997) reminds us that we are creatures born of the Earth. Our very physiology is shaped by our need for air. "We are more than just air breathers; we are creatures made for and by the substance we need every minute of our lives. And just as air has shaped and sustained living beings, so living beings created and still sustain the air" (Suzuki, 1997, pp. 30-31).[18] The very air we breathe binds us to every living being on the planet extending through time and space. "Each one of us, past, present, and future, needs air every minute of every day we live, in the proportions and purity our bodies are adapted to" (Suzuki, 1997, p. 50).[19] Is the air nature? Is it outside of us, separate from us?

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[17]Kahn, Jr., P. (2001). *The Human Relationship with Nature: Development and Culture*. Cambridge, Massachusetts: The MIT Press, p. 9.
[18]Suzuki, D. (1997). *The Sacred Balance: Rediscovering Our Place in Nature*. Vancouver, British Columbia: Greystone Books, Douglas & McIntyre, p. 30-31.
[19]Suzuki (1997), p. 50.

What about water? Nearly 75 percent of the planet's surface is covered with water. Humans need water because we are made out of it. The average human being is roughly 60 percent water by weight and every day about three percent of the water in our bodies is replenished with new molecules. These molecules come from the metabolic production of water (about 12 percent); liquids we drink (around 52 percent) and through the food we eat (around 36 percent). Ultimately we can trace those molecules of water back to the planet's oceans, its rainforests, its lakes and rivers, and water evaporated from the land. Like air, water links us to all living creatures on the planet (Suzuki, 1997, pp. 59-60).[20] Without air and without water, we cannot exist.

What about the earth—the soil? Suzuki (1997) reminds us:

> [E]very bit of nutrition that keeps us alive was once itself alive, and all terrestrially supplied nourishment comes directly or indirectly from the soil. As botanist Martha Crouch points out, our relationship with food is the most intimate of all connections we have with other beings, for we take it into our mouths and actually incorporate it into our cells. Every part of our bodies, as well as the sugars, fats and enzymes that drive the metabolism of our cells and fuel life, are constructed out of building blocks absorbed from the carcasses of other life-forms. Deprived of other beings to eat, we begin to starve and thus to consume ourselves; if starvation continues, we will die within seventy days (p. 77).[21]

Our physical existence clearly not only depends upon air, water and other living beings, our very physical being is made up of these things. The boundary between what is "me" and what is nature becomes obscure at best.

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[20]Suzuki (1997), p. 59-60.
[21]Suzuki (1997), p. 77.

And if "to relate" means "to have a significant connection with or bearing on something,"[22] then all humans live in intimate relationship with the non-human world. Are we not, then, a manifestation of nature, made up of nature and totally dependent upon nature for life?

EXPLORATIONS ON NATURE AND THE HUMAN-NATURE RELATIONSHIP

In exploring some areas of my *horizon of understanding* about nature, some things stand out:

1. Implicit in my description are many assumptions about the appropriate use of the term "nature." For example, "natural" refers to something "not human made or human-cultivated."

2. My very question is phrased dualistically – it concerns the relationships between humans and nature (not human).

3. My exploration of the intimate connection between human and nature (not-human) calls into question speaking in a way that maintains a duality between human and nature. Is not being human just one manifestation of nature? If so, how can we speak about non-human nature? If humans are a manifestation of nature, is everything that a human produces also "natural?"

4. My *horizon of understanding* draws considerably from "biological science." My arguments for the interrelatedness of human/nature rely upon one way of knowing about the world with its own language with specialized terms such as molecules, metabolism, and physiology. I realize this is only one story and that it is not

[22] *Encarta World English Dictionary*
http://encarta.msn.com/dictionary_1861699950/relate.html

> the only view held by those who use science as the way to understand the world, and certainly not the only story that gives meaning to the word "nature."

From a social constructionist perspective, there is no privileged way of knowing the world. "[F]or any state of affairs a potentially unlimited number of descriptions and explanations is possible. In principle . . . not one of these descriptions or explanations can be ruled superior in terms of its capacity to map, picture, or capture the features of the 'situation in question'" (Gergen, 1999, p. 47).[23] The term "nature" does not refer to an external objective reality that is simply mirrored in the use of the word. The meaning of the term "nature" is negotiated and affirmed through our relationship with others in a given community or communities. These relationships are what make possible an intelligible world of objects and persons as we continuously generate meaning together (Gergen, 1999, p. 48).[24] The shared language of the community is the means by which objects, persons, and events become real (Gergen and Gergen, 2003, p. 4).[25] Gergen (1999) remarks:

> Relations among people are ultimately inseparable from the relations of people to what we call their natural environment. Our communication cannot exist without all that sustains us – oxygen, plant life, the sun, and so on. In a broad sense, we are not independent of our surrounds; our surrounds inhabit us and vice versa. Nor can we determine, as human beings, the nature of these surrounds and our relation with them beyond the languages we develop together. In effect, all understandings of relationship are themselves limited by culture and history. In the end we are left with a profound

[23]Gergen (1999). *Invitation to Social Construction*. London: Sage, p. 47.
[24]Gergen (1999), p. 48.
[25]Gergen, K. and Gergen, M. Editors (2003). *Social Construction: a reader*. London, England: Sage Publications, p. 4.

> sense of relatedness–of all with all–that we cannot adequately comprehend (p. 48).[26]

Nevertheless, communities of humans have attempted to determine the essential character of nature and our relationship to it. It is to this human endeavor that I now turn.

Neil Evernden (1992) provides a thoughtful discussion of the history and uses of the term "nature" in his book *The Social Creation of Nature*. He relies heavily upon C.S. Lewis's exposition on the development of the concept of nature, as he feels that Lewis has fleshed out the concept more fully than most writers (Evernden, 1992, p. 169).[27] The most commonly accepted origin of the word "nature" is from the Latin *natura* referring to "what a thing is really like," its essence, and from *natus* "born." Evernden (1992) points out:

> Lewis suggests that a small number of Greek thinkers effectively *invented* nature. Or rather, invented "Nature with a capital," or "nature in the dangerous sense," for, he claimed, of all the words he had analyzed, this is the one most likely to be employed where it is not required. Strictly speaking, there can be nothing that is not "nature"—it has no opposite. But "when *nature*…loses its purity, when it is used in a curtailed or 'demoted' sense, it becomes important." In that demoted sense it is no longer "everything," and once the suggestion is made that there might be more to the word than "everything,"…an interesting transformation takes place. If…nature is not all, then it may be thought of as just one thing, or one set of things. Furthermore, the pre-Socratics

[26]Gergen (1999), p. 48.
[27]Evernden, N. (1992) *The Social Creation of Nature*. Baltimore and London: Johns Hopkins University Press, p. 169.

> who invented nature "first had the idea…that the great variety of phenomena which surrounds us could be impounded under a name and talked about as a single object." The possibility of a *thing* called nature is as significant a development as a fish having a "thing" called water: where there was once an invisible, preconscious medium through which each moved, there is now an object to examine and describe (pp. 19-20).[28]

Lewis suggests that the possibility that nature could be examined as a single object, or set of objects, developed into three traditions. The Platonic tradition posited that eternal archetypal forms existed beyond nature and that these are the true reality. The Aristotelian tradition viewed nature as an essential principle of change contrasted with the unchanging gods. The Christian tradition extends this view and sees God as the creator of nature, yet distinct from it as an artist is to a work of art (Evernden, 1992, p. 20).

Williams (1983) traces the general uses of the word "nature,' to the 13th century when "nature" referred to the essential character of a person, object or concept. This concept evolved in the 14th century, when "nature" was used to indicate the inherent force directing the world (Williams, 1983, pp. 219-224).[29] Evernden (1992) suggests that it is impossible to pinpoint the genesis of the modern understanding of nature. He suggests that although significant points of change can be found across several centuries, the Italian Renaissance of the 15th and 16th centuries appears to be a "watershed to modernity" (Evernden, 1992, p. 40).[30] To the medieval mind, nature was God's handiwork filled with Divine messages, and acquiring knowledge of God must be done through the world, through nature. Simply knowing the material aspects of an object was not sufficient. One needed to seek out the meanings behind the

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[28]Evernden (1992), pp. 19-20.
[29]Williams, R. (1983). "Nature." In *Keywords: A vocabulary of culture and society*. New York: Oxford University Press, pp. 219-224.
[30]Evernden (1992), p. 40.

material qualities to gain insight into Divine intention. With the Renaissance a new abstracted system called "nature" came into being with a strict limitation on permitted contents and an exclusion of 'human' qualities. The locus of knowledge shifted from the world to the human. Nature, first seen as everything, and as essence, became everything-but-God, and then evolved to everything but human.

Evernden (1992) states: "Rather than seek norms of behavior in nature, humans must now dictate norms for *Nature*" (p. 56).[31] The contents of nature became established through historical decree. Increasingly, knowledge of nature required human reason. Evernden (1992) suggests:

> Much of our admiration for Leonardo [DaVinci] arises from his new concept of the *necessity* of nature—that nature is a rule-bound, law-abiding entity, following forms that are knowable to the human mind. It has only one 'correct' form, and it is that one form that the scientist or artist must discover and define…Once we assume that there is *of necessity* a single way of nature, a single pattern by which it is bound, then it is indeed knowable—not by experience, in the colloquial sense, but by reason alone…Both nature and humanity are cast in new roles, with new properties and expectations…The genius finds the necessity in nature: this sums up the base assumption which can never again be ignored, and which implicitly supports all that follows…Necessity becomes…the standard of nature. Nature, though explicitly nonhuman, is *ours*: we do not so much read the 'book of nature,' as Galileo desired, as write it. It is a human artifact…its only purpose is provided by the use we give it…For the humanist concept of 'Human' to exist, we must first invent Nature: our freedom rests on the

[31]Evernden (1992), p. 56.

> bondage of nature to the 'Laws' which we prescribe (pp. 59-60).[32]

Nature in the medieval world was rich with transcendent content; in the Renaissance it became a necessary form. In the 17th century "nature" referred increasingly to a physical non-human world that could not only be known; it could also be conquered and controlled for the benefit of humans. Descartes and Bacon set out to create a new program for human society and a new organizing principle for social relations. Descartes' goal was to develop a practical philosophy that would make humankind masters and possessors of nature. Rich (1994) points out that Bacon's project had a great deal in common with Descartes': "a desire to reevaluate all previous learning, an emphasis on method and induction, and a grand vision of the domination of nature, as well as of human affairs, through the application of this 'new philosophy'" (Rich, 1994, p. 207).[33]

Gergen (1999, p. 6) asserts that the Age of Enlightenment around the beginning of the 18th century can, in fact, be viewed as the birthplace of modernist beliefs about the self, the idea that each individual is able to observe the world for what it is and decide rationally on one's best actions. Elsewhere Gergen (2001) points out that:

> [T]he perfect companion to the fully functioning mind is an objectively knowable and rationally decipherable world. It is in this respect that the work of Enlightenment figures such as Isaac Newton and Francis Bacon were of pivotal importance. Their writings convincingly demonstrated that if we view the cosmos as material in nature, as composed of causally related

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[32]Evernden (1992), pp. 59-60

[33]Rich, B. (1994) *Mortgaging the Earth: The World Bank, Environmental Impoverishment, and the Crisis of Development*. Boston: Beacon Press, p. 207.

> entities, and available to observation by individual minds, then enormous strides can be made in our capacities for prediction and control (pp. 805).[34]

Nature thus can be known and deciphered as something mechanical, like a set of clockwork parts. Instead of essence, nature became commodities to be extracted and used for human benefit. The human-nature dualism separated the properties of the world into two domains: nature and humanity, and it placed humans, "as the beings capable of reason, in charge of that process: it gives us license to adjudicate the contents and behavior of nature" (Evernden, 1992, p. 89).[35] This modern understanding of nature still prevails in Western society. From this perspective, humanity is unique, unlike anything else on Earth. Everything else is relegated to nature. Nature is the domain of science; history is the domain of human action. Nature can be known through the scientific method: it is the historically established domain of the knowable. We can only really know what nature is through the privileged lens and language of science.

But is science the only lens and language through which we can understand what nature is? Gergen (1994) reminds us that our knowledgeable accounts of the world are framed in language. Communities that share languages of description and explanation make those accounts intelligible. "Meaningful language is the product of social interdependence"(Gergen, 1994, p. viii). The meaning we give to "nature" depends in part on the community or communities in which we use the term.

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[34]Gergen, K. (2001). "Psychological Science in a Postmodern Context," Pre-publication draft for *The American Psychologist*. 56, p. 805. Accessed on line at: http://www.swarthmore.edu/SocSci/kgergen1/web/page.phtml?id=manu25&st=manuscripts&hf=1. Last accessed on May 22, 2009.
[35]Evernden (1992), p. 89.

Meisner (1992) echoes the social interdependence implicit in the meaning we attribute to *nature*, pointing out that we live not only in the world of nature but also in the world of words. In this world of words, metaphors are "at the heart of human conceptions of Nature…when it comes to giving meaning to Nature through language, there is only metaphor…there are no literal, true, or universal views of Nature that may be expressed in language without resorting to metaphors. There are only choices between different ways of metaphorically characterizing Nature. Thus, we 'understand' Nature through the metaphors we project onto it, sometimes in multiple layers" (p. 2).[36]

Before we proceed with this line of thought, it is useful to ask: "What is metaphor?" Derived from the Greek root *meta* implying "a change" and *pherein* meaning "to bear, or carry," the most common definition of *metaphor* is a figure of speech "that is used to paint one concept with the attributes normally associated with another."[37] In their book *Metaphors We Live By,* Lakoff and Johnson (1980) explain that the "essence of metaphor is the understanding and experiencing of one thing in terms of another" (p. 5).[38] These authors assert that our use of metaphor is pervasive in everyday life, not only in language but in thought, and action as well. Gergen (1999) points out that long-term usage within a community invests words with their meanings. When a word is taken out of one context of usage and used within another context, it creates a metaphor. "The difference between literal and metaphoric words then is *essentially the difference between the conventional and the novel*. In this sense, all our understandings can be seen as metaphoric if we but trace them to their origins…the common words by which we understand our worlds are typically appropriated from other contexts" (p.

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[36]Meisner, M. (1992). "Metaphors of Nature: Old Vinegar in New Bottles?" in *Trumpeter (1992) ISSN: 0832-6193*, p. 2.
[37]Wikipedia: http://en.wikipedia.org/wiki/Metaphor#Etymology
[38]Lakoff, G., & Johnson, M. (1980). *Metaphors We Live By*. Chicago: The University of Chicago Press, p. 5.

65).[39]

Meisner (1992, p. 1) suggests that metaphor may be the single most important aspect of language when it comes to our views of nature.[40] He cautions that the metaphors we use tend to prejudice what they are meant to characterize by "highlighting certain perspectives and features, while blocking out others, especially those that are incompatible with the chosen metaphor" (Meisner, 1992, p. 3).[41] In other words, our metaphors can blind us as well as enlighten us. The metaphors we use can lead us to see and understand things in a new light; they can also narrowly constrain what we see and understand. As we attempt to make sense together and to move from the novel to the conventional, our metaphors can become literalized: the metaphor comes to be accepted as the description of truth. Meisner (1992) suggests that the movement from metaphor to the creation of a literal reality in our minds is common within environmental thought. Citing Ecophilosopher Alan Drengson, Meisner (1992) suggests that the modern mind tends to literalize metaphor in an attempt to reduce everything to one level of meaning; which reifies the results, and converts the resulting abstract entities into concrete realities (p. 40).[42] As Deep Ecologist, John Livingston points out:

> The "realities" we perceive, in other words, are socially and culturally constructed. One such "reality" is the total dedication of nature to the human purpose. All of nature is one vast bank of raw materials, exclusively earmarked for the human enterprise. The metaphor becomes the reality (quoted in Meisner, 2001, p. 4).[43]

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[39]Gergen (1999), p. 65.
[40]Meisner (1992), p. 1.
[41]Meisner (1992), p. 3.
[42] Meisner (1992), p. 4.
[43]Livingston, J. A. (1985). "Moral Concern and the Ecosphere." 12:2, 3-9. *Alternatives* Citied in Meisner (1992), p. 4.

How does this literalizing process evolve? How do we go from the novel to the conventional? Metaphors, Gergen (1994) reminds us, are not derived from observing an outside objective reality, but rather "serve as rhetorical forestructures through which the observational world is construed" (p. 41).[44] If forms of understanding are sufficiently long-standing, and they are used consistently with the same meaning, they may be taken as literal rather than metaphoric representations of reality. They move from a process of "how we make sense together of the world;" to a belief that what we describe is "how the world is."

How do we construe nature? How do we understand and see nature? What are some of the metaphors we have created to grasp what it is? A study by the University of California, Santa Barbara on "New Visions of Nature, Science, and Religion" identified five contemporary visions of nature.[45] The first two of these visions draw predominantly from the physical, life, and behavioral sciences; the final two views draw predominantly from the social sciences, humanities, and theology; and the middle view straddles the sciences and humanities. In the following list of metaphors, the first five are based on the distinctions that UC Santa Barbara is using in its studies. I have expanded on their original descriptions to reflect my own perspective and understanding of each metaphor. I have also added three metaphors that I felt were not covered in the five that UC Santa Barbara identified. I do not claim that this is an exhaustive list. My purpose here is simply to explore some of the possibilities and perspectives evoked by and shared in response to the question: What is *Nature*?

1. Evolutionary nature: nature is an evolutionary process that can be observed, studied and understood through contemporary scientific

[44]Gergen (1994), p. 41.
[45]More information on the "New Visions of Nature, Science, and Religion," project, is available on the project website: http://www.newvisions.ucsb.edu/

disciplines, especially in the life sciences. Humans, from this perspective, are part of nature evolving, although it is uncertain whether humans represent the pinnacle of evolution as pictured in an evolutionary triangle with humans at its apex, or whether humans are just another evolutionary step as nature continues to evolve.

2. Emergent nature: nature can be known and understood from the scientific perspective of complex systems. Nature exists at multiple scales of complexity and through scientific analysis we can understand the relationship between these levels. Complex systems research provides new ways of understanding the relationship between order and disorder in reality, leading to fundamental insights on nature, which is classically understood as part of an orderly cosmos. The vision of emergent nature challenges the strict separation of cosmos and chaos, order and disorder in the universe. In emergent nature, randomness and pattern are linked; this very different metaphysical way of looking at nature leads to fundamental new insights in natural science fields such as ecology. Humans are integrally interwoven in this complex array of systems within systems that ranges from the subatomic to the cosmic.

3. Malleable nature: nature is open to shaping and change ranging from cultivating crops, a hallmark of human social organization, to manipulating the genetic structure of forms of life. This view of nature challenges the boundaries of "nature" and "the natural" with the development of new genetic technologies and postmodernist perspectives on what constitutes reality. What is natural and what is unnatural (or artificial) is becoming less easily distinguishable. Humans are the shapers, manipulators, perfectors, and managers of nature.

4. Sacred nature: nature is understood to be "of God," and thus consecrated, or immanently sanctified or spiritual (sacred in itself): the

wild sacred "Other." Nature is our temple: our Source of life and inspiration. God created nature to be used by humans who, made in God's image and likeness, are "singled out in God's creation to have a special, privileged place,"[46] interpreted by many to justify the stance that humans are divinely ordained to exercise dominion over nature. From another perspective, the book of Genesis reports that after God had made the world "God saw everything that he had made, and behold, it was very good" (Genesis, 1:31).[47] In Genesis God declares the non-human part of his creation good before humans are created. Reitan (1998) argues: "in addition to having instrumental value for human beings, nature has an inherent value that needs to be respected" (p. 7**).** Nature proceeds from God; that which is "of God" is sacred; therefore, nature is sacred. God gave the rest of creation to humans for their use, but humans have a sacred duty to steward this gift, for it comes from and ultimately belongs to God. The perspective that nature is sacred unto itself as the Great Being, the Great Mother, from whence all life comes is closely related to the Gaia hypothesis outlined by James Lovelock et al. This metaphor is touched upon below in "nature as organism."

5. Nature as culture: nature is a cultural construction. Our knowledge and understanding about nature is culturally and historically specific. How we experience and describe nature depends upon our cultural repertoire: the sum total of possible symbolic resources at our disposal at a given time. These cultural resources are not static, and cultural meanings evolve over time. These resources are learned and taught. As Bateson (1994) points out: "All societies pass on complex patterns: conventions of human relations; languages roughly comparable in their

[46]Reitan, E. (1998). "Pragmatism, Environmental World Views, and Sustainability,"in *Electronic Green Journal*, Special Issue 9, December. http://egj.lib.uidaho.edu/egj09/reitan1.html, p. 5.
[47]Genesis 1:31 accessible at: http://bibleontheweb.com/Bible.asp

basic complexity, whether or not they have ever been written down; details of the environment; skills for survival; abstract notions of causality and fate, right and wrong. Some are learned by play and experience…others by observation… Everywhere there is some teaching, mostly by family members who…are not teachers and have no systematized knowledge of the material they are passing on" (p. 42).[48] These complex patterns and agreements of meaning found in the language of a culture are not static. Gergen (1999) notes that the language of a culture is not a product of a single unified tradition, but represents a mixed stew. "[T]he language of a culture is in continuous motion. The meaning of words is subtly altered in each new context of usage, and new words may be coined at any time" (p. 130).[49] The human relationship with nature is contingent and contextual because the meaning of "nature" can be different across cultures and over time. There is no such thing as "nature," there are only the agreed upon meanings we communally and culturally attribute to the term. Nature is what we agree nature is.

6. Nature as property/provider: nature is the source or warehouse of valuable resources and the infinite sink for our wastes; it belongs to humans and exists for our use. Whether formulated by Genesis, Descartes, or contemporary resource-driven political and economic actors, nature is seen as a bank of commodities to be harvested solely for the benefit of humans, usually a privileged subset of humans who hold the deed/rights to those resources and have the capital and technology to extract and use them. Whether humans exploit, manage, protect or conserve it, nature is commoditized and owned.

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[48]Bateson, M. C., (1994). *Peripheral Vision: Learning Along the Way*. New York: HarperCollins Publishers, p. 42.
[49]Gergen (1999), p. 130.

7. Nature as organism/living being: the Gaia hypothesis, developed by James Lovelock (1979), proposes that nature (the Earth) behaves as if it is a super-organism constituted of all living things. The premise of the hypothesis, named for the Greek Goddess Gaia or Ge, is that the Earth is a global ecosystem that sustains and regulates itself like a biological organism rather than an inanimate object with automatic and accidental processes. The Earth is more like a living body than a rock or a machine. Lovelock speculates about the implications of this hypothesis for human-nature relationships:

> If Gaia exists, the relationship between her and man, a dominant animal species in the complex living system, and the possibly shifting balance of power between them, are questions of obvious importance. The Gaia hypothesis is for those who like to walk or simply stand and stare, to wonder about the Earth and the life it bears, and to speculate about the consequences of our own presence here. It is an alternative to that pessimistic view which sees nature as a primitive force to be subdued and conquered. It is also an alternative to that equally depressing picture of our planet as a demented spaceship, forever traveling, driverless and purposeless, around an inner circle of the sun (Lovelock, 1979).[50]

Humans are part of the life that is Gaia, yet a part that can speculate on the possible adverse ramifications of tipping the system out of balance.

8. Nature as home: it is where we live. Although this provides a strong "place-based" identification with nature, Meisner (1992) cautions that if the rest of Nature is home, we presumably do with it what we wish.

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[50]Lovelock, J. (1979). *Gaia A new look at life on Earth* Oxford University Press, 1979. Cited at: http://www.marxists.org/reference/subject/philosophy/works/us/gaia.htm.

> Nature is a physical place within which humans reside, and not something that humans themselves partially constitute. Home, as the place where we live, is associated with domestication, which, Meisner (1992) points out, means "bringing into the home" or taming. He asks: "if all of Nature is home, will all of Nature become managed and domesticated?" (p. 6).[51]

As this list and the preceding dialogue show, humanity ascribes many meanings to *nature* from the scientific to the sacred. This is important because the sustainability conversation often gets framed as having to do with nature, or with the natural world. To explore what sustainability is it is helpful to know that our understanding of what *nature* is varies widely across diverse communities. It stands to reason, then, that the meaning of *sustainability* will also vary.

FUSIONS OF HORIZONS ABOUT THE HUMAN-NATURE RELATIONSHIP

There is a Zen saying that goes something like this: "Before I was enlightened, a mountain was just a mountain. When I was enlightened, a mountain wasn't a mountain anymore. After I was enlightened, a mountain was just a mountain again." I find myself back in the place I started, asking: "what is nature?" I have been in dialogue with numerous authors, ideas, and texts. I know that I have only scratched the surface of the possible ways that humanity understands and gives meaning to the term: *nature*. As I have explored various pathways, I have consistently asked myself: does this metaphor of nature make sense to me? The answer consistently is "yes." Each metaphor does make sense as a possible way to tell a story about what nature means for the conduct of human action and within the context of human relationships. For all the metaphors have that in common. They are not about a separate knowable entity that has a name. They are not really about humanity's

[51]Meisner (1992), p. 6.

relationship with nature. They are about human relationships in human communities, and about how humans make sense together.

First there is a mountain – the "everything" of nature – the water in which the fish swims, outside of which the fish has no existence. Then there is no mountain – we make distinctions, we create meanings together so we know how to act together, there are many possible understandings that shift and change as the social context requires, depending upon what we are trying to do together. Then there is a mountain again. Nature is as good a word as any for the "necessary something," the irreplaceable web without which we have no existence, without which our actions have no purpose or possibility. Carl Sagan put it simply: "Anything else you're interested in is not going to happen if you can't breathe the air and drink the water."[52]

What is nature? What is the human-nature relationship?

> The Tao that can be told is not the eternal Tao.
> The name that can be named is not the eternal name.
> The nameless is the beginning of heaven and earth.
> The named is the mother of ten thousand things.
> Ever desireless, one can see the mystery.
> Ever desiring, one can see the manifestations.
> These two spring from the same source but different in name; this appears as darkness.
> Darkness within darkness,
> The gate to all mystery.[53]

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[52]Quote by Carl Sagan accessed on the River Network website: http://www.rivernetwork.org/library/index.cfm?doc_id=125
[53]Lao Tsu, translated by Gia-fu Feng and Jane English (1972). New York: Random House, Poem ONE.

We live and act in the world of manifestations that we create as we name them – the ten thousand things – where one of the most important questions echoes again: How are we to go on together? How we understand nature is not about nature, it is about us. How are we, our species organized in its myriad cultures and communities, going to continue to go on together on this planet? Is that possible future even in question? If so, can we to make sense of it?

If, "in the end, all that is meaningful grows from relationships" (Gergen, 1994, p. ix) then the meaning we attribute to *nature* is not about how we understand an objective external phenomenon. It is more accurately a discourse on what it means to be this part of nature we call human.

Gergen (1994) asks: "How do words and gestures come to have meaning for people? How is it we reach common understandings or often fail in our attempts to understand?" (p.253). He goes on to assert that "[w]ords (or texts) within themselves bear no meaning; they fail to communicate. They only appear to generate meaning by virtue of their place within the realm of human interaction. It is human interchange that gives language its capacity to mean…" (pp. 263-264). It is human interchange that is creating meaning around *sustainability*. In this interchange, how we understand and perceive nature and how we understand and perceive our relationship to nature provides a subtext, a story within a story that influences the meaning we ascribe to words or texts about sustainability. I explore the place of the words and texts that are emerging in the sustainability discourse "within the realm of human interaction," in more detail in Chapter 3.

CHAPTER 3

DIALOGUE WITH IDEAS ABOUT THE MEANING OF SUSTAINABILITY

A growing sustainability discourse is emerging in global society. Suddenly references to "sustainability" seem to be showing up everywhere from esoteric academic treatises to political speeches to commercial advertisements and all manner of popular culture media. What is "sustainability?" Why is this sustainability discourse taking place? What is being included in this discourse? Who is involved? What does it mean? Why does it matter? These are some of the questions that guide my explorations in this chapter.

As in Chapter 2, I organize this chapter as a dialogue, starting with my horizon of understanding, exploring conversational pathways, and coming to a fusion of horizons. My intention in this chapter is to examine some of the threads that make up the tapestry of meaning around the sustainability discourse. In so doing I seek to better understand how *sustainability* as a term, in texts, in social discourse, and a basis for action is becoming meaningful. "How is it we reach common understandings or often fail in our attempts to understand?" Gergen asks (1994. p. 253). What is the place of *sustainability* within the realm of human interaction? What is it about life in the early 21st Century that is making the terms, texts, and discourse of sustainability relevant as a foundation for how we interact, how we go on together?

OPENING PERSPECTIVES ON THE MEANING OF SUSTAINABILITY

I begin this part of my journey with a glimpse into my current horizon of understanding of the growing sustainability discourse. As pioneering

consultants in business and community sustainability Brian and I are often asked to define sustainability. Is it a "thing" or a phenomenon that can be conclusively known, grasped, used or held without reference to context? I start by looking at the "meaning" of the *word*. The etymology of the word "sustain" can be traced to circa 1290, from Old French *sustenir* "hold up, endure," and from Latin *sustinere* "hold up, support, endure."[54] Some of the definitions attached to the word over time include:

1. To keep in existence; maintain.
2. To supply with necessities or nourishment; provide for.
3. To support from below; keep from falling or sinking; prop.
4. To support the spirits, vitality, or resolution of; encourage.
5. To bear up under; withstand: *can't sustain the blistering heat*.
6. To experience or suffer: *sustained a fatal injury*.
7. To affirm the validity of: *The judge has sustained the prosecutor's objection*.
8. To prove or corroborate; confirm.
9. To keep up (a joke or assumed role, for example) competently.[55]

Sustainability, if we turn to common usage, simply put is the property of being sustainable.[56] The adjective, sustainable, means: capable of being sustained.[57] Frankly: still indecipherable. What does that mean – capable of being sustained? What is it that we are sustaining, keeping in existence, maintaining? Why are corporations, municipalities, government agencies, activists, researchers, non-governmental organizations, educators, entire

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[54]*Online Etymology Dictionary*. http://www.etymonline.com/index.php?l=s&p=51
[55]*Dictionary.com:* http://dictionary.reference.com/search?q=sustain
[56]"sustainable." WordNet 1.7.1. Princeton University, 2001. *Answers.com* GuruNet Corp. 17 Sep. 2005. http://www.answers.com/topic/sustainability
[57]"Sustainable" WordNet 1.7.1. Princeton University, 2001. *Answers.com* GuruNet Corp. 17 Sep. 2005. http://www.answers.com/topic/sustainability

professions, and civil society talking about sustainability and organizing activities around the term?

When we began consulting in the field of sustainability in the mid-1990s, using the word “sustainability” evoked what one friend called the “stunned mullet look,” a phrase I understand is Australian slang for being bewildered or uncomprehending. In 2009 there are sustainability indicators, sustainability reports, sustainability strategies, sustainability consultants, sustainability education programs, sustainability conferences, seminars, trainings, and sustainability practitioners. In the time since I embarked upon this dissertation journey *sustainability* has gone from the margin to the mainstream of social discourse. On April 15, 2007, CNNMoney.com, a bastion of mainstream reporting, recounted this report on Fortune Magazine’s first “green issue” entitled “Green Is the New Black:’”

> Maybe it was that moment when former vice president Al Gore's pet project, "An Inconvenient Truth," won the Oscar for best documentary. Or when Wal-Mart (NYSE:WMT) announced it was rolling out "high-efficiency" Supercenters, along with a new packaging scorecard demanding more environmentally friendly packaging from its suppliers. Or when Whole Foods and Wild Oats decided they'd be safer joining rather than fighting each other as elements of their operating philosophies increasingly turned up in the playbooks of "conventional" competitors.
>
> In any event, it's become clear that the "green" movement has found a prominent place in mainstream business strategy.
>
> The word du jour for green in corporate America is "sustainability." Companies ranging from General Electric (NYSE:GE) to General Motors (NYSE:BGM) (NYSE:RGM) (NYSE:GXM)

> (NYSE:GPM) (NYSE:GMW) (NYSE:GMS) (NYSE:GBM) (NYSE:GM) are beginning to think about the future of their businesses in a new way, taking an introspective look at all aspects of the supply chain.[58]

In May 2009, a search on *Google* for the word *sustainability* yields 32,900,000 responses related to a broad range of human endeavor in cities, projects, reports, blogs, videos, companies, countries, international organizations, graduate degrees, books, products: the list goes on. What is this sustainability discourse all about?

My belief is that the definitive meaning of the term sustainability eludes us because it is a metaphor that is emerging out of a relatively new social conversation, one that considers the possibility that life for the dominant species on this planet—humanity—may not be sustainable using the most obvious definition of the word—capable of being sustained—if current tendencies and trends resulting from human activity continue unabated. Certainly this is not the first time that some among the human community have entertained the prospect that life as currently experienced and valued could be under mortal threat, or that specific communities and cultures within the larger human community have experienced the danger of serious depletion or extinction.

Consider the stories of Noah and the Ark from the Bible, or Gilgamesh from the Babylonian epic poem, both dealing with the destruction of humanity through a flood; the wrath of God that struck down Sodom and Gomorrah; the fall of Nineveh, Tyre, Alexandria, the Roman Empire; the haunting monuments on Easter Island; the deserted dwellings of the Anasazi in the American

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[58]CNNMoney.com: "COVER STORY: Green Issue Overview: Green is the new black, April 15, 2007: 08;48 AM EST. Available on line at: http://money.cnn.com/news/newsfeeds/articles/newstex/VNU-0035-15959227.htm.

Southwest; the victims of the Holocaust; the victims of the Tsunami in South Asia on December 26, 2004; the devastation of communities in the path of Hurricane Katrina in the U.S. Gulf Coast in August, 2005; the devastation of the earthquake in Pakistan in the fall of 2005; whole countries suffering poverty, privation and starvation in Africa; war ravaged communities in countless wars; and exploitations and examples of genocide that continue today.

Across cultures and across time, the human story is replete with examples of the rise and fall of communities, some blamed on an angry deity, many at the mercy of other human groups, some as a result of a community's own apparent neglect, ignorance, and perhaps willful blindness.

Humanity is resilient. Despite the most dramatic "falls" of civilizations, humanity, on the whole, has continued, thrived, and increased. The story of humanity is one of continual, and exponential, increase and adaptation. This is our history; it is the story that we know and trust to be true. The sustainability discourse refers to something we sense is new, something we are reluctant to believe and trust: the prospect that certain conditions, including many that are human-created, could disrupt or dramatically change the story we take for granted. This new story asks us to consider the possibility that the life-supporting systems we all need to continue, to be sustainable, are under a potentially dire threat—from us!

This sustainability story engenders "sense-making" conversations. We dearly need to make sense of this dystopian possibility so that we can choose another path; so that we can change the behaviors that contribute to our "unsustainability;" and where such change is insufficient to make a real difference, so that we can adapt to the changing environment that provides the most basic context of our lives—the air we breathe, the food we eat, and the water we drink. We create ways to talk about what most of us consider an unspeakable prospect: that human activity may be undermining the very

systems that support human life. This, in turn, generates conversations concerning what we must do and how we must live and act to ensure this unspeakable prospect does not come to pass.

We need to talk about sustainability because we are increasingly seeing and sensing indicators of un-sustainability. So, when we look at what sustainability is, we are looking at two stories: the story of un-sustainability and the story of sustainability. This, to me, is the very heart of the sustainability discourse: it is about how we will go on together; how we will make sense of what we as a species need to do to adapt to changing global circumstances that we are helping to create; and how we will co-create a continuing life-supporting story.

INQUIRY INTO THE MEANING OF SUSTAINABILITY

The conversational pathways I follow are organized around two ways of approaching the question: what is sustainability?

1. The social discourse that has emerged, particularly over my lifetime, that tells the story of "un-sustainability;" and

2. The social discourse that has emerged and is contributing to the sustainability story.

The story of "un-sustainability" explores multiple conversational threads that have been and are taking place around the globe related to the diverse issues and challenges facing humanity at the beginning of the 21st Century. These threads are complex, interrelated, and rich in detail as the data warning us that humanity's current course is not sustainable are becoming more abundant and irrefutable, if not yet commonly accepted. I liken the story of

"un-sustainability" to the critical phase of a paradigm shift as schematized by Gergen (1994, p. 12), and adapted here:

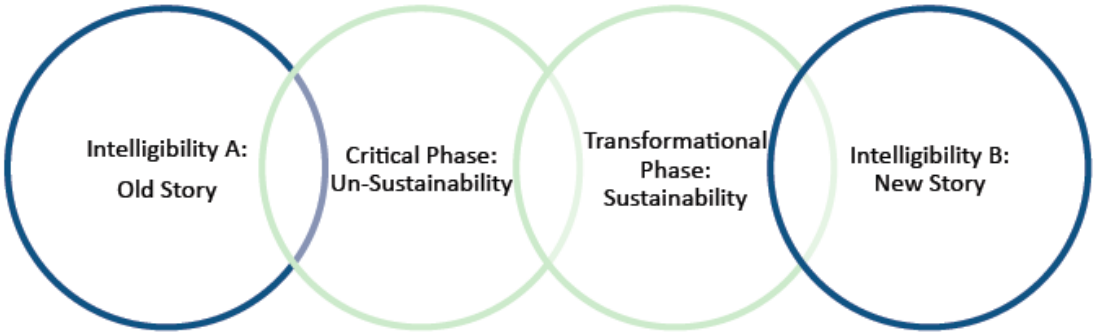

Figure 1: The transition from the Old Story to the New Story, based on Gergen (1994), p. 12.

In humanity's old story, the planet we live on has always provided the fundamental resources we need: air to breathe; water to drink; and resources for food, shelter, and clothing. In this story humanity has certainly had the power to destroy local habitats, but has not had the wherewithal to disrupt the global systems on which our lives unequivocally depend. As Wendell Berry (1985/86), quoted at the beginning of this dissertation, put it: we are in trouble because we are in-between stories. The old story is no longer functioning properly. The "un-sustainability" story I present describes some of the social discourse about this realization.

The story of "sustainability" is just emerging. Its details are not yet clear, its direction and outcome are uncertain, and the very terms we need to talk about it are still being developed. This transformational phase is not yet clearly articulated in terms that we commonly accept, and we are far from the taken-for-granted, common sense, plain-language of a shared new story. We are just at the very beginning of this transformational phase, pictorially perhaps where the two center circles in the schematic overlap. We can talk about the story of "un-sustainability" more readily because we have a language to talk about it and to tell the story: the negations that arise from what is not

functioning in the old story. The story of "sustainability" I present is much shorter than the "un-sustainability" story as it is a more recent and still nascent discourse. The dialogue with practitioners that takes place in Chapters 4 through 7 takes a closer look at what is happening in this early transformational phase as organizations, institutions, and individual practitioners develop the terms and actions that will make up the new story where sustainability-based practices are taken for granted as common sense, the new business-as-usual.

In this section wherein I pose the question: "what is sustainability," my purpose is to describe multiple threads of a complex tapestry of social conversations. In the fusion of horizons in section C, I share my reflections on key questions and tensions that my explorations engendered.

The story of "un-sustainability"

Voices expressing concern about the un-sustainability of the direction society is taking are not new. For example, in June of 1798, on the heels of the French Revolution, Thomas Malthus suggested that the period in which he lived was one "with the most important changes, changes that would in some measure be decisive of the future fate of mankind."[59] In the late-18th century, Malthus (1798) concluded that the future for humanity was by no means rosy. He based his conclusion on the calculation that population, left unchecked, increases at a geometric rate (that is, 2, 4, 8, 16, 32, 64, and so on) while food production, a fundamental prerequisite for human life, increases arithmetically (1, 2, 3, 4, 5 and so on). His conclusion: "the power of population is indefinitely greater than the power in the earth to produce subsistence for man."[60] Given this dynamic, Malthus (1798) saw only societal

[59]Malthus, T. (1798). "Essay on the Principle of Population." Available at: http://www.ac.wwu.edu/~stephan/malthus/malthus.0.html. Last accessed on May 23, 2009.
[60]Malthus (1798).

catastrophe unless the population was kept in check. Incidentally, not all the population: specifically, he contended, the working and lower classes needed to control their population, or have control imposed upon them.

Although Malthus (1798) did not provide a definitive timetable, the catastrophe did not materialize as he predicted. Why was that? When he wrote his essay, the population of the world had not yet reached one billion people. Vast resources of the planet remained undiscovered and virtually untouched by human communities. It turns out that population growth has been geometric, as Malthus predicted, and today the population of the world is almost seven billion people and still growing. However, a flaw in Malthus' analysis is that it was centered on Europe not on global capacity and on then existing technological know-how. At the time he wrote his essay, major population centers in Europe *were* reaching their agricultural limits based on existing technology. What Malthus (1798) did not foresee was societal adaptation. Greater resources were put into production beyond Europe and new technologies enabled significant food production increases. Rather than increasing arithmetically, food production increased relative to population throughout the 18th, 19th and 20th centuries.

Although his analysis had serious shortcomings, was Malthus wrong in his concerns about the relationship between population growth and the ability of nature to provide food? Or was he simply an early voice in the un-sustainability discourse, warning that the relationship exists and is significant? My focus here is not on the historic roots of the un-sustainability story; my point in referring to Malthus is to acknowledge that "un-sustainability" concerns have been raised in other historic periods. My focus here is on the un-sustainability story that has emerged and evolved during my lifetime, the part of the human story that intersects with my personal story. To launch this exploration, I start with the story of a Nobel prize-winning discovery, and the birth of the modern environmental movement.

In 1939, a miracle synthetic chemical compound, DDT, was invented by Paul Hermann Müller, for use during World War II to kill malaria-spreading insects in the South Sea Islands to protect U.S. troops, and in Europe as a de-lousing powder. At the time, this invention was hailed as making an important contribution to human health and wellbeing. Müller subsequently received the Nobel Prize for his invention. During World War II, DDT was mass-produced, and by 1945 it was available for civilian use.

At that time, Rachel Carson, a nature writer and marine biologist, proposed an article to *Reader's Digest* about tests on DDT that were being conducted not far from where she lived in Maryland. Her proposal was rejected. In 1958, Carson received a letter from a friend in Massachusetts suggesting a link between DDT spraying and large bird kills. Again, Carson could not interest any publication in an article. As she had already amassed significant data, Carson decided to pursue research that resulted four years later in the publication of *Silent Spring*, arguably one of the most influential early books raising environmental awareness in American culture.

Silent Spring suggested that the continued spraying of DDT was not only causing a dramatic decline in bird populations, it was also posing a threat to humans by poisoning the food chain. A technology developed to support human health seemed to have the unintended consequence of potentially undermining it. The conversation about the potentially damaging environmental and human health impacts of human activities even those initiated for the most noble reasons, had begun in its modern form. Although she could not generate the interest in her ideas at the outset, Carson's persistence paid off. In response to *Silent Spring*, President John F. Kennedy appointed a special panel to study pesticides. The panel's findings supported Carson's thesis.

The 1960s saw a dramatic increase in environmental awareness and environmentally related questions about the impacts of human, particularly industrial, activities. Historian Samuel Hays (1987) suggests that the growing environmental awareness in the 1960s was the result of the significant economic and social transformations after World War II, which produced fundamental changes in public values and preferences that forced environmental concerns to the top of the political agenda (Hays, 1987, pp. 2-5).[61] Three developments, in particular, after World War II influenced the rise of the modern environmental movement. Newly affluent Americans became less willing to accept environmental degradation as the price of progress. Questions arose about new environmental hazards that were associated with new technologies, such as the atom bomb and pesticides. Advanced communications facilitated the popularization of environmental concerns as more people were exposed to stories and studies of environmental risks and the consequences of environmental damage.[62] *Silent Spring* became a voice for these concerns and the publication of the book in 1962 became influential in galvanizing the modern environmental movement into a force for political action.[63]

The conversation about environmental impacts was reinforced by widely publicized environmental disasters: over a million dead fish washed up on the banks of the Mississippi River in 1964, threatening water supplies of several

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[61]Hays, S. P. (1987). *Beauty, Health, and Permanence: Environmental Politics in the United States, 1955-1985 (Studies in Environment and History)*. Cambridge: Cambridge University Press, pp. 2-5.

[62]For more information on historic forces affecting the growth of the environmental movement, the National Park Service website provides an excellent survey of the historical literature on conservation, preservation, and environmental activism from the 19th Century to the present. Available at: http://www.nps.gov/history/history/hisnps/NPSThinking/nps-oah.htm. Last accessed May 23, 2009.

[63]Percival, R. V. (1998). "Environmental Legislation and the Problem of Collective Action," *Duke Environmental Law & Policy,* p. 9 www.law.duke.edu/shell/cite.pl?9+Duke+Envtl.+L.+&+Pol'y+F.+9+pdf. Last accessed on May 23, 2009.

towns—the cause was traced to pesticide leaks; foam from non-biodegradable cleansers and laundry detergents began to appear in rivers and creeks; Lake Erie became so polluted that millions of fish died leading to the closing of beaches along the lake.[64] Then in June of 1969, the Cuyahoga River that empties into Lake Erie caught fire and burned for eight days.

While these warnings of environmental damage in American backyards was filtering into concern and consciousness, humanity was also beginning to look beyond the boundaries of the Earth to the stars through space exploration. Our faith in technology and our ability to do the seeming impossible reached an historic high. Ironically, this exploration also served to reinforce the concern for the conditions on "spaceship earth". The first pictures of the Earth taken by humans from space revealed how beautiful, seemingly fragile and alone the Home Planet appeared in the darkness of space. The astronauts and cosmonauts, who represent the few human beings ever to take this journey, were moved by this view of the Home Planet from space. A new chapter in the story of humans together on Earth had begun. In the words of Astronaut James Irwin (1988):

> The Earth reminded us of a Christmas tree ornament hanging in the blackness of space. As we got farther and farther away it diminished in size. Finally it shrank to the size of a marble, the most beautiful marble you can imagine. That beautiful, warm, living object looked so fragile, so delicate, that if you touched it with a finger it would crumble and fall apart (p. 38).[65]

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[64]Miller, G. T. Jr., (1996). *Living in the Environment: Principles, Connections and Solutions*, 9th edition. Belmont, CA: Wadsworth, p. 41.
[65]Quoted in Kelley, K., Editor (1988). *The Home Planet*. Reading, Massachusetts: Addison-Wesley Publishing Company, p. 38

When reflecting upon his experience of viewing the Earth from space, Astronaut Russell Schweickart (1988) comments:

> As I thought about it afterward, as I relived the experience time and again, I came to understand that this was not some sentimental recollection of past glory. Rather, I began to understand that it is the personal manifestation of a relationship, which, in the absence of direct experience, we can know only intellectually. We all understand that the life systems of this planet are interrelated, that our human future depends on the wellbeing of the rain forest and the salt marsh. We know that human activity in the production of goods and services can damage and destroy the environment on which we and our children depend… What the experience of seeing this amazing planet from space does is to take it beyond the intellectual and into the personal.[66]

The ability for people around the world to share in this experience through advances in television and communications, juxtaposed with growing environmental concerns generated by burning rivers and fish kills, birthed the idea that the inhabitants of this planet needed to think globally and act locally. The late 1960s saw a previously unprecedented groundswell of grassroots support for environmental concerns, which created a political climate extremely favorable towards environmental legislation in the United States. Congress responded to increasing concerns through legislation: the first Clean Water Act (1960), the Clean Air Act (1963), the Wilderness Act (1964), the Water Quality Act (1965), the Noise Control Act (1965), the Solid Waste Disposal Act (1965), the Air Quality Act/Clean Air Act (1967), the Wild and

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[66]Schweickart, R., "Preface" in Kelley, K., Editor (1988). *The Home Planet*. Reading, Massachusetts: Addison-Wesley Publishing Company.

Scenic Rivers Act (1968), and National Trails Systems Act (1968), the National Environmental Policy Act (1969). Although the National Environmental Policy Act (NEPA) was passed in 1969, President Nixon signed it into law on January 1, 1970, heralding what is often called the environmental decade. NEPA made environmental protection part of the mission of all federal agencies.

A new agency, the Environmental Protection Agency (EPA), was created by executive order in 1970 to consolidate responsibility for environmental protection in an independent agency that would not be captive to any particular industry constituency. Congress gave EPA the responsibility for implementing the new, national regulatory legislation adopted during the 1970s. The 1970s saw more than 20 major federal environmental laws enacted or substantially strengthened, adding to the responsibilities of the nascent agency as well as a host of other federal agencies. Our social response to environmental issues was regulation. Compliance with the law became one of the primary organizing principles for environmental action.

The late 1960s and early 1970s saw a revival of the conversations concerning the relationship between population and future survival. In 1968, Stanford Professor, Paul R. Ehrlich (1968), suggested that global population growth left unabated would result in potentially dire consequences for humanity. Unlike Malthus 170 years earlier, Ehrlich (1968) provided a timetable. In his book, *The Population Bomb*, he predicted that as early as the 1970s and 1980s, millions of people would starve to death as global population outstripped global ability to supply food. The conversation, and debate, turned increasingly to concerns and calculations about the carrying capacity of the earth: the maximal population size of a given species –in this case humans – that an area – in this case the Earth – can support without reducing its ability to support the same species in the future. The conversation about carrying capacity and sustainability continues to this day.

In 1970 pressure and visibility for addressing environmental issues came from yet another quarter. Senator Gaylord Nelson and his assistant, Denis Hayes, organized the first Earth Day, using "teach-ins" focused on college campuses. The overwhelming participation and interest in Earth Day cemented a national political presence for environmental concerns. Millions of Americans became involved and voiced their alarm over the state of the Nation's water and air quality and human impacts on the natural environment. Nelson reflects:

> It was on that day that Americans made it clear that they understood and were deeply concerned over the deterioration of our environment and the mindless dissipation of our resources. That day left a permanent impact on the politics of America. It forcibly thrust the issue of environmental quality and resources conservation into the political dialogue of the Nation. That was the important objective and achievement of Earth Day. It showed the political and opinion leadership of the country that the people cared, that they were ready for political action, that the politicians had better get ready, too. In short, Earth Day launched the Environmental decade with a bang.[67]

In 1971, the Club of Rome, an international group of businessmen, scientists, and statesmen, commissioned a group of researchers at the Massachusetts Institute of Technology to investigate the long-term causes and consequences of trends in population growth, food production, resource consumption, industrial capital, and pollution using a computer model called World3. The purpose of the investigation was to project possible pathways into

[67]Nelson, G. "Earth Day '70: What It Meant" U.S. Environmental Protection Website: History. http://www.epa.gov/history/topics/earthday/02.htm. Last accessed on May 23, 2009.

the future. *The Limits to Growth*, which reported the results of the study, was published in 1972. Although I paraphrased the report's conclusions earlier, I think they bear repeating in this historical context of the early 1970s:

1. If the present growth trends in world population, industrialization, pollution, food production, and resource depletion continue unchanged, the limits to growth on this planet will be reached sometime within the next 100 years. The most probable result will be a sudden and uncontrollable decline in both population and industrial capacity.

2. It is possible to alter these growth trends and to establish a condition of ecological and economic stability that is sustainable far into the future. The state of global equilibrium could be designed so that the basic material needs of each person on earth are satisfied and each person has an equal opportunity to realize his or her individual human potential.

3. If the world's people decide to strive for this second outcome rather than the first, the sooner they begin working to attain it, the greater will be their chances of success (Meadows et al., 1972).[68]

The looming environmental crisis was global, and, although the focus of this conversational pathway has been on the United States so far, the conversation was also global. In June of 1972 the United Nations Conference on the Human Environment was convened in Stockholm, Sweden. It was the first major political conference to include the word "environment" in its title. The 1972 conference was an attempt to view environmental issues on a global scale and to seek global understanding of the connection between environmental health and socio-economic development. The conference called

[68]Meadows, D.H., Meadows, D. L., Randers, J. (1972). *The Limits of Growth. A Report for The Club of Rome's Project on the Predicament of Mankind.* New York: Universe Books.

global attention to the need "for a common outlook and for common principles to inspire and guide the peoples of the world in the preservation and enhancement of the human environment."[69] Humanity had developed the technology to go into space and to look back and see the world from a new perspective. The call to action at the Stockholm conference was to use our technology to protect, improve, and manage nature to continue to serve humanity's needs into the future.

A number of environmental disasters and studies that occurred in the 1970s fueled the increasingly vocal and global environmental concern; prominent among them: a chemical explosion in a suburb of Milan, Italy (1976); a National Academy of Science report warning of potential damage to the ozone layer from CFC's (chlorofluorocarbon) gasses (1976); the crash of the Liberian tanker Argo Merchant 27 miles off Nantucket Island leaking 9 million gallons of oil (1976); the Ecofisk oil well blowout in the North Sea (1977); a Propylene gas explosion in Tarragona Spain (1978); the wreck of the Amoco Cadiz off the coast of France (1978); the launch of the Love Canal Homeowners Association to fight local, state and federal governments over the cleanup of Love Canal (1978); and the partial meltdown of Three Mile Island nuclear power plant (1979).

Environmental legislation passed in the United States in the 1970s became more stringent and environmental regulation more extensive. A spate of bills were passed into law, among them: the Occupational Health and Safety Administration bill (1970); Federal Water Pollution Control Act (1972); Coastal Zone Management Act (1972); Ocean Dumping Act (1972); Marine Mammal Protection Act (1972); Endangered Species Act (1973); Safe Drinking Water Act

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[69]United Nations Environment Programme (1972). "Declaration of the United Nations Conference on the Human Environment," *Report of the United Nations Conference on the Human Environment* 21st plenary meeting, June 16, 1972, Chapter 11. The text of the declaration can be found on the United Nations Development Programme (UNDP) website at: www.unep.org/Documents/Default.asp?Document ID=97&ArticleID=1503.

(1974); Hazardous Waste Transportation Act (1975); Resource Conservation and Recovery Act (1976); Federal Land Policy Management Act (1976); Whale Conservation and Protective Study Act (1976); U. S. Department of Energy is created (1977); Soil and Water Conservation Act (1977); Surface Mining Control and Reclamation Act (1977); National Energy Act (1978); Endangered American Wilderness Act (1978); and Antarctic Conservation Act (1978).

Global attention on environmental issues continued to rise in the early 1980s. The United Nations World Commission on Environment and Development, generally known as the Brundtland Commission, was set up as an independent body of politicians, civil servants, and experts on the environment and development. The purpose of the Commission was to examine the critical environment and development problems in the world and to formulate proposals to address them. The basic premise of the Commission's work was to envision how human progress could be sustained through development without bankrupting the resources of future generations. The Commission's report, published in 1987 as *Our Common Future*, formulated the definition of sustainable development that is still widely used today: development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

The 1980s witnessed some of the world's most troubling and well-publicized environmental disasters and findings: in 1984, a Union Carbide Company fertilizer plant leaked methyl icocyanide in the Indian town of Bhopal, India, killing thousands and injuring tens of thousands more. In 1985 a British scientist, Joe Farman, discovered an ozone hole over Antarctica; his findings were confirmed by NASA satellite monitoring. In 1986 a nuclear reactor exploded in Chernobyl in the Ukraine, causing thousands of deaths and still undetermined long-term consequences, and a fire in a Sandoz S.A. chemical warehouse in Basel, Switzerland, created a chemical spill that contaminated drinking water for millions of people as well as killing countless

fish in the Rhine River that flows through Germany, France, Luxemburg and the Netherlands. In 1988 an oil platform exploded in the North Sea; NASA reported the ozone layer was eroding faster than originally predicted; and NASA scientist, James Hansen, warned Congress that global warming could mean drought, extreme weather, and sea-level rise. In 1989, the Exxon Valdez oil tanker spilled 11 million gallons of oil in Prince William Sound, Alaska.

As the decade turned from the 80s to the 90s many corporations began to realize that compliance with the law was simply not sufficient. Particularly with the major, highly visible, disasters associated with corporate practice that took place in the 1980s, corporations began to view environmental issues in terms of risk management and cost avoidance. During this time the U.S. military also began to receive some clear environmental wake up calls when criminal prosecutions of Army personnel for environmental crimes signaled the serious consequences that could be attached to environmental violations.[70]

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[70]U.S. v. Carr (1989), a Federal jury convicted an Army civilian maintenance foreman at Fort Drum of criminal violations of the Superfund Law for having instructed subordinates to dump and bury cans of waste paint. The court sentenced Mr. Carr to one year in prison, suspended the sentence, and ordered him to serve one year of supervised probation. Mr. Carr's supervisory chain suspended him without pay for one year pending the outcome of the case, and then demoted him to a non-supervisory position after his conviction. U.S. v. Dee (1989), a Federal jury convicted three Army civilian scientists from Aberdeen Proving Ground of criminal violations of the Resource Conservation and Recovery Act for failing to properly identify, store, and dispose of hazardous wastes generated by their chemical weapons laboratory. One of the defendants, Dr. William Dee, was the principal architect of the Army's binary chemical weapons program. The court sentenced each defendant to 1000 hours of community service and a suspended sentence of three years probation. U.S. v. Pond (1991) a Federal jury convicted the foreman of the Fort Meade wastewater treatment plant of criminal violations of the Clean Water Act for failing to conduct required sampling and tests and for submitting false test reports. The court sentenced Mr. Pond to eight months in prison and four months in-house detention to be followed by one year of supervised probation and monetary restitution. See Palmer, William D., "Environmental Compliance: Implications for Senior Commanders," *Parameters*, Spring 1993, pp. 81-92. http://www.carlisle.army.mil/USAWC/parameters/1993/palmer.htm. Last accessed on May 23, 2009.

In 1990 the Clean Air Act amendments addressed the problem of acid rain by strengthening rules on sulphur dioxide (SOx) and nitrogen oxide (NOx) emissions from electric power plants. In the same year the Pollution Prevention Act was passed. After two decades of an emerging social discourse on environmental issues, perspectives were beginning to shift from being reactive—managing and mitigating human environmental impacts—to proactive—preventing environmental damage in the first place. The conversation was beginning to transform from a perspective of humans better managing and improving nature to humans better managing and improving human activities. Nonetheless, human activities continued to cause environmental destruction, sometimes with intention and on a massive scale. For example, in 1990, Iraq invaded Kuwait and then Iraqi president Sadaam Hussein declared Kuwait the 19th province of Iraq. In early 1991, U.S. President George H.W. Bush ordered Operation Desert Shield/Storm to begin and after four days of combat the Iraqi army set fire to over 500 Kuwaiti oil wells as a final act of destruction, not only to the Kuwaiti oil industry but to the environment. The Library of Congress Country Study for Saudi Arabia reported:

> The Persian Gulf War of 1991 brought serious environmental damage to the region. The world's largest oil spill, estimated at as much as 8 million barrels, fouled gulf waters and the coastal areas of Kuwait, Iran, and much of Saudi Arabia's Persian Gulf shoreline. In some of the sections of the Saudi coast that sustained the worst damage, sediments were found to contain 7 percent oil. The shallow areas affected normally provide feeding grounds for birds, and feeding and nursery areas for fish and shrimp. Because the plants and animals of the seafloor are the basis of the food chain, damage to the shoreline has consequences for the whole shallow-water

> ecosystem, including the multimillion-dollar Saudi fisheries industry.[71]

More often environmental damage was the unintended consequence of countless human actions taking place in the day-to-day conduct of our lives and businesses. As human population, commerce, technology, and consumption increased so did the waste humanity created, the toxins that were released into the environment, and the negative environmental and human health impacts of human activities. The awareness of this damage was often more local, subtle, and diffuse than the dramatic attention brought about by an environmental disaster. It was also often more personal, showing up as human health concerns, such as the link between industrial toxins and increased incidents of cancer. An increasing number of Americans indentified themselves as environmentalists: 78% according to a 1991 Gallup poll. While 71 percent favored strong environmental protection, even at the expense of economic growth.[72]

In 1991, the authors of *The Limits to Growth* first published in 1972, updated their data for the book's 20th anniversary reissue. They report:

> In 1971 we concluded that the physical limits to human use of materials and energy were somewhere decades ahead. In 1991, when we looked again at the data, the computer model, and our own experience of the world, we realized that in spite of the world's improved technologies, the greater awareness,

[71]Library of Congress. http://countrystudies.us/saudi-arabia/17.htm
[72]Maher, T. M. (1997). "How and Why Journalists Avoid the Population–Environment Connection," *Population and Environment*, Volume 18, Number 4, March 1997.

the stronger environment policies, many resource and pollution flows had grown beyond their sustainable limits.[73]

The authors went on to point out that their examination of the global data, the World3 model, and 20 years of experience not only validated the three conclusions drawn in *The Limits to Growth*, but that they needed to be strengthened as follows:

1. Human use of many essential resources and generation of many kinds of pollutants have already surpassed rates that are physically sustainable. Without significant reductions in material and energy flows, there will be in the coming decades an uncontrolled decline in per capita food output, energy use, and industrial production.

2. This decline is not inevitable. To avoid it two changes are necessary. The first is a comprehensive revision of policies and practices that perpetuate growth in material consumption and in population. The second is a rapid, drastic increase in the efficiency with which materials and energy are used.

3. A sustainable society is still technically and economically possible. It could be much more desirable than a society that tries to solve its problems by constant expansion. The transition to a sustainable society requires a careful balance between long-term and short-term goals and an emphasis on sufficiency, equity, and quality of life rather than on quantity of output. It requires more than productivity and more than technology; it also requires maturity, compassion, and wisdom.[74]

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[73]Meadows, D.H., Meadows, D. L., Randers, J. "Beyond the Limits to Growth," in *Dancing Toward the Future*. IC#32, Summer 1992, p. 10. Available at: http://www.context.org/ICLIB/IC32/Meadows.htm. Last accessed on May 23, 2009.
[74]Meadows et al (1992).

That same year more than 1,500 leading scientists including more than half of the living Nobel laureates in science endorsed the *World Scientists' Warning to Humanity* that stated:

> Human beings and the natural world are on a collision course. Human activities inflict harsh and often irreversible damage on the environment and on critical resources. If not checked, many of our current practices put at serious risk the future that we wish for human society and the plant and animal kingdoms, and may so alter the living world that it will be unable to sustain life in the manner that we know. Fundamental changes are urgent if we are to avoid the collision our present course will bring about."[75]

We begin to see a further shift in the discourse, one that suggests that human society as a whole is in peril, on a collision course with the natural systems on which we depend, and that human activities are in danger of inflicting irreversible damage to the environment. We begin to hear suggestions from highly credible sources that humanity has become a force of nature with potentially devastating consequences and that we need to transition to a more sustainable society globally. It is no longer just a matter of humans more effectively managing nature or humans more effectively managing human activities, the very viability and continued sustainability of humanity is called into question, and not just by a handful of scientists: by 1,500 prominent scientists! It is not enough to make adjustments within our existing paradigm: we need to shift paradigms. In the late 80s, early 90s, the sustainability discourse had begun in earnest, driven by growing concerns about the unsustainable course humanity seemed to be on, and with it the call to

[75]Union of Concerned Scientists (1992). The complete statement can be found on line at http://www.actionbioscience.org/environment/worldscientists.html.

change the way we, especially in industrial societies, live on the one planet we all call home.

The tapestry of the discourse on un-sustainability that has developed since the late 1980s has multiple interwoven threads that highlight different aspects of the changing perception of the human-nature relationship. In this early period of the un-sustainability discourse, the emphasis is on symptoms, the indicators of un-sustainability that tell us that the current paradigm is no longer working and that a new one is needed. One of the most prominent threads in this tapestry is the growing conversation around human-induced climate change, perhaps one of the greatest threats to humanity today. As I tell the story of the climate change conversation, I also pick up related threads of parallel and interrelated conversations, each exploring different aspects of the larger discourse on un-sustainability.

I pick up the climate change thread in early 1980s when James Hansen (1981) and his colleagues at NASA's Goddard Institute for Space Studies (GISS) published a paper that concluded that the build up of carbon dioxide (CO_2) would lead to warming of the planet sooner than predicted by other scientists.[76] The paper was based on research Hansen had been conducting since the mid-1970s using a GISS climate model. By the early 1980s the faster computational speeds of computers and advancements made on the model had made longer runs and better conclusions possible. This early paper did not receive much public attention. The first climate prediction from the more advanced GISS model came out in 1988. In that same year, Hansen testified before the U.S. Congress about the findings of the GISS climate model, an event about which the Worldwatch Institute comments: "If any single event can be said to have put climate change on the world's policy radar, it was the

[76]Hansen, J., D. Johnson, A. Lacis, S. Lebedeff, P. Lee, D. Rind, and G. Russell (1981). "Climate impact of increasing atmospheric carbon dioxide". *Science* **213**: 957-966. doi:10.1126/science.213.4511.957.

testimony of NASA scientist James Hansen before Senator Tim Wirth's committee in Congress on June 23, 1988."[77] Reflecting on that testimony 10 years later in 2008, Hansen comments that the intention in giving the testimony was "to get some public exposure."[78] Hansen sought to make climate change part of public discourse. Although Hansen had testified several times previously, what made the potential difference in the attention given to his 1988 testimony was the fact that 1988 was a year of extreme hot weather in the U.S. Although many scientists responded to Hansen's testimony asserting that he "was ahead of the science"[79] Hansen believed that it didn't matter because within a few years it would become obvious whether or not he was right.

Hansen was not alone in his concerns about climate change. In 1988 another significant event occurred in the discourse on climate change: the World Meteorological Organization (WMO) and the United Nations Environment Program (UNEP) established the Intergovernmental Panel on Climate Change (IPCC). The purpose of the IPCC was to "provide the decision-makers and others interested in climate change with an objective source of information about climate change."[80] The IPCC is an international body made up of governments (all member countries of the WMO and UNEP are eligible to be part of the IPCC) and hundreds of scientists from all over the world. One of the key roles of the IPCC is to conduct regular climate assessments, reports based on the scientific evidence and existing viewpoints within the scientific community about climate change at the time each report is published. The climate assessments are intended to be as comprehensive as possible through "contributions from experts in all regions of the world and all relevant

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[77]Worldwatch Institute (2008). "James Hansen Talks About Climate Change." This interview with James Hansen is available at: http://www.worldwatch.org/node/5775. Last accessed on May 24, 2009.
[78]Worldwatch Institute (2008).
[79]Worldwatch Institute (2008).
[80]For more information on the IPCC, see: http://www.ipcc.ch/about/index.htm. Last accessed on May 23, 2009.

disciplines including, where appropriately documented, industry literature and traditional practices, and a two stage review process by experts and governments."[81] Through this process the IPCC has not only become an important vehicle for a continuous and expanding global conversation about this significant threat to global sustainability, the climate assessment reports also document the evolution of the climate change discourse.

Although the first IPCC Assessment in 1990 contained little observational evidence of detectable human influence on climate, the concern it raised globally about climate change served as the foundation for an international treaty called the United Nations Framework Convention on Climate Change (UNFCCC). The UNFCCC emerged as part of another global conversation on sustainability that had been initiated in 1989 through an extensive process of planning, education, and negotiations among all Member States of the United Nations: the United Nations Conference on Environment and Development (UNCED), also known as the Earth Summit. The Earth Summit was held 20 years after the first U.N. global environmental conference in Stockholm. It took place in Rio de Janeiro, Brazil, and was attended by representatives from 179 countries. It was the largest gathering of world leaders to that point in history and was unprecedented for a United Nations conference in both size and scope of its concerns.[82]

The United Nations reports:

> Hundreds of thousands of people from all walks of life were drawn into the Rio process. They persuaded their leaders to go to Rio and join other nations in making the difficult decisions needed to ensure a healthy planet for generations to come.

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[81] For more information on the IPCC, see: http://www.ipcc.ch/about/index.htm. Last accessed on May 23, 2009

[82] United Nations (2009) "The Earth Summit" available at: http://www.un.org/geninfo/bp/enviro.html. Last accessed May 24, 2009.

> The Summit's message — that nothing less than a transformation of our attitudes and behaviour would bring about the necessary changes — was transmitted by almost 10,000 on-site journalists and heard by millions around the world. The message reflected the complexity of the problems facing us: that poverty as well as excessive consumption by affluent populations place damaging stress on the environment. Governments recognized the need to redirect international and national plans and policies to ensure that all economic decisions fully took into account any environmental impact.[83]

The Earth Summit resulted in several important outcomes including the Rio Declaration on Environment and Development Principles and Agenda 21, which made sustainable development a global priority. It also produced two significant global conventions: one on protecting biodiversity, and the other was the UNFCCC,[84]which was ultimately ratified by 189 countries. The UNFCCC sets out an overall framework for intergovernmental efforts on climate change that came into effect in 1994. The treaty officially recognized the climate system as a shared resource the stability of which can be affected by industrial and other emissions of carbon dioxide (CO_2) and other types of greenhouse gases (GHG).

Although more conclusive than the first assessment, the IPCC's Second Climate Assessment, published in 1995, was still ambiguous about the degree to which climate change was connected to human generated factors. Its major conclusions were that:

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[83]United Nations (2009)
[84]United Nations (2009)

1. Greenhouse gas concentrations have continued to increase;
2. Anthropogenic (human-made) aerosols tend to produce negative radiative forcings;
3. Climate has changed over the past century;
4. The balance of evidence suggests a discernible human influence on global climate;
5. Climate is expected to continue to change in the future; and
6. There are still many uncertainties.

In chapter 8, the assessment notes: "these results indicate that the observed trend in global mean temperature over the past 100 years is unlikely to be entirely natural in origin. More importantly, there is evidence of an emerging pattern of climate response to forcings by greenhouse gases and sulphate aerosols in the observed climate record. Taken together, these results point towards a human influence on global climate." (ch 8, summary, p 412).[85] Despite the uncertainties, the Second Assessment served as the basis for negotiations over the Kyoto Protocol, an agreement that was made under the UNFCCC. Countries that ratified the Kyoto Protocol made commitments to reduce their emissions of CO_2 and five other greenhouse gases (GHGs), or alternatively they would engage in a program of emissions trading[86] to offset the production of GHGs, if they maintained or increased emissions of these gases. After two and a half years of intense negotiations, the Kyoto Protocol was adopted on December 11, 1997.

In September 2001, the IPCC released its Third Assessment affirming once again that the global climate is changing in ways that cannot be

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[85]IPCC Second Assessment Report: see http://www.ipcc.ch/ipccreports/assessments-reports.htm. Last accessed on May 24, 2009; and http://en.wikipedia.org/wiki/IPCC_Second_Assessment_Report. Last accessed on May 24, 2009.

[86]Emissions trading is a system to provide economic incentives to control and reduce carbon emissions through trading permits to emit carbon dioxide and other greenhouse gases.

accounted for by natural variability. The Third Assessment confirmed that global mean temperatures continue to rise. For the first time, the *Assessment* asserts that the major cause of warming in the prior three decades was from human effects, primarily from the use of fossil fuels. These emissions, the IPCC concluded, are changing the composition of the planet's atmosphere. The Assessment projected that major climate changes are likely under all plausible scenarios for the future, and that these changes are likely to be economically and socially disruptive. Despite the growing scientific consensus, critics called the reports alarmist, suggesting that the IPCC exaggerated its findings, and that its conclusions were based on questionable science. Still others suggested that far from exaggerating the findings, the IPCC was too conservative and actually underestimated the dangers and understated the risks posed by climate change.

More than seven years after its adoption, the Kyoto Protocol entered into force on February 16, 2005 after Russia, then accounting for 6.2% of global GHG emissions, ratified the agreement in 2004. As of this writing, the United States, emitting one of the highest levels of GHG in the world, has still not ratified the Protocol, justifying its position with the claim that doing so would put the U.S. economy at a competitive disadvantage. This is expected to change under the Obama Administration. China, estimated to have surpassed the U.S. in GHG emissions in 2008, ratified the Protocol, but is not required under the terms of the agreement to commit to GHG reductions. Some estimates suggest that China's GHG emissions will continue to increase by 10-11% a year, about 10 times faster than in the U.S.[87]

By 2006 the global conversation about climate change was becoming more prevalent and more urgent. In October 2006, Sir Nicholas Stern, Second

[87]Harris, R. (2008). "Greenhouse Gas Emissions Rise in China," transcript from radio broadcast on *All Things Considered*, March 14, 2008, National Public Radio, available on line at: http://www.npr.org/templates/story/story.php?storyId=88251868. Last accessed May 24, 2009.

Permanent Secretary of the British Treasury, released the *Stern Review of The Economics of Climate Change* (2006), which set out the following conclusions:

1. The impacts of climate change are already being felt and, if GHG emissions are not curbed, could soon become catastrophic.

2. The emissions intensity of economic activity needs to be at around 25% of current levels by mid-century, with total emissions at 20% of current levels before the end of the century.

3. The cost of doing nothing could reach 20% of gross global product by mid-century, with conservative estimates suggesting at least 5%; resulting in the worst economic depression in modern history.

4. The cost of action to reduce GHG emissions and to stabilize atmospheric concentrations in the range of 500-550ppm without overshooting is likely to be in the order of 1% of gross global product.

5. Therefore the benefits of action far outweigh the costs.

6. Many of the technologies and changes needed to reduce emissions already exist. Some are already profitable and provide opportunities to visionary businesses; others require greater active policies to make them financially attractive.

7. The key mitigation policies required are: the establishment of a long-term global price for carbon; increased investment in R&D, development and demonstration of low carbon technologies; and dismantling of barriers to behavioral change.

8. Investment and policies should also be made for adaptation: even if we succeed in cutting emissions we are already locked into serious climate impacts, especially in developing countries.

9. While many measures can be implemented domestically, international collaboration is required in a range of areas, including carbon pricing, technology development, curbing deforestation and funding for adaptation and mitigation in developing countries.[88]

On February 2, 2007, with the release of its Fourth Assessment, the IPCC uses the strongest language to that date, stating that there is a greater than 90% certainty that human activities led by burning fossil fuels, account for most of the world's warming in the previous 50 years. Warming of the climate system, the Assessment declares, is "unequivocal." The Assessment suggests that GHG emissions need to be reined in by 2020—a mere 11 years from the writing of this dissertation—if humanity is to avoid catastrophic climate change. The report also advises that regardless of what actions are taken, warmer temperatures and rises in sea levels can be expected well into the future: the world is already committed to some level of climate change. If no actions are taken, or if action is significantly delayed, the changes in the global climate during the 21st Century will very likely be larger than those in the 20th Century, and they could be catastrophic.[89]

The Fourth Assessment projects that warming is expected to be greatest over land and at most high northern latitudes, and least over the Southern Ocean and parts of the North Atlantic Ocean. Temperature extremes, heat waves, and heavy precipitation events will become more frequent. Future tropical cyclones (typhoons and hurricanes) will become more intense, with

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[88]Stern, N. et al (2006). *Stern Review of The Economics of Climate Change*. A copy of the Stern Review Report is available on line at http://www.hm-treasury.gov.uk/stern_review_report.htm. Last accessed on May 24, 2009.
[89]The IPCC Fourth Assessment reports are available on line at: http://www.ipcc.ch/.

larger peak wind speeds and more heavy precipitation. Precipitation patterns worldwide will change. Despite the Assessment's dire outlook, most scientists suggest that the worst disasters—huge sea level rises and the most catastrophic storms and droughts—can possibly still be avoided if strong action is forthcoming immediately. Local, national and international action is needed not only to mitigate as much as possible the human impact on climate change, but also to adapt to the changes that the IPCC suggest are now very likely to occur.

In mid-2008, Lord Stern revised the projections made in the 2006 report, indicating that the world's climate is changing faster than scientists projected. In November 2008, speaking with Leila Abhoud of the *Wall Street Journal* Stern asserts that the world can't afford inaction on climate change. Stern comments:

> No matter what happens we are going to have to adapt to changes in our climate. The question is whether we have to adapt to a change of 1-2 degrees centigrade, or more like 5-6 degrees centigrade. We might be able to handle the former; the latter would cause massive relocations of population and likely spark conflicts around the world. Southern Europe would become a desert, for example. There are still great gains to be made by acting now to reduce emissions. We're now at around 430-435 ppm in the atmosphere. If the international community takes serious action to reduce emissions, committing to deep cuts . . . then we can probably stay below 500 ppm. Doing that would drastically reduce the risks posed by climate change, and head off the kinds of catastrophes that

would happen if global temperatures rose by 5-6 degrees. We're playing for very high stakes here.[90]

How does this fit into the expanding un-sustainability story? Atmospheric concentrations of GHGs are already at 430 parts per million (ppm), compared to 280 ppm before the industrial revolution, representing an increase in GHGs of more than 50%. GHGs are expected to reach 550 ppm by 2050, even at current emission levels. With the accelerating emissions anticipated based on the current course of global economic growth and development, 550 ppm could be reached by as early as 2035, bringing at least a 77% chance of exceeding a two degree Celsius average temperature rise, the maximum beyond which scientists believe dangerous climate change impacts kick in. Even a two degree Celsius increase some scientists believe could be enough to trigger melting of the Greenland ice sheet, which would have a major impact on sea levels globally—NASA scientists have calculated that there will be a more than 20 foot rise in ocean level if the entire Greenland ice sheet were to melt. If serious action is not taken to cut emissions, the temperature rise could exceed 5 degrees by the end of the century, and this is "unknown territory" for humans and greater than the difference in temperature between the present and the depths of the last ice age.

The impacts of a temperature rise of 3-4 degrees Celsius include a significant probability of:

- Entire regions experiencing major declines in crop yields;
- Sea level rise threatening London, Shanghai, New York, Tokyo, Hong Kong, and Cairo;

[90]Johnson, K. "Stern Truths: Climate Guru Still Hopeful Ahead of Polish Summit" available on Wall Street Journal blog: http://blogs.wsj.com/environmentalcapital/2008/11/26/stern-truths-climate-guru-still-hopeful-ahead-of-polish-summit/. Last accessed on May 24, 2009.

- Collapse of the Amazon rainforest;
- Collapse of the Gulf Stream and irreversible climate feedbacks e.g. methane release;
- Collapse of all the world's major glaciers and major flood risks;
- Loss of up to 40% of the world's species; and
- Major health epidemics.

Political leadership around climate change in the U.S., which had been sorely lacking, began to shift even in the Bush Administration. In his 2007 State of the Union Address former President George W. Bush, after leading an administration that was overtly skeptical or outright in denial about climate change, noted for the first time in a major policy speech, the importance of addressing the challenge of global climate change. However, the U.S. position continued opposition to mandatory GHG reductions citing a concern that the imposition of a carbon cap in the US could lead to the transfer of jobs and industry abroad to countries that do not have such a carbon cap, and that this could damage the US economy.

One of the primary objections that the Bush Administration had made to climate change measures is the fact that countries like China and India are not required to make commitments to reduce GHGs, despite the fact that their emissions are growing. Stern remarks:

> I've worked in China and India for many years, and in the past few months I traveled to India, China and Brazil. There is a real deepening of engagement on the issue that is remarkable.

> Yet at the same time there is a real and tangible anger at industrialized countries, which contributed the most to the problem over the past 100 years, as they grew rich on a carbon-heavy economy. For developing countries, it's really important that any climate deal be equitable. . . [I]f rich countries commit to at least 80% cuts in emissions by 2050 from 1990 levels, then developing countries will be willing to sign on to their own emissions reductions starting perhaps in 2020. They also want two more things: first, more financial assistance from rich countries, by expanding the [Clean Development Mechanism] market or other investments. Second, they want to be able to transfer technologies from the industrialized West to their countries at more reasonable prices. These are the key things the developing countries are looking for in the upcoming negotiations.

Despite lack of action on the part of the U.S. leadership, at this writing, the discourse on climate change in the United States is clearly shifting, and the push for regulation is increasing. Even during the Bush Administration and before the release of the IPCC report and the President's State of the Union Address, a diverse group of US-based businesses and leading environmental organizations formed a coalition called the United States Climate Action Partnership (USCAP), which called on the Federal government to quickly enact strong national legislation to achieve significant reductions of GHG emissions. As early as January 2007 USCAP[91] issued a set of principles and recommendations calling for a policy framework on climate change.

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[91]As of December 2008, USCAP included the following organizations: Alcoa, American International Group, Inc,, Boston Scientific Corporation, BP America Inc. Caterpillar Inc., Chrysler LLC, ConocoPhillips, Deere & Company, The Dow Chemical Company, Duke Energy, DuPont, Environmental Defense, Exelon Corporation, Ford Motor Company, FPL Group, Inc., General Electric, General Motors Corp., Johnson & Johnson, Marsh, Inc., National Wildlife Federation, National Resources Defense Council, The Nature Conservancy, NRG Energy, Inc., PepsiCo, Pew Center on Global

In its report entitled *A Call for Action,* USCAP underscored the need for urgent action. The report warned that each year of delay in taking action to control emissions increased the risk of unavoidable consequences that could mean even steeper reductions in the future, at potentially greater economic cost and social disruption. Acting immediately, the report contends, expands the array of response options; narrows the uncertainties associated with changes to the climate; and could lower the costs of mitigation and adaptation.

In 2007, the Democrat-led U.S. legislature introduced a range of bills targeting climate change, most of which call for some sort of cap-and-trade policy to create market incentives to cut GHG emissions by putting a limit on the amount of GHG emissions that are allowed and then enabling companies to trade carbon credits. Despite widespread congressional support for climate change legislation, little action occurred in 2007. Throughout the 2007 campaigns for the U.S. presidency, climate change was mentioned as a priority.

In mid-February 2007, more than 100 legislators and government officials from 20 of the largest energy consuming countries met on Capitol Hill in Washington, DC to take steps towards what some call a post-Bush consensus on climate change, including efforts to persuade three of the world's top five polluters—the US, China and India—to actively join global efforts to tackle climate change. Although non-binding, an informal agreement was reached wherein delegates agreed that in the post-Kyoto regime developing countries, as well as rich countries, would have to face targets for cutting GHG emissions. Agreement was also reached that a global market should be formed to cap and trade carbon dioxide (CO_2) emissions. The declaration that came out of the meetings carried no formal weight, but is another indicator of a serious shift in direction for the world's most powerful nations.

Climate Change, PG&E Corporation, PNM Resources, Rio Tinto, Shell, Siemens Corporation, World Resources Institute, and Xerox Corporation.

In March 2007, the European Union took a leadership stance on GHG emission reductions. EU countries set a *binding* target to reduce GHG emissions by 20% by 2020, indicating that renewable energy sources would make up 20% of EU energy consumption by 2020. German Chancellor Merkel, serving as President of the EU, declared the hope that the ambitious targets set by the EU could serve as an example for others—particularly the US, India, and China—to implement more attractive and better climate protection goals declaring: "It's not five minutes to midnight, it's five minutes after midnight."[92]

In the same month, at the G8+5 meeting of Environment Ministers, consensus was reached on a range of issues including two important points: (1) a general acceptance of the scientific explanation for the causes of global warming and (2) that industrialized nations need to reduce carbon dioxide emissions more than mandated by current agreements. Officials also agreed that industrialized countries have been responsible for most GHG emissions in the past and that developed countries should help developing countries reduce their emissions. Later in the month, a coalition of institutional investors with more than $4 trillion under management called for the US government to set national, mandatory standards to cut GHG emissions. On March 21, former U.S. Vice President Al Gore testified before Congress that although climate change clearly represents an urgent global emergency, it is not too late to deal with it. He urged the Democratic-controlled Congress to act to cut CO_2 and other GHGs by 90% by 2050 in order to avert a global crisis. Among other actions, achieving that goal, Gore suggested, would require a ban on any new coal-burning power

[92]Castles, S. (2007). "EU ministers deadlocked on binding target for green power," *The Independent-World*. Available at: http://www.independent.co.uk/news/world/europe/eu-ministers-deadlocked-on-binding-target-for-green-power-439448.html. Last accessed on May 25, 2009.

plants—a major source of industrial CO_2—that lack state-of-the-art controls to capture the gases.[93]

Throughout 2007, climate change was an agenda priority for the G8+5 nations (G8=Canada, France, Germany, Italy, Japan, Russia, the United Kingdom and the United States plus Brazil, China, India, Mexico and South Africa) receiving priority attention at its meeting of Environment Ministers in March 2007 at Potsdam and in May at a preparatory meeting to the G8 June Summit. At the G8 Summit held in June 2007 in Heiligendamm, Germany, a tentative agreement was reached to halve global CO_2 emissions by 2050. At the writing of this dissertation, the details of how the G8 countries will achieve this goal remain to be worked out as part of a post-Kyoto regime to be negotiated and an agreement adopted by 2009. Climate change remained high on the agenda for G8 nations at the Gleneagles Dialogue with Energy and Environment Ministers in September 2007 and at the December 2007 discussions at UNFCC meeting in Bali. The attention in these meetings is expected to focus primarily on (a) what a post-Kyoto international collaboration would look like, and (b) what mechanisms are needed for effectively negotiating and enforcing the agreements of a post-Kyoto Accord.

In 2008, a group of 10 scientists from the United States, the United Kingdom and France, revised the theory that we need to stay below 500 ppm to reduce the major risks of climate change. To avert climate change disasters, they assert, we need to reduce atmospheric carbon dioxide (CO_2) below the levels that already exist today, 385ppm. This 2008 study uses improved data on the Earth's climate history as well as ongoing observations of change, especially in the polar-regions. The report concludes:

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[93]Alfano, S., (2007). "Gore implores Congress to Save the Planet," CBS News, available at: http://www.cbsnews.com/stories/2007/03/21/politics/main2591104.shtml?source=RSSattr=HOME_2591104. Last accessed on May 25, 2009.

Humanity today, collectively, must face the uncomfortable fact that industrial civilization itself has become the principal driver of global climate. If we stay our present course, using fossil fuels to feed a growing appetite for energy-intensive life styles, we will soon leave the climate of the Holocene, the world of prior human history. The eventual response to doubling preindustrial atmospheric CO_2 likely would be a nearly ice-free planet.

Humanity's task of moderating human-caused global climate change is urgent. Ocean and ice sheet inertias provide a buffer delaying full response by centuries, but there is a danger that human-made forcings could drive the climate system beyond tipping points such that change proceeds out of our control. The time available to reduce the human-made forcing is uncertain, because models of the global system and critical components such as ice sheets are inadequate.

However, climate response time is surely less than the atmospheric lifetime of the human-caused perturbation of CO_2. Thus remaining fossil fuel reserves should not be exploited without a plan for retrieval and disposal of resulting atmospheric CO_2. *Paleoclimate evidence and ongoing global changes imply that today's CO_2, about 385 ppm, is already too high to maintain the climate to which humanity, wildlife, and the rest of the biosphere are adapted.* Realization that we must reduce the current CO_2 amount has a bright side: effects that had begun to seem inevitable, including impacts of ocean acidification, loss of fresh water supplies, and shifting of climatic zones, may be averted by the necessity of finding an energy course beyond fossil fuels sooner than would otherwise

have occurred. (Emphasis added.)[94]

Throughout 2008 climate change was on the agenda of local, national, regional and international meetings, too many to recount here, culminating in a global climate change conference with 10,000 delegates from 190 countries, engaging in a two-week conversation on forming an agreement to replace the 1997 Kyoto Protocol. This conference was in preparation for a newly drafted agreement that is being negotiated over the course of 2009.

Expectations run high that the Obama Administration will act quickly regarding climate change. As of this writing, an "historic, comprehensive energy bill — the first to tackle climate change by reducing carbon emissions is before the U.S. Congress." The bill won approval from a major House committee on Thursday, May 21, 2009, which sets the stage for a national debate on a plan to gradually wean the U.S. from fossil fuels and sets targets for national emissions reductions: a 20 percent cut, from 2005 levels, by 2020; a 42 percent drop by 2030; and an 83 percent cut by 2050.[95] Although a significant step forward, global critics point out that it is not enough. In response, the U.S. Special Envoy for Climate Change, Todd Stern, warned that domestic politics will not allow the United States to deepen it commitment for cutting carbon pollution over the next decade despite growing international pressure. "We are jumping as high as the political system will tolerate," Stern said. "We completely agree it is vital that developed countries get a path that is ambitious and consistent with what science is telling us to do. But perfect is the enemy of good -- you can insist on that, say you really need to have it, and

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[94]Hansen, J., Sato, M., Kharecha, P., Beerling, D., Masson-Delmotte, V., Pagani, M., Raymo, M., L. Royer, D. L., Zachos, J. C. (2008) "Target Atmospheric CO2: Where Should Humanity Aim?" Available on line at: http://www.columbia.edu/~jeh1/2008/TargetCO2_20080407.pdf. Last accessed on May 24, 2009.

[95]Davies, F., (2009). "Energy bill to combat climate change takes a leap forward," reported in the Silicon Valley Mercury News, available at: http://www.mercurynews.com/breakingnews/ci_12423920?nclick_check=1. Last accessed on May 25, 2009.

you can end up with nothing."[96] Meanwhile on May 20, 2009, *Science Daily* reports on a new report saying "The most comprehensive modeling yet carried out on the likelihood of how much hotter the Earth's climate will get in this century shows that without rapid and massive action, the problem will be about twice as severe as previously estimated six years ago - and could be even worse than that."[97]

The locus of discourse around climate change has shifted significantly in the last few years. No longer is climate change marginalized as primarily an "environmental" even alarmist conversation; it is increasingly center stage as matter of economic and political discourse and priority. The example of the discourse on climate change provides an excellent example of how the conversation has moved from a scientific conversation engaged in by only a handful of people in the mid-1970s, to a conversation that engages millions of people around the world. It is an example as well of a social conversation moving through the critical phase of paradigm change and into the transformational phase. The reality of human-induced climate change is becoming more generally accepted. As the implications of this reality are more clearly understood and articulated, the type and degree of action it calls for is becoming more fully elaborated. We are still in the early stages of this transformational phase, where the two middle circles overlap in the schematic; however, and the conversations are moving in the direction of creating a new story rather than hanging on blindly to the old one.

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[96]Hood, M., "US won't speed up emissions cuts," AFP, May 25, 2009, Available at: http://www.google.com/hostednews/afp/article/ALeqM5gesV8yQrLC9Dr6o_LEIuWnUUPuAQ. Last accessed on May 25, 2009.

[97]Science Daily (2009) "Climate Change Odds Much Worse Than Thought." Available at: http://www.sciencedaily.com/releases/2009/05/090519134843.htm. Last accessed on May 25, 2009. Article reference: A.P. Sokolov, P.H. Stone, C.E. Forest, R. Prinn, M.C. Sarofim, M. Webster, S. Paltsev, C.A. Schlosser, D. Kicklighter, S. Dutkiewicz, J. Reilly, C. Wang, B Felzer, H.D. Jacoby. Probabilistic forecast for 21st century climate based on uncertainties in emissions (without policy) and climate parameters. *Journal of Climate*, 2007; preprint (2009): 1 DOI: 10.1175/2009JCLI2863.1

This social discourse on climate change is also an example of how the conversation is taking place across multiple sectors of society, across disciplines, and across generations. For example, a relatively new organization that is gaining some attention is simply called "350." This organization is working on building a movement around the goal of achieving a limit 350 ppm CO_2 in the atmosphere. To increase and focus the conversation even further, 350 is declaring October 24 a day of climate action and creating a call to action to "stand together as one planet and call for a fair global climate treaty. United by a common call to action, we'll make it clear: the world needs an international plan." Convinced that "with over 4000 languages spoken around the world, the best way to communicate about climate change is probably not with a bunch of words." In keeping with the communication media of Web 2.0, 350 has distilled "the science of global warming and vision of the 350 movement into a 90 second video" to facilitate expanding the conversation virally across the Internet.[98]

As significant as the discourse on climate change is, it is only one of several threads in the un-sustainability conversation. Another important thread is referred to as *globalization*, an umbrella term used to encompass a range of social, technological, and economic dynamics including advances in technology, communications, and mobility. These dynamics simultaneously facilitate the movement of people, goods, capital, and information as well as the convergence and integration of markets, economies, cultures, and lifestyles globally. The world of the 21st Century is integrated and interdependent globally and technologically as never before. Many believe that this growing integration and interdependence is *the* best way to promote growth and generate wealth globally. The spread of wealth, jobs, technologies and more efficient ways to engage in global trade and participate in the global

[98]See the 350.org website: http://www.350.org/

economy, in time, the story goes, will raise living standards, and reduce both poverty and inequality.

Economic indicators at the beginning of the 21st Century seemed to support this story and suggested that prospects for the developed capitalist economies and many parts of the developing world looked bright. Despite financial crises that occurred in the late 1990's, global markets appeared to be recovering and economic signs seemed to point to strong global economic growth. During the second half of the 20th Century the global economy more than quintupled, and in 2007 many speculated that in the 21st Century continued economic expansion would lead to increased global per capita income. Then in late 2007, after years of strong growth, the global economy began to spin into an economic crisis described by the International Monetary Fund in its *World Economic Outlook* (2008):

> Over the past year, the global economy has been buffeted by the deepening crisis in financial markets, by major corrections in housing markets in a number of advanced economies, and by surges in commodity prices. Indeed, the financial crisis that erupted in August 2007 after the collapse of the U.S. subprime mortgage market entered a tumultuous new phase in September 2008 that has badly shaken confidence in global financial institutions and markets. Most dramatically, intensifying solvency concerns have triggered a cascading series of bankruptcies, forced mergers, and public interventions in the United States and Western Europe, which has resulted in a drastic reshaping of the financial landscape.

> Moreover, interbank markets have virtually locked up as trust in counterparties has evaporated.[99]

On December 1, 2008, the National Bureau of Economic Research officially confirmed that the U.S. had been in a recession since December 2007. How long, how deep, and how extensive this recession will be are questions still being debated in the public discourse at the writing of this document.

How the current economic crisis will impact economies and communities that are most vulnerable is a story that remains to be written. Even under conditions of global economic progress, the promise of economic expansion and progress does not benefit everyone. One-quarter of the global population—1.5 billion human beings—lives in severe poverty even after a period of global economic growth and prosperity. What will the impact be of the global economic downturn on this portion of human society? The World Bank projects that developing countries will become much more vulnerable, "with dwindling capital flows, huge withdrawals of capital leading to losses in equity markets, and skyrocketing interest rates."[100] What is more, with high food and fuel prices, the World Bank estimates that 100 million people have already been driven into extreme poverty. "With every one percent decline in developing country growth rates, approximately 20 million more people are added to this rapidly swelling number."[101]

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[99]International Monetary Fund (2008). World Economic Outlook, October 2008, Financial Stress, Downturns, and Recoveries. Washington, DC: International Monetary Fund., p. 21.
[100]World Bank (2008). *The Financial Crisis: Implications for Developing Countries.* Available at: http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/0,,contentMDK:21974412~pagePK:64165401~piPK:64165026~theSitePK:469372,00.html. Last accessed May 25, 2009.
[101]World Bank (2008).

In the year 2000 concerns about the impact of globalization on the world's poor resulted in 189 nations adopting the United Nations Millennium Declaration stating that:

> We believe that the central challenge we face today is to ensure that globalization becomes a positive force for all the world's people. For while globalization offers great opportunities, at present its benefits are very unevenly shared, while its costs are unevenly distributed. We recognize that developing countries and countries with economies in transition face special difficulties in responding to this central challenge. Thus, only through broad and sustained efforts to create a shared future, based upon our common humanity in all its diversity, can globalization be made fully inclusive and equitable. These efforts must include policies and measures, at the global level, which correspond to the needs of developing countries and economies in transition and are formulated and implemented with their effective participation.[102]

The Declaration set out eight Millennium Development Goals to be achieved by 2015: eradicate extreme poverty and hunger; achieve universal primary education; promote gender equality and empower women; reduce child mortality; improve maternal health; combat HIV/AIDs, malaria and other diseases; ensure environmental sustainability; and develop a global partnership for development.

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[102]United Nations. United Nations Millennium Declaration. Available at http://www.un.org/millennium/declaration/ares552e.htm. Last accessed on May 25, 2009.

By 2007 with less than a decade remaining to meet the Millennium Development Goals, global economic growth had helped to cut poverty in many nations, in some cases drastically. The volume of trade was growing worldwide and private capital flows to developing countries were increasing. Progress was being made in many countries to improve primary education completion, raise immunization coverage, and lower child mortality. Although these gains were impressive on a global scale, they were unevenly distributed. Rapid growth and job creation in some regions, such as East and South Asia, were offset by increased poverty in other regions, such as Sub-Saharan Africa. Infrastructure was deteriorating in many countries where capital to modernize water, sanitation and transportation was lacking while governance concerns did little to inspire the confidence of investors. As the continuing repercussions of a global economic downturn reverberate throughout developing country economies, the prospects of meeting the Millennium Development Goals will become increasingly doubtful.

A global system is emerging characterized by increasing financial and economic interdependence and vulnerabilities, increasing and widespread information and transportation technologies, the adoption of western lifestyles and values, and increasing social and environmental pressures. Economic growth is considered to be the dominant driver of global development and future prosperity, and market forces and mechanisms are seen to be the dominant instruments of that growth. High levels of interconnectedness in financial markets, communications, and the flow of goods and services, make local and national issues increasingly global. Financial, economic, social and environmental problems in one country or region often have significant financial, economic, social or environmental impacts on other countries or regions, as do the solutions local or national actors apply to those problems. Inequalities in wealth, civil liberties, and access to basic human needs such as food and water lead to rising social tensions and conflicts in many parts of the world. In China, for example, despite its economic progress—in many cases

because of it—there is a growing grass-roots backlash against the large-scale industrial contamination and degradation of China's freshwater supplies and soil.

Yet another key thread of the current un-sustainability discourse focuses on the health of the ecosystems upon which human life depends and within which human activities are coordinated and carried out. In 2005, the challenge of ecosystem decline became even more evident with the findings of the Millennium Ecosystem Assessment, [103] one of the most authoritative assessments of the planet's ecosystem health ever conducted. The Assessment, initiated in 2001, gauges the consequences of ecosystem change for human wellbeing. Its purpose is to provide a scientific basis for action that ensures the conservation and sustainable use of those systems. More than 1,360 experts worldwide, from 95 countries representing a partnership of UN agencies, conventions, governments, businesses and non-governmental organizations (NGOs) produced five technical volumes and six synthesis reports that provide a scientific appraisal of the conditions and trends in the world's ecosystems and the services they provide (such as clean water, food, forest products, flood control, and natural resources); how changes in ecosystem services have affected human wellbeing, how ecosystem changes may affect people in future decades; and response options that might be adopted at local, national, or global scales to improve ecosystem management and contribute to human well-being and poverty alleviation.

The Assessment synthesizes information from scientific literature, datasets, scientific models, private sector resources, practitioners, local communities and indigenous peoples. Many more experts continue to prepare more than 20 sub-global assessments. The findings, contained in multiple reports, are available as downloads on line on the Millennium Ecosystem

[103]United Nations. Millennium Ecosystem Assessment website: http://www.maweb.org/en/index.aspx. Last accessed on May 25, 2009.

Assessment website.[104] The Assessment reports that during the last half of the 20th Century humans have altered ecosystems more rapidly and more extensively than in any other period of human history. Although these changes contribute to net gains in human wellbeing, they also impose increasing costs in terms of ecological degradation that are disproportionately carried by the poor. If the trends that are evident at the beginning of the 2000's continue unabated, the Assessment asserts, the degradation of ecosystem services could grow significantly worse and present a barrier to both advancing economic growth and achieving the Millennium Development Goals. The experts concluded that many options still exist to conserve or enhance specific ecosystem services in ways that would reduce negative trade-offs or provide positive synergies with other ecosystem services. However, the Assessment asserts, the challenge of reversing the degradation of ecosystems while at the same time meeting increasing demands for ecosystem services requires significant changes in policies, institutions and practices.

The Millennium Ecosystem Assessment document *Living Beyond Our Means* cautions:

> At the heart of this assessment is a stark warning. Human activity is putting such strain on the natural functions of Earth that the ability of the planet's ecosystems to sustain future generations can no longer be taken for granted.
>
> The provision of food, fresh water, energy, and materials to a growing population has come at considerable cost to the complex systems of plants, animals, and biological processes that make the planet habitable.
>
> As human demands increase in coming decades, these systems

[104] http://www.maweb.org/en/index.aspx. Last accessed on May 25, 2009.

> will face even greater pressures—and the risk of further weakening the natural infrastructure on which all societies depend.[105]

The Assessment concludes that if humanity wants to protect and improve our future wellbeing, we need to make "wiser and less destructive use of natural assets. This in turn involves major changes in the way we make and implement decisions."[106]

The 1992 Earth Summit called for global attention to and balancing of economic, social, and environmental needs and outcomes in human activities. Since that time, this tri-dimensionality has become known as the "triple-bottom-line" of sustainability, a metaphorical term meant to indicate the imperative of measuring human progress and wellbeing by more than one—economic—bottom line. This imperative is driven by the growing awareness, and discourse generated by this awareness, that humanity is on an un-sustainable trajectory.

The un-sustainability story is an evolving, expanding, and accelerating global conversation. The examples I have provided are only some key highlights of that conversation. I expect that this conversation will become even more prominent in the coming years because the stakes are so high. As Paul Ehrlich and his wife and co-author Anne Ehrlich point out in their 2004 book *One With Nineveh: Politics, Consumption, and the Human Future*:

> The dire environmental dangers our civilization faces are certainly no secret, even if they are more ignored than acknowledged in the halls of government and offices of the

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[105]United Nations. (2005). Millennium Ecosystem Assessment, 2005. *Living Beyond Our Means,* pg. 5. This document is available on line at http://www.maweb.org/en/index.aspx. Last accessed May 25, 2009.
[106]United Nations (2005).

> mass media. For decades, environmental scientists have warned of interconnected environmental trends, such as losses of plant and animal diversity, rapid climate change, and the spread of toxic chemicals over Earth, that, unless reversed, could ultimately bring down our civilization. Unlike regional ecological collapses experienced in the past . . . this time the collapse would be *global* (p.7).[107]

How can I sum up these conversational threads? Awareness of and discourse about un-sustainability is broad, global, and growing. Countless books, articles, websites, white papers, reports, documentaries, news specials, educational programs, scientific studies, and other sources raise this question: *how do we go on togethe*r? How do we change the story of un-sustainability to one of sustainability? I will provide reflections on these questions in section C, where I seek a fusion of horizons. At this point, I turn to the nascent story of sustainability.

The story of "sustainability"

Is it possible that the concept of sustainability is quite simply the name we give to the transformational phase of our paradigm shift? As the catastrophic implications of the "un-sustainability" story become more clearly recognized, pronounced, and articulated, and more widely accepted through the social discourse in which we engage, we seek the alternative: sustainability. In the beginning, we don't know yet what it means. What we know is that we do not want the implications of un-sustainability. Raskin et al (1996) suggest that sustainability can be viewed as a normative concept in that the call to protect ecological systems for future generations is inherently an

[107]Ehrlich, P. and Ehrlich, A. (2004). *One With Nineveh: Politics, Consumption, and the Human Future*. Washington: Island Press, P. 7.

ethical appeal.[108] It is simply morally wrong to undermine the life supporting systems of the planet for current and future generations, and potentially bring about the collapse of ecological and societal systems on a global scale from which we may not recover.

Jared Diamond (2005), author of *Collapse, How Societies Choose to Fail or Succeed,* examines the collapse of civilizations throughout history, looks at the challenges facing modern society, and asks what social, political and economic choices we can make today to avoid the fate of the civilizations he studied. Diamond points out that there are important differences between the modern world and the ancient civilizations he studied. He asserts, echoing the Ehrlichs (2004), that today's larger population, more potent destructive technology, and interconnectedness pose the risk of a global rather than a local collapse. Diamond (2005) details a number of the problems he sees facing the world and warns: "If we don't make a determined effort to solve them, and if we don't succeed at that effort, the world as a whole within the next few decades will face a declining standard of living, or perhaps something worse (p. 521)."[109] Diamond goes on to say that this is the reason that he has decided to devote the rest of his career to "convincing people that our problems have to be taken seriously and won't go away otherwise (p. 521)."[110] He posits that these problems are solvable *if* we choose to pay attention to them and solve them:

> While we do face big risks, the most serious ones are not the ones beyond our control, like a possible collision with an asteroid of a size that hits the Earth every hundred million years or so. Instead they are ones that *we are generating*

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[108]Raskin, P., M. Chadwick, T. Jackson, and G. Leach, (1996). *The Sustainability Transition: Beyond Conventional Development*. Stockholm, Sweden: Stockholm Environment Institute.
[109]Diamond, J. (2005). *Collapse*. New York, New York: Viking, Pg. 521
[110]Diamond (2005) p. 521.

> *ourselves*. Because we are the cause of our environmental problems, we are the ones in control of them, and we can choose or not choose to stop causing them and start solving them (pp. 521-22).[111] (Emphasis added.)

I accept the normative perspective that undermining the life supporting systems and ecosystem services of the planet for current and future generations of humans and other species is fundamentally and morally wrong. I will not focus any further on the normative perspective here, other than to recognize it as my bias. What Diamond raises is a fundamental premise: that we can choose or not choose to recognize and solve our environmental problems. Brian and I share Diamond's quest to:

1. Help people understand that threats to our sustainability do exist;

2. Convince people that the resulting problems have to be taken seriously and won't go away otherwise; and

3. Encourage and help people to choose and create innovative and thoughtful solutions to these problems.

The first point was addressed in the story of "un-sustainability," which took us into the critical phase of the paradigm shift. The second point is the work that takes place at the cusp between the critical phase and the transformational phase, as we begin to realize that we have choices, and that we are the ones who must make those choices. The third point is the work of the transformational phase of the paradigm shift: articulating and enacting the new paradigm. The story of sustainability focuses on points two and three.

[111]Diamond (2005), pp. 521-22

In the broadest sense, Raskin et al (1996) point out that sustainability is about the capacity for socio-ecological systems to continue unimpaired into the future.[112] This does not mean that sustainability is static, in fact quite the opposite. "A sustainable system is *resilient* in the face of extreme perturbations and *flexible* in responding to changing circumstances (p. 5)."[113] To understand sustainability better, it is helpful to organize the conversation into two different and related dimensions: biophysical systems and socio-cultural-economic systems. "In biophysical terms, sustainability implies the maintenance of ecosystems, bio-geochemical cycles, and the natural resource base at levels that maintain the functional and structural integrity of natural systems (p 5.)."[114]

In human well-being terms, biophysical sustainability means that ecosystems can continue to provide vital ecosystem services to human communities. The concept of "ecosystem services" is fundamental to the Millennium Ecosystem Assessment. Ecosystem services are the functions performed by ecosystems that are valuable, and often indispensable for life, including human life. Examples of ecosystem services include, maintaining clean water and clean air, pollination, photosynthesis, regulation of climate, maintenance of soil fertility, water filtration, and waste absorption and breakdown. Not only are many of these services vital to life, they are irreplaceable at any cost. The Millennium Ecosystem Assessment summarizes some of the combinations of services that ecosystems provide to human populations emphasizing that the ability of ecosystems to deliver these services depends on complex biological, chemical and physical interactions. These, in turn, are affected by human activities. The Assessment uses the following

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[112]Raskin, P., M. Chadwick, T. Jackson, and G. Leach, (1996). *The Sustainability Transition: Beyond Conventional Development*. Stockholm, Sweden: Stockholm Environment Institute, p. 5.
[113]Raskin et al (1996), p. 5.
[114]Raskin et al (1996), p. 5.

illustration (MEA, 2005, p. 6)[115] to show just some of the key services we depend upon ecosystems to provide:

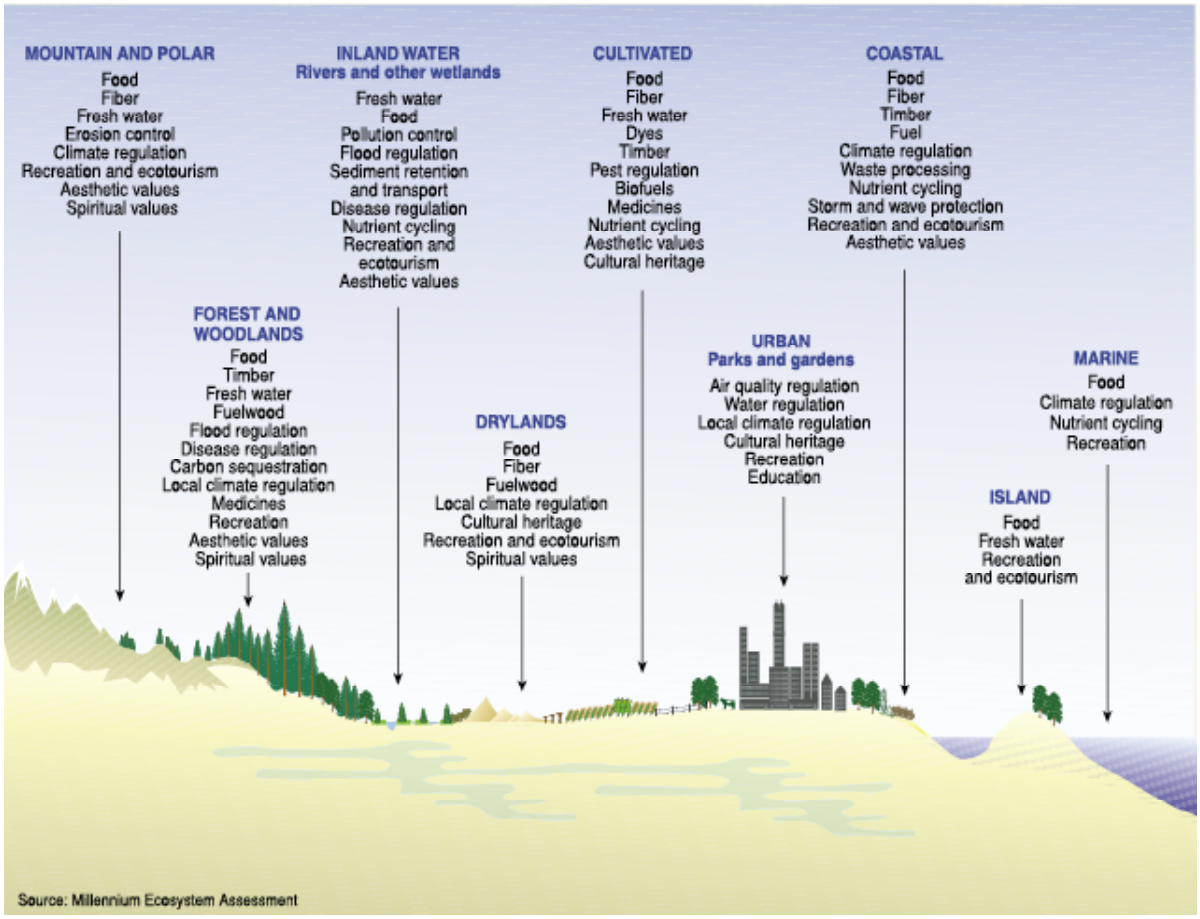

Figure 2: Ecosystems services

Human activity can impact biophysical sustainability by stressing atmospheric, hydrological or terrestrial ecosystems through waste and pollution, or through physically destroying the regenerative capacity of natural systems. Human activity arises out of, and is informed and constrained by, socio-cultural-economic systems, the other dimension of sustainability. The

[115]Millennium Ecosystem Assessment, 2005. *Living Beyond Our Means,* pg. 6. This document is available on line at http://www.millenniumassessment.org/en/Products.BoardStatement.aspx

key messages of the Millennium Ecosystem Assessment center on the human activity and behavior dimension of sustainability:

- Everyone in the world depends on nature and ecosystem services to provide the conditions for a decent, healthy, and secure life.
- Humans have made unprecedented changes to ecosystems in recent decades to meet growing demands for food, fresh water, fiber, and energy.
- These changes have helped to improve the lives of billions, but at the same time they weakened nature's ability to deliver other key services such as purification of air and water, protection from disasters, and the provision of medicines.
- Among the outstanding problems identified by this assessment are the dire state of many of the world's fish stocks; the intense vulnerability of the 2 billion people living in dry regions to the loss of ecosystem services, including water supply; and the growing threat to ecosystems from climate change and nutrient pollution.
- Human activities have taken the planet to the edge of a massive wave of species extinctions, further threatening our own well-being.
- The loss of services derived from ecosystems is a significant barrier to the achievement of the Millennium Development Goals to reduce poverty, hunger, and disease.
- The pressures on ecosystems will increase globally in coming decades unless human attitudes and actions change.
- Measures to conserve natural resources are more likely to succeed if local communities are given ownership of them, share the benefits, and are involved in decisions.

- Even today's technology and knowledge can reduce considerably the human impact on ecosystems. They are unlikely to be deployed fully, however, until ecosystem services cease to be perceived as free and limitless, and their full value is taken into account.
- Better protection of natural assets will require coordinated efforts across all sections of governments, businesses, and international institutions. The productivity of ecosystems depends on policy choices on investment, trade, subsidy, taxation, and regulation, among others (p. 3).[116]

In addition to the scale of the biophysical impacts of human activity, sustainability on a global scale remains in question if basic human needs are not being met by significant segments of the population. People in conditions of poverty who are chronically hungry, lack safe drinking water and sanitation, and lack access to health care, employment, and education, generally must focus first on their immediate survival regardless of the biophysical impacts of their activities. In addition, growing disparities between the rich and poor within countries and among countries contributes to political and social instability and increases levels of global insecurity at a time when global collaboration is dearly needed to creatively find solutions to a growing array of sustainability-related problems.

A key concept relating to the human-nature relationship informing the sustainability discourse in the 2000s is the link between ecosystem and human system health and wellbeing. Current and future human health and well-being is at stake if we continue to degrade ecosystem health and integrity. A leading sustainability approach originated with a Swedish oncologist: Dr. Karl Henrik Robért. In the 1980s, Dr. Robért was a medical doctor and cancer treatment researcher who was seeing "an endless stream of concerned parents come into

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[116]Millennium Ecosystem Assessment , 2005. *Living Beyond Our Means,* pg. 3. This document is available on line at http://www.millenniumassessment.org/en/Products.BoardStatement.aspx.

the hospital with cancer-diseased children (in Nattrass and Altomare, 1999, xiii)."[117] Robért[118] recognized a troubling paradox: despite the deep concern we show for our children's health and well-being, we handle the challenge of taking care of the environment upon which their future ultimately depends, by fighting rather than cooperating. Robért's solution was to create a framework that would encourage dialogue and consensus rather than discord. As a medical researcher, he turned to his primary focus of research, the human cell, to teach him about what was needed to create a sustainable society. He started with the concept of cell metabolism, the way in which living cells process nutrient molecules and maintain a living state, and extended the metabolism metaphor to organizations and societies. The build-up of toxic substances in a cell can lead to damage or death if critical thresholds are crossed. Was it not the same in larger metabolic systems? Could un-sustainability be seen as a process of the build up of concentrations of toxic substances in ecosystems that, if critical thresholds are crossed, will lead to potential deterioration or destruction of those systems? As humans live in, and live off those systems, does not the build up of toxic substances and the destruction of life supporting capacity of those systems directly impact the health of human communities? To be sustainable, should not human communities learn to live within and in balance with the metabolic processes of larger natural cycles and systems?

Dr. Robért wrote his thoughts about a sustainable society down and sent them to scientific colleagues across Sweden, asking for their critique of and input into his ideas. Eventually he collaborated with 50 scientists and took his document through 21 iterations. Robért was seeking consensus. So wherever there was disagreement, he dropped the concept until he had a document that truly represented a consensus—a description of what, at a minimum, was

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[117]Nattrass, B., and M. Altomare, 1999. *The Natural Step for Business: Wealth, Ecology and the Evolutionary Corporation*. Gabriola Island: New Society Publishers, p. xiii.
[118]The story of Dr. Robert is based on personal conversations with him over the course of several years.

needed for a sustainable society based on the elements upon which these scientists could agree.

Dr. Robért teamed with Dr. John Holmberg, a physicist who was similarly trying to simplify public understanding about what it would take to create a more sustainable society. Robért started with biology and metabolic processes, Holmberg started with the Laws of Thermodynamics and noted that as matter is not created nor does it disappear, and matter tends to disperse into less usable forms, we could identify fundamental mechanisms by which potentially toxic substances could build up in ecosystems as a result of human industrial and consumption activities.

Together Robért and Holmberg (Holmberg, Robért, & Eriksson, K. 1996; Holmberg & Robért, 1997; Robért, Holmberg, & Broman, 1997)[119] described society as having a metabolism that transforms matter and energy and produces waste. This societal metabolism is embedded in the metabolic processes of natural systems. In natural systems, waste does not exist, as the detritus of one species or process becomes the food for another. Waste equals food. In human industrial systems, however, waste often does not equal food. Individual people, organizations, and systems, are also seen to have metabolisms where matter and energy are transformed and waste is produced. If substances are not effectively metabolized, if waste is produced that does not become food for another process—in ecosystems or in human systems—concentrations of those substances can accumulate to potentially toxic levels in both ecosystems and the human body.

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[119]The story of Dr. Robert's and Dr. Holmberg's conclusions is drawn from personal conversations and is distilled from multiple documents including: Holmberg, J., Robért, K. H., & Eriksson, K. (1996) *Socio-ecological Principles for a Sustainable Society: Scientific Background and Swedish Experience*. Stockhom: The Natural Step Environmental Institute Ltd.; Holmberg, J., & Robért, K. (1997). *Back-casting from First Order Sustainability Principles: A Framework for Strategic Planning*. Stockholm: The Natural Step; Robért, K. H., Holmberg J., & Broman, G. (1997). *Simplicity Without Reduction: Thinking Upstream Toward a Sustainable Society*. Stockholm: The Natural Step.

Dr. Robért created a framework that he called "The Natural Step Framework for Sustainability." The Natural Step Framework posits four conditions that must be met at a minimum if society is going to maintain a sustainable relationship within biophysical systems. The first three system conditions describe the mechanisms through which human activities can deteriorate, disrupt, or destroy the natural cycles that provide vital ecosystem services through the buildup of toxins or the destruction of ecosystem regenerative properties required to transform "waste" into new resources. The fourth system condition recognizes that sustainability cannot be achieved unless human needs are met worldwide. The Natural Step Framework suggests that sustainability is a step-by-step process of making design decisions and implementing actions to support all four of the System Conditions.

The Four System Conditions of The Natural Step Framework can be easily articulated:

In a sustainable society, Nature is not subject to increasing concentrations of:

1. Substances extracted from beneath the Earth's crust such as fossil fuels and heavy metals;
2. Substances created by society such as synthetic chemicals that nature does not recognize as food and therefore cannot break down;
3. Degradation by physical means, such as over-harvesting or the physical destruction of ecosystem regenerative capacity; and

In a sustainable society,

4. Human needs are met worldwide (Holmberg, Robért, & Eriksson, K. 1996; Holmberg & Robért, 1997; Robért, Holmberg, & Broman, 1997).[120]

[120]Holmberg, J., Robért, K. H., & Eriksson, K. (1996) *Socio-ecological Principles for a Sustainable Society: Scientific Background and Swedish Experience*. Stockhom: The

The Natural Step System Conditions opened up the possibilities for individuals, teams and organizations to begin asking different questions about their activities, for example:

- What substances do we depend on for our success from beneath the Earth's crust (for example, fossil fuels or heavy metals)? Are we using these substances in ways that can lead to potential accumulation in living systems? If so, how can we reduce or eliminate our dependence upon these substances or ensure that they do not get into living systems?

- What synthetic human-produced substances do we depend on for our success (for example, pvc-polyvinylchloride, phthalates)? Are we using these substances in ways that can lead to potential accumulation in living systems? If so, how can we reduce or eliminate our dependence on these substances or ensure that they do not get into living systems?

- How do our activities depend upon, produce or lead to the physical destruction of life supporting systems? How can we ensure that we do not contribute to this physical destruction and even act in ways that support and restore life-supporting systems?

- How do our activities support or undermine the ability of communities to meet their needs? How can we ensure that our activities contribute positively to meeting human needs?

The Natural Step Framework also opened up the possibilities for

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Natural Step Environmental Institute Ltd.; Holmberg, J., & Robért, K. (1997). *Back-casting from First Order Sustainability Principles: A Framework for Strategic Planning*. Stockholm: The Natural Step; Robért, K. H., Holmberg J., & Broman, G. (1997). *Simplicity Without Reduction: Thinking Upstream Toward a Sustainable Society*. Stockholm: The Natural Step.

conversations about what society could look like if it met these four conditions, and by extension what a given organization could look like within that society. These conversations ultimately recognize how deeply embedded so many human systems are in processes and practices that are unsustainable. With this awareness, the possibilities open up to explore solutions and innovations.

The Natural Step Framework simplified the complexity that seemed to surround environmental issues and problems, and that simplicity made solution-oriented conversations more feasible. Major companies such as IKEA, Volvo, Electrolux, Nike, Starbucks, the Home Depot, and Interface began to use The Natural Step Framework to facilitate the conversations about both unsustainable and more sustainable practices first within their organizations and then with their key stakeholders. Municipalities such as Santa Monica and the Resort Municipality of Whistler began to use the Framework as a compass and vehicle for community engagement. Major government agencies, such as the U.S. Army adopted the approach.

Numerous other frameworks and concepts have emerged in the last decade as ways to conduct the sustainability discourse, for example:

- Industrial ecology: basing engineering principles and processes on the concept that society must balance its accounts of materials and energy, eliminate or minimize harmful waste, and reuse waste and industrial products to the greatest extent possible.
- Ecological footprint: balancing human demands on nature with the biosphere's ability to provide ecosystem services and to regenerate.
- Corporate responsibility, corporate social responsibility, corporate citizenship, a form of voluntary corporate self-regulation that includes responsibility for the social and environmental as well as the financial impacts of business.
- Natural capitalism: industrial and commercial processes that focus on

the conservation of resources through more effective manufacturing processes, the reuse of materials as found in natural systems, a change in values from quantity to quality, and investing in natural capital, or restoring and sustaining natural resources.

- Cradle-to-cradle design: a framework that models human industry on nature's processes, viewing materials as nutrients that circulate in healthy metabolic systems.
- Biomimicry: the process of learning from nature's models, systems, processes and elements in order to emulate or take inspiration from them to design products and processes and to solve human problems sustainably.
- Green chemistry: a philosophy that encourages the design of products and processes that eliminate or minimize the use or generation of hazardous substances.

Each of these frameworks and/or philosophies is seeking to address how we can, at a minimum, coordinate our human activities without causing harm to ourselves and the ecosystems we live in and on which we depend; and at best, how we can operate in a way that restores and protects the health and balance of human and ecological systems.

Today the sustainability lexicon continues to expand and evolve as the sustainability story is still in the early stages of construction. In the scientific and international development communities, "sustainable development" and "sustainability" tend to be the more commonly used terms. In the business community, "corporate responsibility" and "corporate social responsibility" appear to be gaining more common acceptance, albeit in 2008/09 the use of the term *sustainability* is showing up increasingly among corporate actors. The meaning and relevance of the various terms are coalescing as business, government, the academy, and civil society put sustainability concepts and frameworks into practice, use them as a basis for coordinating action, and

build agreement about how to use them and how to evaluate and report on performance associated with them.

Today an increasing number of organizations are actively joining the conversation. The number of corporations telling the sustainability story provides an important indication of the growing acceptance of sustainability as socially and economically relevant to life in the 21st Century. More than half of the world's largest corporations are engaged to varying degrees in a process of more sustainable development and issue voluntary performance reports on their social and environmental impact and progress. A 2005 KPMG International Survey of Corporate Responsibility Reporting finds that corporate responsibility (CR) reporting has increased steadily since the survey was first published in 1993. In 2005, 52 percent of the top 250 *Fortune* 500 companies (the Global 250, or G250) and 33 percent of the top 100 companies in 16 countries (the National 100, or N100) issued CR reports. If annual reports with CR information are included, the number jumps to 64 percent (G250) and 41 percent (N100). The survey also reports a dramatic change in the content of these reports: since 1999, the focus has shifted from environmental issues to sustainability reporting that incorporates social, environmental, and economic aspects of business. Such triple-bottom-line reporting is now the norm among the G250 companies (68 percent) and is increasingly common among the N100 companies (48 percent). The World Business Council on Sustainable Development (WBCSD), a coalition of 180 of the world's leading international companies with collective revenues of approximately $6 trillion, is a global leader in facilitating the sustainability discourse within the business community.

What is sustainability? Sustainability is a conversation about how we are to go on together, how we will choose to maintain and improve the quality of life for ourselves and for future generations within the means of nature, and in ways that restore and support the health and integrity of vital ecosystems. Sustainability is the story of how we can consciously coordinate our actions to

avoid the unsustainable trajectory global society seems to be on and choose a future that supports life. The story line of "un-sustainability" is much longer and more detailed than the sustainability story, in part because we are very new in the construction of the sustainability story. We are on the threshold of the transformational phase of our paradigm-changing journey. "As this system is increasingly employed in the 'ontology' of the world (for example, in naming and interpreting what there is), its credibility gradually rivals that of Intelligibility A; it approaches the status of plain talk or common sense" (Gergen, 1994, p. 13). The increasing employment of sustainability concepts by practitioners in organizations is the subject of Chapters 4-7.

FUSION OF HORIZONS ABOUT THE MEANING OF SUSTAINABILITY

Tradition holds that the perception of *paticca samuppada,* or the principle dependent co-arising, came to the Buddha the night of his enlightenment under the Bodhi Tree. Ecophilosopher, Joanna Macy (1991), explores the concept of dependent co-arising in her book *World as Lover, World as Self*. She writes: "I noted how it knocked down the dichotomies bred by hierarchical thinking, the old polarities between mind and matter, self and world . . . I saw it as consonant with the systems thinking emerging in our own era . . . " (p. 54).[121] Macy (1991) recounts one of the earliest formulations of dependent co-arising: "This being, that becomes; from the arising of this, that arises; this not being, that becomes not; from the ceasing of this, that ceases" (p. 58).[122] Dependent co-arising simply put means that "things do not produce each other or make each other happen, as in linear causality; they *help* each other happen by providing occasion or locus or context, and in so doing, they are in turn affected. There is a mutuality here, a reciprocal dynamic. Power inheres not in any entity, but in the relationship between entities" (p. 58).[123]

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[121]Macy, J., 1991. *World as Love, World as Self*. Berkeley, California: Parralax Press, P. 54.
[122]Macy (1991), p. 58.
[123]Macy (1991), p. 58.

To adapt this concept to the context of this dialogue with ideas: meaning inheres not in the story of un-sustainability or sustainability, but in the dynamic relationship these two stories impart. The sustainability discourse is the story we are writing together about how we could go on together, and perhaps how we may not go on together. It is the story of the reality we are creating together through coordinating our actions in a more or less sustainable direction.

When I look at the evidence that is mounting that as a species we are changing, in perhaps irreversibly harmful ways, the life support systems—social and ecological—upon which our current and future well-being depends, I cannot help but wonder why more people are not paying attention. Why is there not a hue and cry to stop what we are doing and choose different ways of being and acting in the world so that we can leave the best possible legacy to those who inherit the consequences of the way we live? Are we blind? Are we engaged in a form of personal, organizational, institutional, social and cultural denial? The indicators of environmental and social stress are not being hidden from us. They appear daily and at an accelerating rate and volume on our televisions, in our newspapers, in magazines, in professional and academic journals, books, speeches, conversations, and speculations. If the evidence is all around us, why are we not doing something about it?

In his book, *Strangers to Ourselves*, Timothy Wilson (2002) asks us to:

> Consider that at any given moment, our five senses are taking in more than 11,000,000 pieces of information. Scientists have determined this number by counting the receptor cells each sense organ has and the nerves that go from these cells to the brain. Our eyes alone receive and send over 10,000,000 signals to our brains each second… The most liberal estimate is

> that people can process consciously about 40 pieces of information per second. Think about it: we take in 11,000,000 pieces of information a second but can only process 40 of them consciously… p. 24).[124]

How do we make sense of all of the information coming at us? One way we do so is by selective attention, a non-conscious filter that examines the information coming to us and chooses what to admit to consciousness. The operation of this filter occurs outside of our awareness. Wilson calls this filter the "adaptive unconscious." He suggests that we focus on information that is relevant and accessible to us, and tend to screen out everything else. Accessibility of information depends upon how recently it has been encountered and how often it has been used in the past.

> People are creatures of habit, and the more they have used a particular way of judging the world in the past, the more energized the concept will be. Our nonconscious minds develop chronic ways of interpreting information from our environments; in psychological parlance, certain ideas become chronically accessible as a result of frequent use in the past (p. 37).[125]

Wilson (2002) goes on to suggest that relevance and accessibility are not the only way that the adaptive unconscious screens information. "People's judgments and interpretations are often guided by a quite different concern, namely the desire to view the world in the way that gives them the most pleasure…people go to great lengths to view the world in a way that maintains

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[124]Wilson, T. D. (2002). *Strangers to Ourselves: Discovering the Adaptive Unconscious*. Cambridge Massachusetts and London, England: The Belknap Press of Harvard University Press, p. 24.
[125]Wilson (2002), p. 37.

a sense of well-being… (p. 38).[126] This "psychological immune system" protects us from threats to psychological well-being.

Langer (1989) points out that we make sense of the world by creating categories and making distinctions among them, what Tibetan Buddhists call "habits of mind." This creation of new categories is a mindful activity. "Mindlessness sets in when we rely too rigidly on categories and distinctions created in the past… The categories we make gather momentum and are very hard to overthrow. We build our own and our shared realities and then we become victims of them—blind to the fact that they are constructs, ideas" (p. 11).[127] Acting out of habit—continuing with behaviors that have been repeated over time, generated and reinforced by our cultural and social interactions—can be a form of mindlessness.

Habitual thinking and activities generally shut out new signals. We cling to these categories and habits as a result of repetition, practice, and a more subtle and powerful effect that psychologists call premature cognitive commitment, the tendency to form a mindset when we first encounter something and then cling to that mindset when we reencounter that same thing. Such a mindset forms before we do much reflection on it. "[M]ost of us don't reconsider what we mindlessly accepted earlier. Such mindsets, particularly set in childhood, are premature because we cannot know in advance the possible future uses a piece of information may serve. The mindless individual is *committed* to one predetermined use to the information, and other possible uses or applications are not explored" (p. 22).[128] The way we first take in information, mindfully or mindlessly, determines how we will use it later (p. 25).[129]

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[126]Wilson (2002), p. 38.
[127]Langer, E. J. (1989). *Mindfulness*. Cambridge, MA: De Capo Press, pg. 11.
[128]Langer (1989), p. 22.
[129]Langer (1989), p. 25.

Langer posits that the key qualities of a mindful state of being include:

1. Creation of new categories;
2. Openness to new information, and
3. Awareness of more than one perspective.

She suggests that categorizing and re-categorizing as one interacts with and masters the world is natural to children, but that as adults we become reluctant to create new categories. "Without psychotherapy or a crisis as motivation, the past is rarely recategorized" (p. 64).[130] Openness to new information is basic to survival and adaptation. However, our "psychological immune system" may tend to screen out signals that are inconsistent with our unconsciously held worldview or our desire to maintain psychological wellbeing. When presented with information that is too disturbing, threatening or anomalous to be fully absorbed, the information is "somehow repressed, disavowed, pushed aside or reinterpreted. Or else the information 'registers' well enough, but its implications—cognitive, emotional or moral—are evaded, neutralized or rationalized away"(p. 1).[131]

The information that the activities of humanity may be creating damage on such a scale as to disrupt or otherwise harm living systems upon which continued health and wellbeing of humanity depends is certainly disturbing and threatening. It feels remote because generally we cannot see this damage in our day-to-day life although the effects of climate change are becoming increasingly obvious and undeniable. Nonetheless, other things appear more immediate, more relevant to our wellbeing: our jobs, our bills, and our families. Pollack (2005) offers an explanation of why this is the case.

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[130]Langer (1989), p. 64.
[131]Cohen, S. 2001. *States of Denial*. Malden, MA: Polity, p. 1.

> It is difficult for humans to focus on small incremental changes worldwide when big things are happening at home. The strategy of dealing with the immediate has served humans well when the greatest threats were local and looming large. For example, in a modern context, when humans are asked to consider the concept of global climate change, a phenomenon that is planetary in scope and which operates on a time scale that exceeds political term limits, generations and life spans, there is a hesitation, even skepticism, that arises because it is outside the realm of ordinary experiences derived from day-to-day living. A caution emerges, a natural tendency to move into unfamiliar territory carefully. Uncertainty accompanies unfamiliarity (p. 44).[132]

Whether the challenge is climate change, ecosystem destruction, increased poverty that puts environmental stress on locations remote from us, or increased security concerns because of environmental degradation, we feel removed. They are removed from the realm of our ordinary experience. Our senses have not evolved to detect incremental global processes that seem slow or remote with respect to a lifetime, even when they are rapid with respect to other time scales, for example, the evidence that glaciers that have been in existence for tens of thousands of years are rapidly disappearing today. Without a crisis, we don't feel the urgency for doing things differently. Our habits of mind, our categories, our stories about how the world works and what is important to pay attention to remain undisturbed, even with the warning signals. Unfortunately, if we cross ecosystem thresholds that are irreversible, by the time we experience the crisis, it may be too late.

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[132]Pollack, H. N. *Uncertain Science. . . Uncertain World.* Cambridge, UK: Cambridge University Press, P. 44.

Perhaps this is the evolutionary challenge of our species: to generate the social conversation that speaks the unspeakable future so that we can coordinate our action and behavior to avoid that future. In other words, perhaps our evolutionary challenge is actively, consciously, mindfully and socially to create a sustainable and vibrant global future. Ninety-nine percent of the species that have ever lived on the planet have gone extinct; there is no guaranty that humanity will be an exception. We are a resilient adaptive species. Perhaps when we look back we will see that the sustainability discourse was primarily an exercise in adaptive story creation: adapting our story of who we are and how we need to and can go on together as a species.

The late astronomer, Carl Sagan, offers us a humbling perspective on our story in this excerpt from *Pale Blue Dot: A Vision of the Human Future in Space:*

Earth (the dot in the middle) as seen from 3.7 billion miles away by the Voyager 1 spacecraft, on June 6, 1990...

Look again at that dot. That's here. That's home. That's us. On it everyone you love, everyone you know, everyone you ever heard of, every human being who ever was, lived out their lives.

The aggregate of our joy and suffering, thousands of confident religions, ideologies, and economic doctrines, every hunter and forager, every hero and coward, every creator and destroyer of civilization, every king and peasant, every young couple in love, every mother and father, hopeful child, inventor and explorer, every teacher of morals, every corrupt politician, every "superstar," every "supreme leader," every saint and sinner in the history of our species lived there - on a mote of dust suspended in a sunbeam.

The Earth is a very small stage in a vast cosmic arena. Think of the rivers of blood spilled by all those generals and emperors, so that, in glory and triumph, they could become the momentary masters of a fraction of a dot.

Think of the endless cruelties visited by the inhabitants of one corner of this pixel on the scarcely distinguishable inhabitants of some other corner, how frequent their misunderstandings, how eager they are to kill one another, how fervent their hatreds.

> Our posturings, our imagined self-importance, the delusion that we have some privileged position in the Universe, are challenged by this point of pale light.
>
> Our planet is a lonely speck in the great enveloping cosmic dark. In our obscurity, in all this vastness, there is no hint that help will come from elsewhere to save us from ourselves.
>
> The Earth is the only world known so far to harbor life. There is nowhere else, at least in the near future, to which our species could migrate. Visit, yes. Settle, not yet. Like it or not, for the moment the Earth is where we make our stand.
>
> It has been said that astronomy is a humbling and character building experience. There is perhaps no better demonstration of the folly of human conceits than this distant image of our tiny world. To me, it underscores our responsibility to deal more kindly with one another, and to preserve and cherish the pale blue dot, the only home we've ever known.[133]

The Earth is the only world known so far to harbor life. Sagan believed, and worked a lifetime to convince others, that life does exist on other planets in other solar systems, in other galaxies. We may never know whether or not that is true. What we do know is that life does exist on this planet. What if it is the only one? What an awesome gift and responsibility that implies.

The sustainability discourse is taking place in many forms and many forums. The alarm raised by Rachel Carson; the galvanization of environmental

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[133]Sagan, C., (1994), *Pale Blue Dot: A Vision of the Human Future in Space,* Random House, available at: http://www.infoimagination.org/ps/mars/blue_dot.html

concerns into a political voice; the response of policy makers enacting legislation to address these concerns; the response of business—beginning reactively and today increasingly proactively—to legislation, the voices of their many stakeholders, and to their own self-interest; the burgeoning integration and communication of more sustainable practices in both the private and public sectors: all of this is part of a social conversation that is becoming wider, more pervasive, and more normalized.

The signals that once constituted new information have been growing louder and have become increasingly consistent over the past 40-50 years. The information has been and will continue to be repeated until it becomes received wisdom rather than a novelty, becomes the accepted description of reality rather than an alarm from the periphery of our concern. Our selective attention is already operating with new categories: climate change, sea level rise, species extinction, corporate responsibility, and sustainability. This creation of new categories and shift in social discourse gives me hope. At the same time, evidence abounds that we remain deeply entrenched in our old stories even as the window for shifting the balance from the unsustainable to the sustainable future story may in fact be closing. We seem to be heading in the right direction, but the velocity may prove to be too slow to get us where we need to go. The crisis is looming, while the urgency still appears to be lacking.

How do we embrace and move through the transformational phase of our paradigm-changing journey? In Chapters 4 through 7, I explore this question in a dialogue with practitioners about the growing practice of sustainability. I organize this dialogue with practitioners around three key themes that have emerged in our practice:

1. The power of a story (Chapter 4);
2. Thinking in systems (Chapter 5); and

3. Taking action (Chapter 6).

Chapter 7 contains specific tools and processes that we have developed in our work with organizations on integrating sustainability into how they conduct their business.

CHAPTER 4

DIALOGUE WITH PRACTITIONERS ABOUT MAKING SENSE THROUGH OUR STORIES

We tell each other stories every day, effortlessly, without stopping to wonder what it is we are doing. Yet the ubiquitous practice of narrative is a remarkable human achievement. Through narrative, the young child reaches out to a new friend, soliciting contact through the confirmation of a shared imaginative reality; the lawyer pleads the innocence of his client by arousing the emotions of the jury; the story-teller entertains his audience by conjuring up absent or imaginary men and beasts. In the prototypical narrative, we establish relations between the actions of social agents, accounting for outcomes, linking causes to effects, and assigning credit and responsibility.[134]

Francis F. Steen (2006) *The Paradox of Narrative Thinking* (p. 2)

A good story simplifies our world into something we feel we can understand.[135]

Annette Simmons (2001), *The Story Factor* (p. 30)

[I]f we cannot tell a story about what happened to us, nothing has happened to us.[136]

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[134]Steen, Francis, F. "The Paradox of Narrative Thinking," draft article viewed on August 26, 2006, page 1. Text available on-line at: http://cogweb.ucla.edu/crp/Papers/Steen_Paradox.html

[135]Simmons, Annette, 2001. *The Story Factor*. Massachusets: Cambridge: Perseus Publishers, p. 30.

[136]Carse, James P., *Finite and Infinite Games, A Vision of Life as Play and Possibility*, 1986. New York, New York: Random House Publishing, page 167.

James P. Carse (1986), *Finite and Infinite Games* (p. 167)

As in the first three chapters, I continue this dissertation as a dialogue using Bohm's (1996) assertion that dialogue can be understood as a "stream of meaning,"(p. 6).[137] In these four chapters, the stream of meaning flows through:

1. The knowledge and experience I have gained through practice;
2. The various ideas and texts I have explored to increase the effectiveness of practice;
3. The experience others have gained through their practice; experience I access through case studies, stories, and conversations; and
4. Reflections upon the stories insights, ideas, questions, and conclusions that emerge from these experiences of the world.

The *dialogic relationship* I enter into in these chapters includes multiple voices and perspectives that I have encountered as a person who works as a practitioner, works with and coaches other practitioners, and teaches practitioners the art and science of sustainability practice. I write these chapters as a conversation with individuals who are or wish to be "sustainability practitioners," at times posing questions which I then answer, and at times telling stories from other conversations I have had. A fundamental question guides this conversation through these chapters: how can we as practitioners be more effective in helping the organizations in and with which we work to integrate sustainability into what they stand for; how they operate; and what they contribute to the world?

[137]Adapted from Bohm, D. (1996). *On Dialogue*. London: Routledge, p. 6.

Before proceeding, it is important for me to define what I mean by "sustainability practitioner," which is an area of expertise and practice that is relatively new, and did not really exist when Brian and I began our work together some 15 years ago. I define a "sustainability practitioner" in two specific ways—one predominantly internal to an organization, the other external:

3. Anyone who has specific formalized responsibility within an enterprise for any aspect of its sustainability education, strategies, practices and/or outcomes; and

4. Anyone who consults to or advises organization leaders and organization sustainability practitioners on sustainability education, strategies, practices and outcomes.

I believe that three of the key tasks of a sustainability practitioner are to:

4. Help sustainability "make sense" within the organization's context;

5. Help the organization identify how to act in alignment with the sense that sustainability makes; and

6. Help the organization to *integrate* sustainability into its ongoing story, and by doing so, to facilitate the evolution of that story.

This means that even as the focus of the dialogue in these chapters is *practice*, "sense-making" and storytelling are central to the conversation. It is through our stories that we make sense of our world and through this sense-making activity that we work out how to be and operate within it. As explored in Chapter 3, un-sustainability and sustainability are relatively new elements to the story of how we must be and operate on this finite planet. This new story

does not apply to only a few cultures, social groups or organizations; it applies to all who share this one planet. This universality is both daunting and exciting because it means that the practice in which sustainability practitioners are involved goes beyond the specific tasks and results within a specific organization; it is connected to the larger story that is the central question of this study: how we are to go on together on this planet.

As before, my dialogue includes experiences from my story. Today Brian and I consider ourselves sustainability practitioners in the sense of the second definition provided above. We consult to, teach, and advise organizational leaders and internal sustainability practitioners. These practitioners represent multiple levels and functions in the organizations with which we work. Sustainability is often not in their job title or their job description. Often, more recently, it is. When we began this journey together sustainability was not a field of practice in the sense that "practice" implies a recognized set of skills, professional knowledge, and habits. The skills and knowledge for a field of practice are generally gained through some sort of professional training that helps us develop relevant knowledge. The application of that knowledge helps us gain "know-how" and competency in a given professional arena. We then manifest this know-how in specific situations, or as Donald Schön (1983) describes it, we exercise our "knowing-in-action."[138]

Fifteen years ago, there was no professional training for sustainability practitioners nor was there an agreed upon pedagogy that outlined what such a practitioner should know or how best to learn it. Not only was the entire concept of sustainability relatively new, what it meant to be a sustainability practitioner was a story not yet invented. It was not a recognized category of professional endeavor. There were no guidelines. In general, and perhaps most challenging, there was little perceived demand in organizations for help

[138]Schön, Donald, A. (1983). *The Reflective Practitioner How Professional Think In Action,* Basic Books, pp. 49-50.

around sustainability as it was not even on most organization's radar screens. Brian's professional training and experience was in law and business. Mine was in anthropology, international relations, research, and academic administration. Guided, even driven, by our growing concern about the future as we let the story of un-sustainability become integrated with our understanding of the world—as described in Chapters 2 and 3—we immersed ourselves in new areas of knowledge for us that we intuited were salient for charting a course in what was essentially uncharted territory.

The beginning of our practice was less "knowing in action" than it was intuiting and improvising in action, or what Schön (1983) refers to as "reflecting in action."[139] We brought a range of knowledge, skills, and experience to the process, including what we learned through our own process of learning and thinking about sustainability. The actual practice as developed through our work with specific organizations, however, evolved in a way that was more like a jazz improvisation than it was the application of knowledge and knowing-in-action that one might find in the practice of an established profession such as law, administration or medicine.

> When good jazz musicians improvise together, they…manifest a "feel for" their material and they make on-the-spot adjustments to the sounds they hear. Listening to one another and to themselves, they feel where the music is going and adjust their playing accordingly…As the musicians feel the direction of the music that is developing out of their interwoven contributions, they make sense of it and adjust their performance to the new sense they have made. They are reflecting-in-action on the music they are collectively making

[139]Schön (1983), pp. 54-55.

> and on their individual contributions to it, thinking what they are doing and, in the process, evolving their way of doing it.[140]

Our early practice was a constant listening to everything we had learned from different disciplines and from our own experience, feeling the interwoven contributions of different perspectives, making sense in the midst of performance of what was working; what was not; what needed to be adjusted; and what was distinctive about working with organizations when it came to sustainability.

As we proceeded we developed tools and processes that we know now to be effective based on our lived experience, which means we are now able to engage our tacit knowledge, or know-how, in practice. Some of these tools and processes are described in Chapter 7. We still often describe our practice and the very field of sustainability practice as something we are all making up as we go. Even as we develop and use specific tools and processes, we endeavor to maintain "beginner's mind," a concept from Zen Buddhism of keeping an attitude of openness, surprise and possibilities, with each new client or task. This helps us to continuously combine knowing-in-action with reflecting-in-action.

How can we as practitioners help the organizations in and with which we work to more effectively integrate sustainability into the stories that make them what they are? The dialogue that flows from this question is developed around three core themes that we have found to be important in the emergent design of our practice of sustainability consulting:

1. Stories help us make sense of the world—they are powerful—understand them and use them;

[140]Schön (1983), pp. 55-56.

2. We need to think in systems and help others see and think in systems; and
3. We construct and validate our reality together by enacting our story.

We are a story-telling species. We think in stories. We construct stories about our experience to orient ourselves in our complex natural and social systems so that our experience makes sense to us (Steen, 2006, p. 1).[141] Our practices are manifestations of the stories we believe are true in our world. Our stories help us make sense of our practices. Our practices validate our stories. As sustainability practitioners it is fundamental to remember that we live in a storied world and that the organizations with and in which we work are built on and perpetuated through stories. What can we learn from the stories of organizations that have done some of the pioneering work in sustainability?

This chapter is organized into the following sections: first, my reflections on my own learning and experience with respect to the importance of stories in organizational change, especially with respect to sustainability. I then share specific stories from Nike, Starbucks, and the Army. After each story, I share personal reflections on what I learned about the power of story in those client situations as well as insights I think are useful for practitioners to know. This chapter is as much the story about our evolving practice as it is stories about sustainability in each organization because these two elements co-arise.

[141]Steen, Francis, F. "The Paradox of Narrative Thinking," draft article viewed on August 26, 2006, page 1. Text available on-line at: http://cogweb.ucla.edu/crp/Papers/Steen_Paradox.html. p. 1. Last accessed May 31, 2009.

STORIES: MAKING SENSE OF SUSTAINABILITY

Early on in our practice we discovered that stories play a vital role in how sustainability makes sense in an organization. First of all, every organization has its story. This is more than just its "history," the compilation of "facts and events" that record its existence. Organizations have their own mythology, the legends that distinguish them from other organizations. In this chapter I tell stories from four organizations: IKEA, Nike, Starbucks, and the U.S. Army. In the telling, I share the individual stories of the organizations *and* the evolution of sustainability as part of each organization's story. With each organization's story I weave the story of what I have learned about sustainability practice and what it means to be a sustainability practitioner.

IKEA'S Sustainability Story

IKEA, the world's largest home furnishing company, tells a story in its very name. Although for many people around the world *IKEA* is a little piece of Sweden no matter where the store happens to be located, in the company itself, *IKEA* is a reminder of its genesis: **I**ngvar **K**amprad, the name of the founder **E**lmtaryd, the name of the farm on which he grew up, and **A**gunnaryd, the village in which the farm was located. The company is never disconnected from its roots.

When Brian and I visited the IKEA headquarters in Älmhult, Sweden, we were struck by the prominence of pictures of the surrounding farm country. The dominant feature in these pictures was the long stone fences that are typical in the region. We learned that these stone fences represented one of Kamprad's, and thus IKEA's, core stories. Kamprad, we were told, likens these strong stone fences to the very soul of his company. In Småland, the area where Kamprad grew up, farming was hard. The soil is littered with small boulders, and planting the fields meant clearing the boulders. The fences are built from thousands of these boulders, lifted one by one from this rocky soil.

It is back breaking work, but the result is cleared land for planting and fences that are solid, strong, and durable. At IKEA these fences are enduring symbols of purposeful effort built from the ground up, one stone at a time. Kamprad began his life's work as a boy, going to neighboring farms, selling pencils and then other small goods. Stone by stone, product by product, idea by idea, farm by farm, person by person: he built his company. His idea: the majority of Sweden's people should have access to products to improve their lives. This idea sums up IKEA's business story: to provide a better every day life for the majority of people. The way IKEA does this is by offering household products such as furniture and home furnishings that deliver value to the user at low prices.

Kamprad was not afraid of hard work, and he expects it from those who work at IKEA. From the outset, his business story was founded on resource efficiency. Offering value product at low prices meant that you had to use every resource as efficiently as possible. Waste was considered a sin. This perspective is a legacy of his life experience in the difficult Småland countryside. Every IKEA employee gets a copy of a booklet written by Kamprad called "Testament of a Furniture Dealer," that outlines the values the founder wants in his company: simplicity, humility, honesty whether working internally with co-workers, or externally with suppliers and customers, risk-taking, innovation, always questioning assumptions, and daring to take responsibility.[142] We were told by IKEA co-workers, as employees are called, that risk-taking is a fundamental value in IKEA's culture, and that according to Kamprad, the fear of making mistakes is the enemy of evolution. As a result, we were told, the word "impossible" cannot be found in IKEA's dictionary. "Anything is possible if you put hard work and imagination together."

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[142]More on the story of IKEA can be found in Nattrass, B., and M. Altomare, 1999. *The Natural Step for Business: Wealth, Ecology and the Evolutionary Corporation*. Gabriola Island: New Society Publishers, pp. 47-74.

We were at IKEA to learn how the company used The Natural Step Framework[143] to understand sustainability, and how the company translated that understanding into action in more sustainable practices. IKEA had been receiving signals of environmental concern from its markets in Europe since the early 1980s, especially from Germany, IKEA's largest market. In particular, concerns were being raised about: the off-gassing of formaldehyde in the company's products; whether their products were being sourced from rainforests; the prominence of polyvinylchloride (PVC) in their products; and the amount of paper they used for their catalogues, together with the fact that this paper was bleached and therefore doing potential harm to the environment. These concerns were referred to IKEA's Quality Department, which seemed like the obvious internal choice. Then in 1992, the company was hit with a major formaldehyde issue in its "Billy" bookshelves, one of its core and most profitable product lines. Glenn Berndtsson, who was the head of IKEA's Quality Division when we talked with him, told us about headlines that were in newspapers throughout the world at that time that talked about "IKEA's deadly poisoned bookshelves." IKEA stopped production of this popular product worldwide. It cost millions of dollars in lost sales, research and redesign, and injured the company's reputation before the problem was solved. The company had to go back to the manufacturer, then to the suppliers of all the components in the bookshelves, and ultimately back to the chemical companies that supplied the suppliers to trace the problem and to fix it. It was a systemic issue involving designers, specifiers, and suppliers. This headline about deadly poisoned bookshelves marks the day that IKEA "woke up," according to Erik Linander, who was appointed as the company's first Environmental Coordinator for IKEA Sweden shortly after this incident.[144]

As we interviewed IKEA co-workers about sustainability it became clear that one of the dynamics that IKEA woke up to was a dissonance between

[143]The Natural Step Framework is discussed in more detail in Chapter 3.
[144]See Chapter 3 of this dissertation for more detail on The Natural Step Framework.

stories. IKEA's business story was about a better everyday life for the majority of people. This story was Kamprad's original vision and it still guides the company's values and its actions. The story that was emerging around environmental issues—deadly poisoned bookshelves—ran counter to that core story.

At the time that IKEA's co-workers were experiencing this story dissonance, Drs. Karl-Henrik Robèrt, a cancer scientist, and John Holmberg, a physicist, were developing The Natural Step Framework, also in Sweden. Anders Moberg, President of IKEA at that time, asked Russel Johnson, who was then head of quality for the IKEA Group, to figure out the meaning of this new type of consumer inquiry and activist criticism about the environment, and to map out which environmental issues were relevant to IKEA's business. Johnson was charged with developing an environmental policy for the company. "Environment is not just a new fashion," Moberg told Johnson, "it will not just fade away, it is the new reality and we have to adapt to it." Johnson organized a task force to develop the environmental policy. This group quickly recognized that it did not have the internal expertise to understand which environmental issues could impact IKEA's business or which ways IKEA's business could impact the environment. This concern about the environment was totally a new story for IKEA, and a new aspect of delivering on its promise to improve the everyday life of the majority of people.

The task force worked over the course of a year and conferred with external experts to understand this new story, which in this paper I refer to as the "un-sustainability" story. Johnson's objective was determining what actions IKEA needed to put in place. During the course of the task force deliberations, Johnson heard about Dr. Robèrt's work. In particular he heard that Robèrt was a "balanced environmental thinker," whose work was under the patronage of the King of Sweden. Robèrt was invited to speak at an "environmental day" Johnson organized for IKEA corporate executives. These

executives, Johnson told us, were somewhat suspicious coming into that meeting. However, Johnson remembered, Robèrt "presented a quick story of how the Earth looked three billion years ago, how it has evolved, and how we are now running the evolutionary picture in reverse. He showed us that the situation is really serious, but that it's not too late, and that we can change it. It is companies, enterprises that can make a difference." Robèrt told the story about The Natural Step system conditions that he and Holmberg had developed, at which point John knew he had found the approach for which he had been searching.

IKEA adopted The Natural Step Framework to guide its thinking and its actions around environmental issues. Johnson explained that the company chose this approach for two core reasons: first, Robèrt told a positive story—that IKEA could make a difference because of its ability to influence people. Making a difference in the everyday life of the majority of people is core to IKEA's story. For the better part of its history, people trusted IKEA. They trusted the story. Second, The Natural Step Framework gave IKEA a structure, a way to see the world. This structure was a story that made sense. Johnson told us: "The Natural Step provided a compass, a means to orient us to move ahead. We can use these System Conditions to test the changes we want to make, to see how the proposed change relates to these System Conditions." The Framework provided a structure within which IKEA could take risks, could take responsibility, and could dare to transform what at first was seemingly impossible—designing, manufacturing, and delivering product and running their company more sustainably—into the possible.

The Natural Step Framework was introduced through training to all of IKEA's divisions. The chemists in the textile division, at that time a $1 billion business unit, used the Framework to figure out how to apply sustainability principles to the products offered in their part of the business. In addition to the system conditions (see Chapter 3), The Natural Step Framework uses a

planning approached called "backcasting." Backcasting is essentially a way to plan by telling a story from the future. Unlike forecasting that begins with the present state and extrapolates that state into the future, backcasting begins with a desired future state and asks how we get there from where we are today. The combination of these two methods enabled the textile division to develop an approach to sustainability in IKEA that was completely in alignment with its own core stories. The Natural Step system conditions provided a "true north" to help the Textile Division describe what a sustainable textile product would look like: it would meet all four system conditions. Then backcasting from that ideal state, the company could look at how its products are being made today with respect to the core elements of that future sustainable product vision. Then stone by stone, step by step, the chemists and product designers could improve the sustainability aspects of its products. At first the prospect of creating sustainable product seemed close to impossible, but as that term is not part of IKEA's lexicon, the textile division figured out how to clear the field of boulders. Ultimately the story about the stair step model that was developed in the textile division was told throughout the company, and other divisions in the system began to adopt it as the way they could also approach sustainability.

What did the IKEA sustainability story do to IKEA's business? At the time that IKEA was beginning to explore how it would integrate this new element into its core story about making a positive difference in the lives of everyday people, another story was fairly prevalent in business: that being proactive around environmental issues was a cost that business could not afford, and that doing so would add to the price the consumer would have to pay, making products too expensive. Kamprad threw down the gauntlet on this story. He told his business leaders a different story: that a focus on environmental sustainability was important to the company, and that the customer was not to pay more for the products. "Nothing is impossible:" this was the company's story, and it was its approach to sustainability. Moberg told us, "Sustainability

is the key word for the future. Our ambition is to work step by carefully thought-out step, and with great respect, towards a business based on sound ecological principles." This is the business story of the future and the story that IKEA began to integrate in the mid-1990s.

The use of The Natural Step Framework is only a small part of the story about IKEA's adoption of more sustainable practices. The Framework provided a story the structure IKEA needed, but it was IKEA that took that structure and converted it successfully into action and practice. The story of how IKEA did this can be summarized in just a few storylines: educate everyone; involve co-workers; take risks and innovate, fear of mistakes is the enemy of evolution; set out a sustainability vision and approach it step-by step; get into action; work across your systems; measure your results; and constantly improve your practices to move toward your sustainability vision. This step-by-step process is what made it possible to grow life-sustaining food in Småland, it is what enabled Kamprad to go from selling pencils to neighboring farms to creating one of the most successful companies on the planet, and it is the story of how IKEA integrated sustainability into its company's story. Integrating this story has made IKEA a stronger and better company. According to an annual "Trust Monitor" compiled by researchers at the University of Gothenburg in Sweden,[145] IKEA consistently ranks among the top most trusted organizations in Swedish society, higher than the Swedish government or the church. Even in 2008, a year when many question the trustworthiness of business leaders even in Sweden, IKEA holds this top rank. A focus on sustainability has not hurt the company's story, if anything, it has strengthened it; and that is a story that helps sustainability make sense to other companies.

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[145]See http://idw-online.de/pages/de/news?id=289645 for an article reporting on the Trust Monitor. The actual monitor is available on this website; however it is in Swedish. "Business leaders receive low grades in this year's Trust Barometer. Eva Lundgren, University of Gothenburg, Informationsavdelningen/Communications Department, Schwedischer Forschungsrat-The Swedish Research Council, November 19, 2008.

We wrote about IKEA in *The Natural Step for Business* almost a decade ago. Moberg was right: environmental concern was not just a fashion; it is a reality. Today IKEA's story continues to be about low prices, but the company has added a new line to this promise:" but not at any price."[146] Sustainability practice is considered by IKEA to be simply good business practice. IKEA was always true to its story and the practitioners working on sustainability inside of IKEA looked for ways to make sustainability intelligible in terms that fit that story. In the mid-1990s when Johnson and his task force set out to create an environmental policy, they did not have the internal expertise to make sense out of what belonged in that policy or what environmental issues made sense for them to target. Today sustainability—expressed as environmental and social responsibility as well as economic responsibility—is integral to the company's identity: its story about itself. IKEA's website declares: "Low prices are the cornerstone of the IKEA vision and our business idea - but not at any price. At the IKEA Group, we believe that taking responsibility for people and the environment is a prerequisite for doing good business."[147] The company now has internal expertise and capacity to make this story true through action, and it holds its managers accountable for delivering on the company's promise: "IKEA Group managers have the task to ensure social and environmental responsibility is integrated in our day-to-day business. To support business, there are a number of specialists covering a wide range of areas, such as chemical experts, foresters, IWAY auditors and energy experts. All IKEA Group stores and distribution centres have environmental co-ordinators who work in the areas such as training, waste management, water and energy conservation."[148]

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[146]IKEA: People and the Environment, available at: http://www.ikea.com/ms/en_GB/about_ikea_new/our_responsibility/index.html. Last accessed on May 31, 2009.
[147]http://www.ikea-group.ikea.com/?ID=3
[148]http://www.ikea-group.ikea.com/?ID=3

We learned, and continue to learn, an enormous amount from the stories IKEA co-workers shared with us. First of all, we learned about the tremendous passion that people within the company had for figuring out how IKEA could run its business in a way that made a real positive difference in the quality of people's lives. To IKEA the story of sustainability was totally consistent with this value and this aspiration. This congruence of stories empowered IKEA co-workers to develop more sustainable practices as a "normal" rather than an "exceptional" way to coordinate their activities. Second, we learned about the power of a positive story. It is easy to get caught up in the drama and urgency of the un-sustainability story and to judge and blame organizations, particularly corporations, for being "the problem." The fact is we are all embedded in and contribute to an unsustainable global society. There can be no "sustainable organization" in an unsustainable world. So we are not about creating a sustainable IKEA or a sustainable Nike. We are about creating organizations that contribute to the sustainability of global society.

We are all part of the problem, especially in industrialized consumer-oriented societies. The positive story focuses on how we can and must become part of the solution—all of us. The guiding principles we use today to tell the story of sustainability to other organizations is something we learned through our dialogues with IKEA co-workers: "the situation is serious, in fact, probably worse than you think; it is not too late; and we <u>can</u> make a difference." This insight helped us to evolve how we tell the sustainability story in our practice when we are invited into organizations. We tell the story of global trends that indicate we are on an unsustainable course. We then tell the story about frameworks, particularly The Natural Step Framework, to help us structure how to think about making a difference. Next we tell the story of organizations, communities, technologies, and solutions that are focused on making this difference. And then we work with the organizational system to create their story of how they can and will begin to make a difference that contributes to a more sustainable global society. We tell IKEA's story because it flies in the

face of the stories we often hear from businesses that sustainability will cost too much. We tell the story of IKEA to individuals and teams inside the organizations with which we work, because it helps them see a way forward: how they can take this seemingly overwhelming task of sustainable practice and make it actionable: step-by-step. This is a reassuring and empowering story.

The third we learned was to pay conscious and close attention to the stories that make up an organization's mythology and influence its organizational norms, systems, and basic sense making processes. These stories show up in the decisions, strategies, structures and behaviors that make up individual, team, and organizational practices. They show up in speeches, reports and websites related to that organization. These stories provide cues about where and how we can help make the story of sustainability intelligible to those who inhabit and make up the organization.

We learned these lessons from the stories shared by IKEA and other practitioners we interviewed during our research for Brian's dissertation and for our book The Natural Step for Business. The application of these lessons in our own practice, however, began in earnest as we began our work with Nike.

NIKE'S Sustainability Story

Although today Nike has become a recognized leader in sustainable practice, the company, much like IKEA, came to sustainability through story dissonance. In the mid-1990s, Nike became the target of activists. The negative tidal wave that hit the company as accusations of sweatshop labor practices not only damaged Nike's profitability and reputation; it was an affront to the company's image and story about itself. In reaction to the shock of getting hit so badly around labor practices, Nike investigated what other issues might arise in society that it had not considered as a legitimate concern in its story of the world. Environmental factors were identified as an area of

potential vulnerability and, as in the case of IKEA; resources were allocated to explore what this meant to the company.

Nike is a company founded by and in large part made up of people who are passionate about sport, fitness, performance, innovation, and excellence. The Nike campus in Beaverton, Oregon is one of the most beautiful corporate settings Brian and I have ever experienced. It is also a temple to sport. The buildings are named for star athletes. Playing fields and jogging trails are integrated into the campus, and it has a world-class fitness center for its employees. Nike's story is a hero's tale: infused with the presence of its founders: Bill Bowerman and Phil Knight. As Nike tells the tale:

> When Nike breathed its first breath, it inhaled the spirit of two men:
>
> Before there was the Swoosh, before there was Nike, there were two visionary men who pioneered a revolution in athletic footwear that redefined the industry.
>
> Bill Bowerman was a nationally respected track and field coach at the University of Oregon, who was constantly seeking ways to give his athletes a competitive advantage. He experimented with different track surfaces, re-hydration drinks and – most importantly – innovations in running shoes. But the established footwear manufacturers of the 1950s ignored the ideas he tried to offer them, so Bowerman began cobbling shoes for his runners.
>
> Phil Knight was a talented middle-distance runner from Portland, who enrolled at Oregon in the fall of 1955 and competed for Bowerman's track program. Upon graduating

> from Oregon, Knight earned his MBA in finance from Stanford University, where he wrote a paper that proposed quality running shoes could be manufactured in Japan that would compete with more established German brands. But his letters to manufacturers in Japan and Asia went unanswered, so Knight took a chance.
>
> He made a cold-call on the Onitsuka Co. in Kobe, Japan, and persuaded the manufacturer of Tiger shoes to make Knight a distributor of Tiger running shoes in the United States. When the first set of sample shoes arrived, Knight sent several pairs to Bowerman, hoping to make a sale. Instead, Bowerman stunned Knight by offering to become his partner, and to provide his footwear design ideas to Tiger.
>
> They shook hands to form Blue Ribbon Sports, pledged $500 each and placed their first order of 300 pairs of shoes in January 1964. Knight sold the shoes out of the trunk of his green Plymouth Valiant, while Bowerman began ripping apart Tiger shoes to see how he could make them lighter and better, and enlisted his University of Oregon runners to wear-test his creations. In essence, the foundation for what would become Nike had been established.[149]

These are heroic figures – innovators, athletes, and entrepreneurs, going against the grain, improving practice, bringing the unthought-of to life, who formed the company on "a handshake, $500 and mutual trust." By the mid-1990s, Nike was identified with star athletes, cool product, high performance,

[149]The excerpts in this paragraph can be found on the Nike website at: http://www.nikebiz.com/company_overview/history/1950s.html and http://www.nikebiz.com/company_overview/history/1960s.html. Last accessed on May 31, 2009.

and excellence. It was definitely "cool" and "edgy" to work at Nike and cool and edgy to wear Nike products. Then the headlines hit with stories that linked the company with abysmal working conditions and exploitation of the workers that made Nike products in third world countries. Seemingly overnight and without warning, the external story about Nike went from "cool" to "cruel."

This was a shock to the Nike system and a dissonance to its story about itself. The story of people who cared about innovation, performance and the celebration of excellence did not align with the story of "slave labor," "child labor," and "sweatshop conditions." Nike, as many companies at that time, believed that it was sufficient to insist that their contract manufacturers obeyed the laws in their countries. The company was not prepared for the way consumers reacted: singling out Nike as a company to be reviled and boycotted. One reaction to this shock was to ask what other issues could possibly take the company unaware: what other activist and consumer concerns were emerging? The company identified environmental issues. Nike already had a small team that was tasked with looking at environmental issues; however, these issues did not play much of a role in the company's business decisions: they were part of a peripheral checklist, not central to the company's story. Environmental concern was not considered a function that was core to the business such as product research, product design and development or business strategy or logistics. Working on environmental issues was not considered a step in an upward career path. It was staffed by individuals who were passionate and eager to ensure that Nike did not get caught around environmental issues as it had around labor issues. Although passionate, their voices were peripheral to what was truly important to the company's story.

Because the labor practice issues had been such a shock and because environmental issues were becoming more prominent in the press and in the

activist community, in 1998 Nike allocated resources for the environmental team to explore the potential threats and opportunities posed by environmental issues. As with IKEA, the Nike environmental team did not have the expertise in house to understand what issues to pay attention to or where Nike's environmental impact might be the greatest or make them the most vulnerable. The Nike team put together a program of education and action that engaged a cross-section of Nike's system and brought in the top thinkers at that time in these emerging fields of systems thinking and sustainability in organizations.

At a time when many Nike employees were feeling the pain and defensiveness resulting from the labor practices issue, the positive focus on the environment was experienced initially as hopeful and proactive. In their zeal to inject this positive element into a wounded culture, and to differentiate the initiative, the team decided to call the 100 or so employees who were engaged in this education action program "Shambhala Warriors," based on a Tibetan Buddhist prophecy.

The prophecy is actually a beautiful and hopeful story. Essentially it says that in a time when the world faces the gravest danger and hangs by the frailest threads, the Kingdom of Shambhala emerges. It is not a physical place, but exists in the hearts and minds of Shambhala Warriors. You cannot recognize these warriors by their armor, because they do not wear any. They wear no uniforms or insignias, but are dressed like you and me. They move within the halls of power where decisions are made so that they can dismantle the weapons that threaten the world. They can do this because these weapons were created by human minds and so can be unmade by human minds and they arise as a result of human choices and relationships. The only weapons these warriors carry are compassion and insight. Many of the people involved in the "Shambhala initiative" actually loved the story and identified with it.

So what went wrong? Resources were committed. People across the system were engaged, many passionately so. A new story was emerging. However, within the Nike culture and story at that time, the story of the Shambhala warrior was unintelligible, it did not make sense, and it did not provide a metaphor to bridge the story of sustainability with the Nike story of star athletes and heroes who were not only recognized but celebrated.

The Shambhala program was scheduled to take place over the course of nine months. The people who were part of it became more educated about sustainability and systems thinking, became proud again of being part of Nike, exhibited great enthusiasm that Nike could make a positive difference in the world again, and started to put in place practices that would a decade later help make Nike the leader they envisioned it could be. However this enthusiasm was coupled with a story that did not make sense within the system, and this resulted in pushback from the culture. Some among the Nike leadership expressed the concern that a cult was forming within the company that was not tied to the core business or focused on generating business success—the things that made sense in any business context. Nike's profits had flat-lined. It was still being attacked in the press. It had become a pariah among some segments of its previously loyal customers. And now there was a group within the company that was spending money and raising interest around activities that did not seem to have a clear connection to sport, athletic excellence, competition or Nike's identity.

Questions were raised about what return was being delivered for the company's investment in the program. How was this contributing to the conventional measures of business growth and profitability? Given the challenges the company was facing, did it make sense to "divert" attention in this direction? This clash of stories set the sustainability initiative back. The name was changed, the enthusiasm was tempered, and the internal team had

to regroup and work on building business credibility for the ideas that were born during the process.

Today Nike sustainability practitioners are integrated into the business and are on the senior leadership team. Sustainability is spoken about in the following terms: "As we look at how we design and develop products and run our global business, it's not enough to be solving the challenges of today," said President and CEO Mark Parker. "We are designing for the sustainable economy of tomorrow, and for us that means using fewer resources, more sustainable materials and renewable energy to produce new products" (Nike, 2009).[150] Sustainability is connected with product—the heart of Nike's business. It is also associated with a conventional business story—return on investment (ROI): "We are embracing ROI thinking to help us build our business case for corporate responsibility and measure the broader impact of our work. We call this ROI^2, creating an exponential return from integrating corporate responsibility into our business. While not a straight financial formula, ROI^2 is proving to be a powerful concept for our team and our business partners. This approach forces us to focus on the business impact of our corporate responsibility strategy, creating greater clarity on how responsible business practices can be a source of growth and innovation" (Nike, 2007).[151]

The way that the story of sustainability is told within Nike is not the only thing that has changed. The Nike story itself has changed. The title of Nike's most recent Corporate Responsibility report captures the essence of this evolved story: *Innovate for a Better World*. Sustainability principles have been integrated into Nike's supply chain operations, into its marketing, and, perhaps most importantly, into its product—the most important component of

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[150]http://www.nikeresponsibility.com/?#nikesapproach/main. Last accessed on May 31, 2009.
[151]Nike, Inc. (2007) *Innovate for a Better World*. P. 12. Available at: http://www.nikebiz.com/responsibility/reporting.html. Last accessed on May 31, 2009.

the Nike identity. Nike calls this approach to product "Considered" because its new product platform—how product is researched, developed, designed and delivered—considers the sustainability impacts of products by favoring environmentally-preferable materials, reducing the use of toxic chemicals, and reducing waste. Nike's goal is to apply this approach to product, which had its genesis in Shambhala, to all its products.

A key milestone and indicator of the integration of sustainability into Nike's story occurred in 2008 with the release of the 23rd edition of Nike's iconic shoe created for star athlete Michael Jordan. The Air Jordan XXIII was created using the "Considered" platform. This shoe represents the core of Nike's story and culture. It also represents the integration of sustainability into Nike's story.

The practitioners within Nike were true pioneers in sustainability practice in North America, and like many pioneers they had to move through some very challenging and difficult territory without clear maps to guide them. Brian and I owe these practitioners a debt of gratitude: that we were able learn alongside them. Our work with Nike validated what we learned from practitioners at IKEA: the story of the organization matters, and the language of that story is an important source of metaphors for introducing something new to the culture. Like IKEA, Nike did not have the internal expertise to determine what environmental issues were most important to focus on, or how best to engage its culture or people in the process of understanding these issues and translating that understanding into action. The Nike team approached this challenge in a way that was consistent with Nike's story and approach: they looked for the "stars" in the nascent sustainability and organizational disciplines; they brought in a diverse range of speakers to challenge the company's assumptions and to expand the Shambhala participant's thinking; they wanted to turn Nike's worldview on its head. We were brought in as functional experts—backbench support rather than star

athletes. In this role, we had the opportunity to observe as well as participate and later to provide insight into how the company would eventually move sustainability forward, but that comes later in the story.

One of the lessons we learned in this participant-observer role is that we, as sustainability practitioners, need to be conscious of, and take responsibility for, the stories we bring into the mix when we work with organizations. What story do we tell about sustainability? What story do we tell about the organization? What story do we tell about what sustainability means to the organization? In other words, we need to be cognizant of our assumptions and stories walking in the door. As sustainability practitioners we may believe, even "know with certainty" that the story of society needs to change from un-sustainable to sustainable, that is our story. We also hold our own stories about the organizations with which we work. Every "expert" and practitioner that came into Nike had a story about the company; its place in society; its "good" or "bad" nature; and its ability and willingness to change. Every "expert" and practitioner that was part of the Shambhala also had a story of what his/her role was in Nike: educator, chastiser, supporter of the company's success and process; and they had their stories of what they thought Nike should do or become as a result of their involvement with the company. Nike brought in a diverse set of perspectives and speakers to represent them, many the creators or main spokespersons for the perspective they represented. Each brought in his/her own story about his/her perspective and about why it was <u>the</u> perspective Nike should use. All of these stories came into the room, sometimes creating a cacophony of stories with no overall storyline to make sense of their divergent or convergent themes, and often with little or no thought to how these diverse perspectives intersected with Nike's own story.

When we, as practitioners, go into an organization we must recognize that it has its own stories in its own language that for the most part have worked quite well for it. This was certainly the case at Nike until consumer

reaction around labor practices hurt both the company's business results and the positive self-image of those who worked at the company. One strategy a practitioner could take would be to go into Nike and point out the faults in its story as a way to challenge the company into taking a different course of action: to challenge and change the organization's story. Certainly Nike's critics around labor practices took that approach, and it did get the company into action. Even one or two of the headliner speakers that Nike brought into its Shambhala initiative focused on this "what's wrong with your story" approach. Nike was already being attacked in the press. It was already hearing what was wrong with its story. We saw first hand, by working with Shambhala process participants, how disempowering it is to use this negative approach to motivate positive change. The message we chose to share was the one we learned at IKEA: the situation is serious, in fact worse than you think; it is not too late; and you, at Nike have the power and imagination to make a real and positive difference. The story we consciously chose to tell was one of possibility not one of blame.

Attacking an organization's story outright is not the only way to create story incongruence. Even with the best intentions the Nike Environmental Action Team introduced incongruence by associating the sustainability story with Buddhist mythology. It just did not make sense to a lot of people in the Nike culture. It is challenging, even an art, to create something that is new, that invites new perspectives and possibilities, and to do it in the language, with terms and forms, that are intelligible without losing the power that makes the initiative distinct. We need to create new terms and forms using the raw material of the organization's existing intelligibility. If we take a systems perspective where everything is connected to everything else, one of our tasks is to find the connection between the story of sustainability and the story of the organization and to frame the conversation in light of that connection. At IKEA, for example, building a fence or an organization stone-by-stone through persistent, diligent work made perfect sense. So approaching sustainability

step-by-step, product-by-product, and initiative-by-initiative through persistent diligent work also made sense. At Nike this sense-making dynamic was not an integral part of the process design.

Brian and I were brought into Nike to provide expertise in The Natural Step Framework. We were not part of the star presenter lineup; in fact, we were just beginning our practice. Our role became more as part of the team that translated what all these diverse perspectives could mean in the Nike system. In one workshop session we were facilitating, for example, one of the participants exclaimed with some frustration: "we have just been given four system conditions, four principles of natural capitalism, five disciplines of organizational learning, four principles of bio-mimicry and seven fronts of Interface's quest up the mountain of sustainability. How do we know what Nike should do?" Instead of presenting the material we had prepared, we took a flip chart and drew out a simple diagram to try to simplify and synthesize the many ideas they were being exposed to into one storyline:

Figure 3: Making sense of sustainability at Nike.

Our simplified and synthesized storyline started with the universe that we experience and observe. Out of this experience we have created stories that help us make sense of our experience and what we observe. Some of these stories we develop into protocols that we call scientific laws or rules. For example, we mentioned the laws of thermodynamics, which we had discussed earlier in a presentation. From these stories that help us make sense of our experience and observations—and specifically the laws of thermodynamics and principles of biological metabolism, The Natural Step derived three of its system conditions. Based on these system conditions organizations such as IKEA have developed strategies—which is where the principles of natural capitalism, those of biomimicry and those of organizational learning fit in this overall scheme. To enact those strategies, these organizations have developed goals, tactics, and action plans with specific projects. To determine whether their actions are taking them toward

their intention of more sustainable practices, they develop metrics to gauge how far they are from their goals. These metrics help them assess how successful they are in their strategies and whether they are getting closer to meeting the system conditions. The logic of the diagram presented a story that made sense to individuals working at Nike. It simplified the complexity of so many perspectives and approaches and put figuring out more sustainable practices into understandable terms that could be integrated into how business operates.

Although at the beginning of our work with Nike we served primarily as experts on The Natural Step Framework, our recently completed research and book enabled us to serve as observers of the Shambhala initiative and ultimately as advisors to the core Nike team as Nike's sustainability work underwent a series of transformations. We worked closely with this team particularly through some of the challenging days when the Nike system feedback was reactionary and negative. After the Shambhala initiative, Sarah Severn, who headed up the initiative, asked us to conduct a post-mortem to call out the lessons that could be learned from the Shambhala experience. One of the senior leaders in the company, who had not been deeply involved with the process, made the observation that simply naming the initiative something more understandable in Nike language, such as Initiative for Environmental Excellence, or Sustainability Champions Initiative, could have gone a long way in normalizing the initiative within the culture. Of course, one of the intentions of the team that put the Shambhala initiative together was to signal that sustainability was not "business as usual," which is part of the reason for having chosen a "worldview shifting" name. On the one hand, a lot was lost in translation. On the other hand, the internal Nike practitioners were wise enough to step back, examine what had happened through a post-mortem, and to engage in a conversation about how to move forward in a more integrative way. The initiative did not die: it evolved and became stronger, and it became part of Nike's story.

Our experience with Nike motivated the title of our book Dancing with the Tiger, published in 2002. One day after a particularly intense day working with the internal Nike practitioners on the forms and terms Nike could use to represent and live the fit between more sustainable practice in the company's context, we had just gotten back to our hotel room when Brian said with an edge of exhaustion: this is difficult work! I said: yes, it is like dancing with a tiger! We shared one of those moments of instant clarity and intelligibility. As a sustainability practitioner, internal or external to a company, you dance with a lot of tigers—forces that are powerful, real and potentially dangerous, even deadly: competition, the structure of the industry, consumer opinion and preference, economic trends, internal pressures, to name only a few. As a species, humanity also faces the tigers of climate change, water scarcity, pollution, toxic chemicals in our children, growing global population, income disparities, and ecosystem degradation. As a sustainability practitioner you need to dance with all these forces; which means that sometimes you take one step forward and two steps back and one step to the side. The company you work in is a tiger and throughout this process it is extremely important that you don't become its lunch. Your effectiveness relies in large part upon your credibility within the organization; and your credibility relies in turn on your intelligibility.

The practitioners inside Nike learned this lesson, and we learned it with them. For a time the sustainability initiatives needed to pull back and the team of practitioners needed to regroup. The word "Shambhala" was dropped from conversations about sustainability. Greater attention was given to "making the business case for sustainability." Sustainability practitioners became more knowledgeable about the "business" of Nike and developed key internal partnerships to advance what and how a sustainability perspective contributed to business success. Some of the original Shambhala Warriors left the company to find other companies that were beginning to talk about

sustainability. Most stayed with Nike and ironically became true Shambhala Warriors without banners or insignias, persistently and consistently working within the halls of decision makers; product designers and developers; supply chain managers; logisticians; and others to develop greater knowledge and insight about how to integrate the sustainability story into the Nike story in a way that makes sense. They practiced doing this with great compassion for themselves and everyone else within the company, recognizing that we are all trying to make sense of the world together. We were all making this up as we went along.

Our work with Nike started out as external experts on a framework to help the company structure its thinking around sustainability and evolved to observers and advisors on how to integrate sustainability more effectively into the company's story. Doing this provided a catalyst for action. Nike product researchers, designers and developers; employees involved in logistics; employees involved in facilities management all began to explore what engaging in their own activities more sustainably meant. They were the ones who were truly in the position to make sense in the organization. Our role was simply as coaches and catalysts. As we observed this evolution, we came to appreciate that one of the ways to advance any story is to tell it. We engaged individuals within Nike in a process of storytelling, at first through the post-mortem and then through interviews across the company about the work that was emerging. We told the story of Nike in Dancing with the Tiger, and we told it in articles, speeches, and presentations to other companies. Nike also began to tell its sustainability story internally and externally and in the telling learned how to make it intelligible. As it became more intelligible, it became more Nike's own story.

We learned a lot from IKEA, validated what we learned and learned even more from working with Nike. Through this learning, we were evolving our own

story of how to engage in sustainability practice, and we took this story and developed it in collaboration with other organizations.

STARBUCKS' Sustainability Story

When we were approached by Starbucks Coffee Company to help conduct a sustainability assessment of its global operations, we were already fans and loyal customers. However, we really didn't know much about the corporation except that it was our favorite café. As we learned more about the Starbucks story through research and interviews with Starbucks partners, as all the company's employees are called, our appreciation and respect for the company's values and story grew. Starbucks began as a local coffee roaster in the Pike Place Market in Seattle, Washington, founded by three friends. It was an immediate success: providing the experience of high quality coffee and meticulous roasting, while educating customers to appreciate the result.

When Howard Schultz, originally a supplier to Starbucks, joined the company in 1982, he was attracted by the passion and authenticity he experienced in the business. In his travels to Milan on behalf of Starbucks, Schultz spent time visiting espresso bars and fell in love with the espresso bar concept and interactions with the baristas. He recommended that Starbucks expand its business beyond roasting and replicate the espresso bar experience in Seattle. The owners of the company agreed to test the concept. Although it was a success, they were not comfortable with the concept and decided not to pursue it. It didn't fit their story about their company. Schultz left Starbucks and started up his own company, *Il Giornale,* which grew rapidly. In 1987 when the Starbucks owners decided to sell the company Schultz bought it and merged it with *Il Giornale*, keeping the Starbucks name.

From the beginning of his ownership, Schultz was determined to build a company that was based on dignity, and caring for its employees. This

commitment arose in part from Schultz's personal story. In his autobiographical book, *Pour Your Heart Into It*, Schultz describes his father as "a beaten man. In a series of blue-collar jobs—truck driver, factory worker, cab driver" who had "never attained fulfillment and dignity from work he found meaningful."[152] Schultz decided that if he ever ran a company it would be the type of company that would not leave anyone behind. When he purchased Starbucks in 1987, he brought everyone in the company together and promised them that he would not let them down and that he wanted to include people in the decision making process, to be open and honest with them, and to build the company on guiding principles that would make them proud (Schultz, 1997).[153] To stay true to this promise, in 1988 Schultz convinced the Starbucks board to adopt the then unprecedented practice of offering health care benefits that extended to all employees who worked 20 hours or more for the company, arguing that it was simply the right thing to do. By 1990, the company adopted a set of guiding principles that put people ahead of profits and established an internal mission review team and internal system to promote dialogue across the company about what is and is not working. With its first profitable year in 1991, the company established "Bean Stock," a stock option plan for *all* employees working 20 hours a week or more. It was at this point that the term "employee" was dropped and "partner" adopted.

This core story about being a different kind of company laid the foundation for the integration of sustainability into the Starbucks culture. The company already demonstrated the value of respect and care for the people who worked for it directly. The other side of its story is that Starbucks cares passionately about high quality coffee. Coffee is an agricultural product, which makes Starbucks inherently an agriculturally dependent company. Coffee is primarily grown in developing countries, which ties Starbucks to a global system rife with tremendous inequities. Coffee growing impacts the

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[152]Schultz, Howard. (1997). *Pour Your Heart Into It,* New York, Hyperion, p. 4.
[153]Schultz (1997), pp. 101-02.

environment; and some of the finest coffees are grown in environmentally sensitive ecosystems, which connects Starbucks to concerns about environmental health in ecosystems across the planet. Sustainability became a lens through which the story of being a different kind of company could evolve into being a company that could make a real difference: first in the lives of the partners who worked for the company, but extending as well to the communities where the company had retail stores, the communities where coffee is grown, and to the environmental impact of the entire system of activities in which the company engages.

Sustainability found a logical fit in the Starbucks story; it literally had ground to grow in. Today Corporate Responsibility, the term Starbucks uses to express sustainability is considered to be one of the company's four strategic pillars—the lenses through which Starbucks makes its strategic decisions. This is expressed as "doing business in ways that are good to the earth and to each other. (Starbucks, 2009)" and is now being called "Starbucks Shared Planet." This story encompasses Starbucks' system: "from the way we buy our coffee, to minimizing our environmental footprint, to being involved in local communities."[154]

Like Nike, Starbucks is a big company and an icon, which could easily make it a target for activists. A commentary from the *New Internationalist*, titled "People vs Starbucks," points out, for example:

> Starbucks' titanic rise doesn't just say something about consumer preferences; it also says something about global society. The corporation's green and white logo – the mermaid with no nipples stamped on the cup by my side – has come to represent more than Starbucks' stores; it has become an icon

[154]See Starbucks Shared Planet website, http://www.starbucks.com/sharedplanet/index.aspx

> of globalization itself. Starbucks symbolizes the rising role of corporations, service industries and flexible wage schedules. It fits into a bigger pattern that has developed between consumption in the West and exploitation in the Majority World, making it a strategic target for anti-globalization protesters.[155]

Despite its icon position, however, these critical stories have a hard time holding true. As the author of the *New Internationalist* article goes on to say:

> There are those who argue that Starbucks' growth has benefited the Majority World. 'Starbucks has done more to lift coffee farmers out of poverty than almost anyone else – including Oxfam and the do-gooders,' said Alex Singleton, a fellow at the Adam Smith Institute. 'The answer to development is not large amounts of foreign aid; it's getting these countries to engage in the global market, and Starbucks helps that.'
>
> This argument is not just supported by free-marketeers, as Seth Pitchers, Oxfam's Lead on the Make Trade Fair campaign, explains: 'Starbucks has been building demand around premium coffee, which holds profit for farmers because it sells at a premium price.'[156]

Starbucks recognizes that its own sustainability is tied to the environmental and social sustainability of coffee growing areas and communities. It also knows that its size, although making it a potential target, also makes it possible for the company to make a meaningful difference. It is

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[155]Davis, R. (2008), "People vs Starbucks" *New Internationalist:* available on line at: http://www.newint.org/features/special/2008/04/01/starbucks/
[156]Davis, R. (2008).

turning the story of its size into an extension of its corporate responsibility/ sustainability story. Being a large company means that you can use that size to do good, a realization that Nike has also come to and is using to its advantage. Starbucks is taking it a step further by inviting its customers to be part of the story by becoming better informed, taking action, and speaking out, essentially multiplying impact by working together to make a difference. The company has done that by creating web-based "social network" sites to invite anyone who is interested to become involved in the sustainability dialogue and to take action.

In retrospect the story of Starbucks and sustainability might be seen as a natural fit and evolution. An agriculturally based company is obviously connected to the natural environment. A company with an owner determined to create a different kind of company: to treat people with dignity and respect, to provide health care benefits and ownership opportunities for even part-time employees, already has a head start on sustainability. All this is true, but at the beginning of the company's deeper exploration into sustainability, it was not entirely obvious. The art for the practitioner is being able to see how sustainability fits with the organization's story, and to help those in the organization to see that fit as well. Because we are all embedded in unsustainable systems, it is easy to see all the things that our organizations are doing that could be considered unsustainable and to focus on those things when we try to tell the sustainability story. As practitioners we need to help our organizations stand on a foundation of the possible, to see themselves in a story that contributes to a more sustainable future, and to see that story as consistent with the story of who and what they are and want to be in the world. What Starbucks wants to be in the world is a different kind of company, one that cares about its people and demonstrates that caring through tangible actions. From this base it makes sense for the company to extend a culture of caring for its people—from partners to farmers to customers—to a culture of caring about the environment upon which it all depends.

One of the challenges at Starbucks was how to take such a broad universe of genuine concern and draw the right boundaries around it in order to take tangible actions. During our first workshop the cross-functional team we worked with quickly came to the realization that everything is connected. One of the important challenges was to determine where it made sense to focus attention. One of the methods we use to help an organization focus practice is to acknowledge that although everything is connected to everything else, the focus of your sustainability practices can be bounded meaningfully by identifying where you can exercise the greatest control and influence; where you have the greatest opportunities and vulnerabilities; and where the difference you can make aligns with the story of who you want to be in the world.[157] These factors open up a new conversation. The contribution that any organization can make to a more sustainable world begins in areas where it has the greatest control and then expands to where it can have the greatest influence. Starbucks can control its sourcing practices and it can influence the specialty coffee industry because of its relative prominence within it. This process, looking at where to focus for meaningful sustainability action, is described in more detail in Chapter 7.

Beginning with Nike, we started to advise a number of organizations on how to use The Natural Step Framework to organize their thinking around sustainability. In each case we combined education on the use of the Framework with insights we had gained about systems thinking, the importance of story, and how organizations learn and change into workshops focused on helping organizational participants make sense of what sustainability means and how to enact that meaning. Chapter 7 provides more detail on this kind of workshop. We began to think of our workshops as a set of stories: the story of unsustainability, stories using frameworks to understand sustainability, stories about how others were making sense out of sustainability—specifically how

[157]This is described in more detail in Chapter 7.

they were enacting their own story of sustainability, and finally helping the organization develop its own story of sustainability—what it would focus on and why that made sense for them. In addition to providing expertise on a particular Framework to understand sustainability, we became storytellers and facilitators of the telling of stories.

In Starbucks this was easy for several reasons. First of all, the very nature of the business had strong and obvious connections to the health of natural systems. Everyone in the company knew the connection to coffee and to coffee producing regions. Secondly, the story of Starbucks culture was about taking care of people, and being a different kind of company. Everyone in the company knew this story and was part of this story. Although critics, especially activists, tried to associate Starbucks with "sweatshop" growing conditions for farmers as they had "sweatshop labor" for Nike, the stories did not stick. The primary criticism about Starbucks was that it put "mom and pop" coffee shops out of business, a story that ultimately lost its attraction as alternative stories came out about how a Starbucks in the neighborhood actually strengthened trade and increased the number of "mom and pop" bakeries and rival specialty coffee cafes. Starbucks wanted to learn more about sustainability because internally its small Environmental Department said it was the right thing to do, not because the company was being attacked. The company's leadership is in the habit of listening to the advice of its people.

We met Sue Mecklenburg and Ben Packard, the two people who made up the Starbucks Environmental Department at a conference of the Specialty Coffee Association at which we were conducting a series of presentations on The Natural Step Framework. After coming to two of the presentations, Packard asked us if we would be willing to submit a proposal to the company to help them understand the company's environmental footprint—that is, where they had the greatest environmental impacts. Measuring a company's environmental impacts can be a laborious and very time-consuming process,

particularly for a global and growing operation, depending upon the degree of detail and scope of activities you decide to include and still provide little direction for action. We proposed a different approach.

Although Packard used the term "environmental footprint," through several conversations with him, we ascertained that what he really wanted to do was to educate individuals in the company about sustainability, determine where the company's greatest potential environmental impacts were at a high level—positive and negative—and to come up with a plan to address the areas where the company had the greatest impact, or that could make the greatest difference for the company's continued business success. Instead of proposing to go out and measure the details of possible environmental impacts, we proposed to teach a framework that would help Starbucks partners to look at their business through a sustainability lens. From that vantage point partners could make informed decisions about what the company should focus on, what needed to be measured, what actions should be taken, and how to tie all of this to two key factors: living the company's story of corporate responsibility and contributing to the company's success as a business.

One of the things we really appreciated and continue to appreciate about working with Packard is his seemingly innate understanding of systems, particularly of the systems that make up Starbucks and within which Starbucks is embedded. He knew that even with Starbucks' commitment to the environment, he needed to understand the business to know where and how to integrate better practices. He was always keenly aware of the language he needed to use to remain intelligible. In planning the workshop together, he wanted to understand what we would do, how we would do it, what we expected to accomplish, and how he could help make it happen. His role was to work with the internal Starbucks system to bring the right people together, our role was to help the people he brought together develop that part of Starbucks corporate responsibility story that focused on sustainability. Our

goal was that when participants left the workshop they could get into action around that story. Our relationship with Packard became and remains an ongoing dialogue about this evolving Starbucks sustainability story that has gone from exploring an area to which responsible companies should pay attention, to becoming core to Starbucks' values.

Starbucks was a dream organization with which to work on sustainability. The organization's story already had a ready place in which sustainability as a concept, value, and guide to action could grow. We had the opportunity to work with an individual who already understood the un-sustainability story; who also understood a great deal about his organization's stories and systems; and who was eager and open to learn more. For a sustainability practitioner working with different organizations, it is always helpful to work with at least one organization that really gets what you are working with them to do. As practitioners, working with Starbucks helped us test and confirm our approach to working with organizations on integrating sustainability practice. In fact, from that point onward, we began to refer to our practice as sustainability integration. The story of our own practice was evolving.

Although Starbucks is tied very directly to agricultural, i.e., natural ecosystem processes and the company already put people before profits in its internal statement of values, we also learned that the sustainability conversation had to go beyond that. It had to refer to how each focus area we developed contributed to Starbucks' success <u>as a business.</u> A considerable amount of that success is based on intangible assets that the company holds. For Starbucks, these intangible assets include:

- Loyal and profitable customer relationships
- Supportive community relationships
- Productive and secure supplier relationships

- High-quality processes
- Employee knowledge, loyalty, skills and motivation
- Positive brand recognition, reputation, and respect
- Innovation in products and services

Over the course of our work with Starbucks we have conducted numerous workshops with different parts of the company, including several workshops for the company's top leadership. In all of these workshops we emphasize the relationship between sustainability action and these intangible values, and we provide case examples that support our assertions that sustainability action does, indeed, support success in these values. We phrase these as "the benefits of a sustainability strategy." These benefits provide language that is intelligible to business. All of them are important to Starbucks:

- Spurring design & product innovation
- Providing brand protection
- Attracting new customers & strengthening consumer loyalty
- Reducing employee turnover & attracting new employees
- Improving supplier relations
- Ensuring long-term access to materials (raw or recycled)
- Reducing costs & increasing operational efficiency
- Turning risk management into innovation and economic opportunities
- Generating Awards/Recognition

Starbucks helped us to crystallize our understanding that even when an organization's connection to environmental systems is clearly stated and unambiguous, it is not sufficient to talk about sustainability only in those terms. We needed to remind ourselves that the business of business is business. Sometimes it is more than that, as the Starbucks story has evolved to be; however the business side of the story is never absent from the

organization's intelligibility. This means that it needs to be part of the story that we, as practitioners, help the business organization see and write.

THE U.S. ARMY'S Sustainability Story

The story of sustainability in the Army is perhaps one of the most surprising, challenging, and exciting examples of the integration of the sustainability story into an organization's story that we have had the privilege of assisting. One of the things that particularly excited us about the Army's genuine interest in sustainability was our belief that the Army has been a leader in important social movements in the United States such as racial and gender integration and the use of communication technologies such as the Internet. Although Nike and Starbucks are relatively new iconic organizations, the U.S. Army is an enduring one with proven social influence. If the Army was seriously on a course to integrate sustainability into its story we felt it might be an indicator that the sustainability discourse was beginning to permeate wider U.S. culture.

As I tell this story here, I include many voices and stories of individuals who moved this larger story forward. These individuals, who shared their stories with me about how sustainability became meaningful to them personally, helped the sustainability story not only become intelligible in the Army context, they also facilitated the integration of sustainability into the Army story more quickly than in any other organization we had worked with to that point, during a time when the Army was perhaps under more pressure than any other organization with which we had worked.

The U.S. Army is one of the largest, most complex organizations in the world. Its story is integrally connected with the story of the United States as a country:

> The creation of a truly American Army on June 14, 1775, was highly significant to the history of our emerging nation. While the colonial militias and volunteer Minutemen were easily aroused in anger and invaluable in controlling population and resources in the countryside, they often melted away as fast as they were raised. In addition, those forces often identified with their own state or region. However, the first ten companies of Continental Army soldiers were a national force even before the nation was fully formed. The first continentals were recruited from several states and were sent from one end of the thirteen colonies and then states to another. *In time a nation would grow out of the seeds planted by each continental soldier as he signed up not as a "summer soldier" or "sunshine patriot," to use the immortal words of Tom Paine, but as an American soldier in service to his nation whenever and wherever needed.* (Stewart, 2005, p.51, emphasis added).[158]

Army leadership speaks of the Army Vision in the following way: "America has entrusted us to preserve peace, maintain freedom, and defend democracy – a role we have performed for over 230 years. Today, because of our Soldiers and our record of accomplishment, the American people regard the Army as one of the Nation's most respected institutions. We will maintain this trust." The Army exists "to serve the American people, to defend the Nation, to protect vital national interests, and to fulfill national military responsibilities." Its mission is "to provide necessary forces and capabilities to the Combatant Commanders in support of the *National Security* and *Defense*

[158]Stewart, Richard L., (2005) General Editor, *American Military History, Volume 1: The United States Army and the Forging of a Nation, 1775-1917*. Center of Military History United States Army Washington, D.C., pg. 51. The volume is available on line at: http://www.army.mil/cmh/books/AMH-V1/ch03.htm#b.

Strategies" (U.S. Army, 2007).[159]

The U.S. Army contacted us in 2001, when the nation was considered to be at peace, prior to the tragic events of September 11, 2001. Our work with the Army has spanned a time of both war and transformation, a modernization of the Army focused on shifting from a Cold War structured organization into one prepared to operate across the full spectrum of conflict. In this environment and within this institution it is essential that any conversation about sustainability is connected to and supports the Army's mission, otherwise it is not only unintelligible, it is irrelevant and invisible in light of the organization's other pressing life and death demands.

The Army's discourse on sustainability really began in March of 2000, when the U.S. Army Senior Environmental Leadership Conference (SELC) met in Ft. Myer, Virginia. It was the first such meeting since 1997. The SELC brought together 90 military and civilian leaders from General John Keane, Army vice chief of staff and Dr. Bernard Rostker, undersecretary of the Army, to environmental managers for major Army commands. The conference engaged the active participation of 24 general officers and 14 Senior Executive Service leaders representing the full spectrum of Army organizations with key environmental roles. The result of the meeting was an Army Environmental Campaign Plan and an Operational Directive to implement that plan.

The SELC mandated that installations establish an integrated strategy, with a defined end state, that tied objectives to resources and engaged stakeholders at all levels, in order to sustain the Army mission indefinitely. The Forces Command (FORSCOM) Installation Sustainability

[159]U.S. Army (2007), Posture Statement, available on-line at http://www.army.mil/aps/07/, pp. 7.

Program (ISP)[160] was developed to meet that mandate, and to satisfy the requirements of Executive Order 13148 of 22 April 2000, *Leadership in Environmental Management*, which requires all federal agencies and facilities to integrate environmental considerations into day-to-day planning.

In 2001, Army senior leaders wanted immediate action. They wanted to know how they were going to achieve their mission in light of the environmental constraints that were affecting installations. They tasked the FORSCOM environmental staff and support contractors, to work in consultation with installation staffs to design a response to the SELC mandate in the Army Environmental Campaign Plan and Operational Directive. Rudy Stine, then FORSCOM Environmental Branch Chief, and Manette Messenger, Pollution Prevention/Compliance Team Leader, with their teams, led the effort. The approach the team put forward was that

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[160]Information on the evolution of the ISP process benefited enormously from the work done by teams of practitioners who have written a comprehensive guide to the installation sustainability planning process under the leadership of Manette Messenger, P2/Compliance Team Leader at the US Army Installation Management Agency, Southeast Region. Team members/authors include Jeff Atkins, Environmental Compliance Chief at Ft. Campbell, KY; Terry Austin, Sustainability Coordinator, Fort Lewis, WA; Gina Cooper, Fort Benning, GA; Randy Didier, Environmental Chief of the Tobyhanna Ammunition Depot; Timi Dutchuk, Fort Hood, TX; Michelle Fraser-Page, NASA Langley Research Center; Ann Gabriel, SERO water program manager; T.L. Griffin, SAIC; Mark Goodwin, Environmental Trainer at Ft. Bragg, NC; Ted Hammerschmidt, Fort Polk, LA; Michelle Hanson, CERL; Steven Harris, Ft. Bragg environmental trainer; Christina Hudson, NASA (SAIC); Dan Hypes, ODEP/AEC (Versar); David Krooks, CERL; Mike La Duc, Fort Campbell, KY; Bob Larimore, Acting Environmental Chief at Ft. Benning, GA; Jackie Lynd, Ft. Benning P2 program manager; Leslie Martinez, Environmental Trainer at Ft. Polk, LA; Mike McCord, Ft. Polk HW program manager; Kevin Palmer, SAIC; Dave Parks, Anniston Army Depot; Jerry Paruzinski, ITAM, Fort Hood, TX; Lynda Pfau, Fort Bragg, NC (SAIC); Col. Jeff Phillips, Sustainability Chief at the Office of the Director of Environmental Programs (ODEP); Tim Powers, Ft. Campbell sustainability planner; Jeff Salmon, Fort Hood,TX; Carl Scott, SAIE-ESOH; Rick Sinclair, IMA SERO; Dan Taphorn, Army Engineer School; Jerry Vesey, Fort Hood, TX; Doug Warnock, OACSIM ODEP; Paul Wirt, P2/Compliance Chief, Fort Bragg, NC; and John Wuichet, SERO (JMWA).

they would work with the installations to explore what solutions made sense from the ground up. Frankly, they were not certain what the approach should be.

At that time, Messenger says, she was not certain about how to move forward when she had the good fortune to be invited to a sustainability conference at the Marine Corps Base in Camp LeJuene, North Carolina. She recalls, "I just sat there with my mouth open because I knew I had found what the leadership was talking about. These guys were talking about the same thing." What the leadership was looking for, Messenger explains, was a way to reduce the Army's environmental impact to the point that it was ahead of legislation, and environmental issues would no longer constrain the mission. That was the first time that Messenger had heard the term "sustainability" never mind linking it to the needs of the U.S. Army. "I realized," Messenger says, "that not only was there already an answer, but it was already pretty fully fleshed out, business had been working on it for many years at that point. There was a body of literature out there we could learn from, there were people out there we could learn from. That was April 2001."

Messenger recalls, "We started our first book club, which came from the understanding that there was a whole body of work out there that we were going to try to emulate. It was actually written down and we needed to read those books. The commitment was that there was a book leader who was committed to reading the book, doing a briefing, and then we all got on the phone for an hour and the first 30 minutes was the briefing and the next 30 minutes was spent asking what does this mean to the Army. And so it was during that period of discussions that we came across a common understanding of what the business community was doing and the rest of the world was doing and what it might mean to the Army. We still

found no way to 'sound-bite' this in a way that made sense. The sound bite was just too generic and global, you don't know what to do next, unless you can get people to read and discuss, you don't just get this, it takes a long time to wrap your arms around it. That's why we called you." One of the first books that the Army read in the course of their explorations was our book on sustainability in corporate practice: *The Natural Step for Business*. Messenger and her team asked us to help them figure out how to do in the Army what was happening in the corporate sector.

In May 2001 Messenger scheduled a meeting with the Installation Environmental Chiefs. "I knew it wasn't going to happen unless I could talk an installation into working with me. And that was a point of extremely high tension for me, that meeting where I knew I had to talk to them without two stars on my shoulders with the ability to insist." Paul Steucke, Environmental Chief at Fort Lewis in Washington State attended the meeting. Steucke and his team had led the charge at Fort Lewis to implement ISO 14001, a globally recognized Environmental Management System, even before Executive Order 13148, was issued in April 2000, which required that an EMS be in place in all Federal Agencies no later than December 31, 2005, and also prior to issuance of the Deputy Assistant Secretary of the Army for Environment, Safety and Occupational Health [DASA/(ESOH)] & the Assistant Chief of Staff for Installation Management (ACSIM) Policy Letters, which specified the utilization of ISO 14000 criteria in the Army.

The effort to get the Installation to accept and then work toward ISO14001 certification had been an intensive battle. Through the persistent and tireless effort of Steucke's staff, Fort Lewis became a leader in the Army in Environmental Management Systems, and the Fort Lewis EMS Manual was posted as an example on the Environmental Management System Library

website. Looking back, Steucke reflects: "the culture had changed, and achieving that change and the certification was, at that time, easily the most difficult, frustrating, and rewarding thing I had ever been part of. Ever." When Steucke learned about Messenger's idea about sustainability, his reaction was: "another top down driven requirement, and duplicative given Fort Lewis had just implemented its EMS." Steucke recalls: "I just didn't see much value there. I thought, 'I've gotten this.'"

Steucke could see the benefit of Messenger's approach—focus on how sustainability could support the Army mission—but he was not overly excited about it. He felt that the proposed ISP was a nice concept, one that could help enhance the ISO 14001 EMS expansion, but not something that would make a huge difference, since the EMS had already succeeded in getting the installation to an extraordinarily high level of compliance with environmental laws and regulations. After all, compliance was still king, still thought to be *THE* one and only risk to mission accomplishment.

Therefore, when Messenger asked for volunteers to pilot the Installation Sustainability Program, Steucke and Fort Lewis, although recognized for their leadership, did not step up. Paul Wirt, Environmental Chief at Fort Bragg in North Carolina, did. Fort Bragg would be the first installation to initiate the ISP process. Wirt had been in his job for five months. He had never heard of the term *sustainability* before Messenger's invitation. Wirt recalls that on the last day of the conference Messenger said "we're going to have a meeting on this thing we're calling sustainability, where we're looking to give the installations some additional support to try to get a baseline of where they are and to do some forward thinking." Wirt recalls: "I was so excited that someone was looking at long range planning in the environmental area as something feasible to do—whatever they wanted to call it—and they were going to pay for it!"

Despite his initial enthusiasm, Wirt, new to his job, had begun to wonder: "This must not be practical because apparently nobody else is doing it, you know. I called around and no other installations were doing long range environmental planning with set objectives and visions. Since I was new to the job, I wondered whether I was out of whack to think it was possible. I was ecstatic that Manette thought it made sense. I told her 'I will take the lead in whatever you want to do. You don't have to convince me of anything, you don't have to worry about whether I'm going to follow through. This is my passion. Let me take the ball and run with it.' And the other side of it was that Fort Bragg didn't have the best reputation in the Army for environmental stewardship. We had a long way to go."

Both Messenger and Wirt knew that it was essential to have a leadership commitment to the program if it was going to gain any traction. Leadership provided the credibility needed. When Wirt briefed COL Addison "Tad" Davis, the Garrison Commander, on the program, Davis's response was: "I love this. I am for this 100%. This makes sense from a business standpoint, for the military, any way you look at this; any way you approach it; this stuff makes sense. And this is going to be a top priority for me." Fort Bragg had a record of poor environmental performance that Davis was intent on correcting and he was looking for some new ideas and new energy to shift that story.

Wirt's team spent months meeting with key players throughout the installation to explain that they would be taking a sustainability approach, to explain how they viewed it, and to explore how this approach could help these key players in their own functions. Wirt recalls the time when he briefed the Division Chief of the entire training division on the installation. Wirt explained that the chief, an ex-infantry officer and a close personal

friend, was very influential on the installation because "he literally touches tens of thousands of people every year from his job." When he briefed the Chief on "this sustainability stuff, he just rolled his eyes in the beginning." Environmental activity on the base was traditionally focused on compliance with laws and regulations. Sustainability went beyond that, but Wirt did not yet have the language to fully help key players understand that.

What the term *sustainability* signified to Wirt was also evolving during this period. Wirt explains:

> In the beginning even though I realized we were going to get installation wide or at least installation level support on this initiative, for the longest time we still called it environmental. We called it the integrated sustainability environmental program; and the focus for the longest time was just on environmental aspects even though we knew the ripple effect was going to be important and touch other folks. I think for a long time we still looked at it as something primarily for the environmental types to execute. It took time to realize that when you're talking about sustainability that the environmental part is a critical aspect, but it really touches and plays out in everything that all these other folks were doing. And they really needed to have a strong ownership in this thing called sustainability. I think that's where the expansion of my mind took place.
>
> So, I think that when I look at it now, I really don't even see the separate environmental aspects, maybe it's just because the environmental aspects of it are just a given to me now. What I see now is much more strategic:

> sustainability is all about having a strategic plan of how you get from where you are now to somewhere in the future using the least amount of resources to do that. And those resources of course, natural resources are critical, but other resources as well. And that's why things like Environmental Management Systems and looking at your processes you see more and more how all that stuff is tied together. And when people are talking about installation sustainability, they're talking about the vision for the installation and yes, most of those things do cover environmental related topics, but we're getting more and more to a point where we are also concerned about health and welfare of our dependents and the children that are there at the installation, and we're concerned about medical care and we're concerned about all these others things. We are beginning to build upon a strong foundation; because what sustainability has done, it's provided us a framework to build on.

Fort Bragg created a sustainability baseline for the installation and engaged in a cross-Installation sustainability workshop to provide education about what sustainability means, explore what it means to the Army and to the Installation, and to set out long-term sustainability goals and objectives. As a result, Fort Bragg established ten aggressive 25-year goals for installation action:

1. Reduce amount of water taken from Little River by 70% by 2025, from current withdrawals of 8.5 million gallons/day.

2. All water discharged from Fort Bragg will meet or exceed North Carolina state high quality water (HQW) standard, by 2025.

3. Landfill waste to be aggressively reduced toward 0 by 2025.

4. Meet minimum platinum standard for all construction by 2020 program, and renovate 25% of all existing structures to at least a bronze standard by 2020.

5. Adopt compatible land use laws/regulations with local communities by 2005.

6. Eliminate energy waste, by giving Commanders energy goals and data on actual energy use, by 2002.

7. Develop acceptable regional commuting options, by 2025.

8. Operate 100% of non-tactical fleet on alternative fuels by 2010.

9. Develop an integrated environmental education program for Fort Bragg, its surrounding communities and interested parties.

10. Work towards 100% Environmentally Preferred Purchasing by 2025 for all purchases.

Wirt comments:

> Now we've got things that we can hang our hat on. We can say at a minimum we've got these ten goals. This is what we want this installation to look like. It's a point of conversation that was never there before. It gives you that foundation. It's amazing that we went so long, because the

> installation did have a strategic plan, but everything was viewed through a stovepipe, I mean it was viewed with a very narrow focus. Now the sustainability concept has forced us to not only look farther out in the future and to be more ambitious in where we take things, but it's also forced people to talk to each other much more because none of those goals, nothing in that vision is something over which one person has the complete ownership. So I think that's the most satisfying thing and probably the biggest development of how I see this. Initially I never thought it would get to that level where in effect at some point the entire installation's strategic plan will be the sustainability plan.

Steucke from Fort Lewis sent Ian Larson, a former Garrison Commander at Fort Lewis and at that time a civilian contractor working on the Fort Lewis EMS, to the Fort Bragg sustainability-planning workshop. Steucke had the greatest respect for Larson, and when he came back from the conference excited, Steucke paid attention. Larson presented some of the things that Fort Bragg had come up with in their 25-year plan: far-reaching, hard-hitting goals. Steucke recalled that this was probably when it first started to hit him that this initiative was something different. There was power behind the Installation Planning Program that differed from what Fort Lewis was doing. Up to that point Steucke had seen sustainability as a subset of the Environmental Management System, the planning piece. But when Larson started talking about what Fort Bragg was planning to do in 25 years, it hit Steucke "like a ton of bricks: this is different, this is visionary." Fort Lewis was still working on objectives and targets that involved better recycling of office paper. That was as aggressive as they were getting. Steucke came to the realization that the EMS is not visionary;

it is operational: sustainability is not a subset of the EMS; the EMS is a supporting function toward the achievement of sustainability.

As he learned more about what Fort Bragg was accomplishing, Steucke began to see sustainability as the "next leap" for the installation. He reflects: "If you've got a good compliance program that you are putting a lot of effort into maintaining, then you've reached a plateau. The next leap is to get an EMS, to put in place some good operating systems that sustain themselves as operating systems. At this point you can maintain compliance with more ease. But compliance isn't good enough. Compliance is going home to your children, and when they ask 'what did you do today?' you answer, 'I didn't go to jail, and I didn't break the law.' We can do better than that, we're better than that."

In Steucke's view, compliance programs tell people what to do. But once people know what to do, it is time to empower them to make the right decisions from the outset. Compliance, Steucke comments, "just gets you to tread water; it doesn't get you anywhere. Treading water was not good enough any more."

Steucke decided to enroll the leadership of Fort Lewis in the Installation Sustainability Planning process. His team briefed COL Green, the Fort Lewis Garrison Commander, about this idea. Initially COL Green's reaction was one of interest, but Green was not really excited. It was later, after the concepts began to sink in, that Green became an enthusiastic supporter. Then the team briefed LTG Hill, Commanding General of Fort Lewis, on the idea of holding an Installation Sustainability Planning Conference in early 2002 and received his support. LTG Hill told Steucke's team that in his opinion the approach made sense. It was the best strategy for combating the slow erosion of the installation's capabilities, and it fit

his philosophy that protection of the environment was more than just following the law, it is "the right thing to do."

Fort Bragg was followed in rapid succession as the major Army installations across the United States scheduled Installation Sustainability workshops starting with Fort Lewis, and followed by Fort Carson, Fort Hood, Fort Campbell, Fort McPherson, Fort Benning, and Fort Stewart. When Fort Lewis completed its first workshop, Steucke reports that immediately after the workshop and formation of the teams, evidence of the power and potential of the sustainability program started to become apparent. He particularly remembers the day that the installation master planner, the lead for the energy/infrastructure team, came into his office and began to talk very excitedly about the FY04 and FY05 MCA program and strategies to incorporate sustainable building concepts into those designs. "He told me that we need to do this now, or we will miss the window and be delayed by at least a year on progress toward the goal." Steucke said to him, "Steve, what's going on? I've never seen you this excited before." He responded, "I've never had goals before." Steucke reported later that the excitement and energy to accomplish these goals goes beyond the environmental staff. "Many of the most avid supporters of making progress toward these goals work in non-environmental positions."

By October 2003, Wirt was detecting significant shifts in mindset at Fort Bragg. He comments that he knew that a shift was happening when his good friend, the Chief in charge of training on the installation who had rolled his eyes when Wirt first introduced the concept of sustainability "called a meeting of all his branch chiefs and section leaders and said 'this sustainability stuff makes sense.' He said, 'not only does it make sense, we should be the leading advocate of sustainability because nowhere is it more readily apparent than when you're dealing with training areas and the

ranges. We have to take care of our resources now or we're not going to have anything to train on 25 years from now. Therefore, I want to make it clear right now, we are going to have our own vision and we are going to set ourselves up to be the most sustainable division on Fort Bragg."

As the ISP was moving from being an innovative process to a more regularized one, another level of socially negotiating the meaning of sustainability in the U.S. Army was taking place: the Army was developing a new Army Strategy for the Environment building upon the lessons learned from the sustainability planning implemented on the ISP Army installations. In October 2004, then Army Chief of Staff Gen. Peter J. Schoomaker, and then-acting Secretary of the Army Les Brownlee signed the strategy document, titled "The Army Strategy for the Environment: Sustain the Mission – Secure the Future." The official U.S. Army Sustainability website—www.sustainability.army.mil—tells the story of how sustainability is being integrated into the Army's story:

> The United States Army has long recognized that our mission is only accomplished because America entrusts us with its most precious resources – its sons and daughters. It is our obligation to ensure that our Soldiers today – and the Soldiers of the future – have the land, water, and air resources they need to train; a healthy environment in which to live; and the support of local communities and the American people.
>
> The new *Army Strategy for the Environment: Sustain the Mission – Secure the Future* establishes a long-range vision that enables the Army to meet its mission today and into the future. Sustainability is the foundation for this Strategy

and a paradigm that focuses our thinking to address both present and future needs while strengthening community partnerships that improve our ability to organize, equip, train, and deploy our Soldiers as part of the joint force.

Sustainability connects our activities today to those of tomorrow with sound business and environmental practices. We have learned over the past decades that simply complying with environmental regulations will not ensure that we will be able to sustain our mission. We must strive to become systems thinkers if we are to benefit from the interrelationships of the *triple bottom line* of sustainability: mission, environment, and community. To sustain the future Army we must implement effective policies and practices that safeguard the environment and our quality of life in a manner that our nation expects of us.

The Army Strategy for the Environment does not pretend to dictate all the answers. It is only the starting point that commits Army leaders at all levels to certain goals and challenges them to develop innovative methods to achieve these goals. Achieving the vision outlined in this strategy will require a deep and personal commitment from every member of the Army team – every leader, every Soldier, every civilian, and every family member. For the Army to be successful on its quest toward sustainability we must all do our part to *Sustain the Mission, Secure the Future!*[161]

[161]For more on Army sustainability as it is being presented by the Army, see: www.sustainability.army.mil

Sustainability had gone from being a term that even those in key environmental roles in the Army did not recognize and use as relevant to their functions in 2000 to becoming a term integrally connected to Army Installation strategy and operations in 2003 beyond the environmental functions.

At the end of 2003, Army installation management staff, supporting consultants and participants from a number of agencies met to review the ISP experience to determine how to expand and accelerate the integration of sustainability practices into all Army installation operations and culture. The group examined and assessed what had been learned during 2001-2003, and began documenting the process to facilitate the effective and more rapid adoption of the sustainability planning process on other installations based on real installation experience. In 2002 installation management had been assigned to a newly created Installation Management Agency (IMA) and then in 2004 to a new command: the Installation Management Command (IMCOM) as the Army continued to transform. Throughout these organizational transformations, sustainability became and remains a core responsibility in installation planning and operation. For example, in its strategic vision IMCOM indicates that the role of the Army's installations are to support an Army at war, while transforming; *support the Army sustainability strategy*; and provide professional development, career opportunities and well-being for its workforce.

In 2005 Davis, the former Garrison Commander at Fort Bragg when the ISP was launched, was appointed to serve as the Deputy Assistant Secretary of the Army (DASA) for Environment, Safety and Occupational Health. Davis had entered the U. S. Government Senior Executive Service in 2004 following a distinguished 26-year Army career. He wanted to increase sustainability awareness beyond installation management and to strengthen

support for integrating a sustainability perspective into the Army as an entire institution. Davis set in motion several sustainability awareness and action programs including the institution of a five-day executive education program for Army officers and a one-day executive sustainability seminar for senior Army leaders including General Officers and civilian senior executive service personnel that we designed and facilitated. As a result of these actions, the senior Army leadership determined that sustainability needed to be integrated into at least two strategic Army documents: the Army Game Plan, a document that describes the strategic challenges the Army faces and the Army Posture Statement (APS), the annual unclassified summary of Army roles, missions, accomplishments, plans, and programs that is designed to reinforce the Secretary and Chief of Staff of the Army posture and budget testimony before Congress. The APS, a basic reference for a broad audience on the general state of the Army, now includes the story of sustainability. It states: "Army Sustainability is a comprehensive, systems approach to planning and decision-making designed to sustain the natural infrastructure, which includes the land, water, air, and energy resources required to conduct our mission." In October 2007, Pete Geren, Secretary of the Army, affirmed: "sustainability is a national security imperative in a world of decreasing natural resources and increasing demand."

In less than eight years the sustainability discourse has moved from margin to mainstream in the Army's own story despite the tremendous stresses on resources and the urgent competing demands on the attention of Army leaders. How did this happen? "The real heroes," Messenger says, "are these people who stood up and made this happen on the installations." Enacting the story is what brings it to life and makes it real.

When we were called by the U.S. Army to help with sustainability at the major installations across the United States we were not certain what to expect. The Army is one of the largest, most complex organizational systems in the world, and perhaps one the last organizations we would ever have imagined contacting us. Although the Army is an icon institution, we initially knew very little about what happened on an Army installation, or even how many installations there were or how large and influential they were in their respective communities.

Although contacted by the Army before the events of September 11, 2001, we did not have an opportunity to meet with them until after that date. We started working with the Army when it was at an increased state of readiness, but before troops were deployed for war in Iraq. It was a time of great uncertainty and also a time of considerable positive focus on American troops. We were somewhat surprised given everything that was happening that the Army was still committed to moving forward with sustainability. Certainly if the Army was not really serious about pursuing sustainability, the events of late 2001 and the growing demands of 2002-2003 were reason enough to defer action on the sustainability front. The fact that the Army moved ahead indicated the seriousness of their intent.

One of the things that excited us the most about working with the Army was the fact that the Army seemed to be on the forefront of important social movements in the story of the United States. We wondered whether this interest was an early indicator that there was a growing consciousness about sustainability in the wider American culture. As we began to learn more about the Army installations—the actual homes and training grounds of America's war fighters—and the stories of the people who worked on those installations, our respect and excitement grew. We were deeply impressed with the passion, intelligence, commitment, and

determination of the people we worked with on the installations, higher headquarters, Forces Command, and later the Installation Management Command.

The story of the Army is of service to the Nation, and the installations are vital in providing that service. One of the reasons why the Army had contacted us was because they had read stories we had written about how corporations were making sense of sustainability in their contexts. From the outset, the individuals with whom we worked had no trouble understanding how important it was to tie sustainability to the story of what was important to their organization. They knew, in fact, that only by being relevant to the Army mission could sustainability make any headway. Everything we did kept coming back to this story—the congruity between sustainability and the Army mission. It was not a hard story to connect.

We worked closely with a growing number of Army sustainability practitioners, and were privileged to be part of their ongoing conversations. When I asked several of these practitioners if they would be willing to share their personal story about how sustainability came to be a meaningful term, I was gratified at the extent of their openness and willingness. I learned that these individuals were already predisposed to be systems thinkers. They were also predisposed to be global strategic thinkers. And they needed also to work in the day-to-day details that make up Army action. We had met all of these individuals through workshops we had designed and conducted across the major Army installations in the country. This was the same workshop that we developed for and conducted within corporations, based on the same "series of stories" design.

We also worked with the Army to train trainers so they could replicate presentations as well as conduct similar the workshops so the

whole process could be spread throughout the Army system. Some of these workshop materials can be found on the Army's sustainability website.[162]

Since 2002, we have provided numerous presentations, specialized seminars, and workshops for specific constituencies within the Army system, each time telling stories of corporate adoption of sustainability practices, and increasingly telling stories about what the installations are doing. At the same time a growing cadre of people within the Army have been out doing the same – making presentations, conducting workshops, telling the story, always connecting sustainability to the Army's bigger story of serving and protecting the Nation. The Army story of sustainability is a very public story even if it is not a well-known story. It is told in numerous Army documents, it is available to the public through websites—particularly the Army Sustainability website (http://www.sustainability.army.mil/)—and through presentations posted on the Internet. A simple search on Google for "army sustainability" yields over 1.8 million references.

The story of sustainability in the Army came to make sense not only because it was framed in congruence with the Army's mission. Even for Steucke who was the Environmental Chief at Fort Lewis this was necessary, but certainly not sufficient for him to take action. It was intelligible, but it didn't yet make sense. It began to make sense when Larson came back from Fort Bragg with a very specific story—what this approach meant with respect to how an Army Installation operates and is run. We make sense as we encounter stories that show us how others made sense. That is why we always tell stories of this nature. The Army contacted us in the first place because we told stories about how businesses were making sense. In every presentation we make, we tell stories of how diverse organizations—

[162] *http://www.sustainability.army.mil/resources/training.cfm*.

business, government, military—are using a sustainability framework. We are a story telling species. The stories we tell matter.

The Army sustainability story also reveals something more about our practice and how it works. We strongly believe in the proposition that it is by far better to teach a person to fish than to give a person a fish to eat if the challenge s/he faces is providing food for his/her family. The story of our role in all of the four organizations featured in this document as well as with every other organization with which we work—the story of our practice— is as storytellers, catalysts, facilitators, and coaches. The real story of sustainability inside each organization is written by hundreds of individuals making sense day to day of a story that is relatively new to them: that through their decisions and actions in the world they are contributing to a less or more sustainable future.

CHAPTER 5

DIALOGUE WITH PRACTITIONERS ABOUT MAKING SENSE BY MAPPING THE SYSTEM

In Chapter 3 I talked about the interrelatedness of biophysical systems and socio-cultural-economic systems. On a macro level, biophysical sustainability means that ecosystems can continue to provide vital ecosystem services to human communities that are organized in socio-cultural-economic systems. We also live and enact our lives within and through human-created systems. Whether we call them organizations, institutions or enterprises, they are the fundamental systems through which we carry out the purposeful organization and coordination of human activities. For the sake of simplicity, I will refer to these human constructions as *organizations*. Organizations can be public or private, large or small, for-profit or not-for-profit, formal or informal. Regardless of size and structure, sustainability practice takes place within organizations.

ORGANIZATIONS AS OPEN COMPLEX ADAPTIVE SYSTEMS

One thing that all organizations have in common is that they are open complex adaptive systems involved in webs of interdependent relationships with other open complex adaptive systems. Even if an organization operates in seeming isolation from other human systems, no organization operates in complete isolation from the services ecosystems provide. All organizations are nested within the biophysical system. Organizations are also nested within human systems that constrain and enable their activities. The organization that we call Nike, Starbucks or the U.S. Army exists within industry systems, societal systems, political systems, economic systems, global trade systems, etc. Each of these organizations is also made up of subsystems generally focused around specific sets of activities such as: product design and development, marketing, supply chain management, strategy, finance,

advertising, logistics, training, facilities operations, building design and development.

Connectedness and emergence are two significant characteristics of open complex adaptive systems. Everything in the system is connected to everything else, which means that the boundaries between actions and consequences can blur, and that all parts of the system are potentially integral to and responsible for the health and wellbeing of the whole system. The properties of complex systems "emerge" from the interactions and relationships among the parts that make up the system. These emergent properties are new, and cannot be reduced to or explained solely by understanding the interactions between discrete components or parts of the system.[163] This means that the whole is not only greater than the sum of its parts; it exhibits new properties and behaviors that you cannot understand simply by dissecting and understanding the parts in isolation.

The whole displays unique and complex emergent behaviors that result from interactions within and between parts (Nadeau, 2006, p. 57).[164] The unique properties that characterize Nike, the U.S. Army or Starbucks, for example, emerge from the interactions within and among the component parts that make up these organizations, including the interactions and relationships between the organization and key stakeholders such as investors, employees, suppliers, government, and customers, and between the organization and ecological systems.

On a global societal scale, sustainability and un-sustainability are both potential emergent properties of the countless actions, interactions and relationships undertaken by countless individuals, enterprises, and communities

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[163]Nadeau, Robert L., 2006. *The Environmental Endgame*. New Brunswick, New Jersey: Rutgers University Press, p. 50.
[164]Nadeau (2006), p. 57.

of the complex living systems of planet Earth. That is, sustainability and un-sustainability are both properties that could emerge from the interactions and relationships of countless complex living systems—human and non-human. We cannot understand sustainability simply by looking at the behavior of the parts or the outcomes that arise from that behavior. In fact, we do not yet fully understand the complex behavior of all the parts, particularly large-scale ecological systems.

Because the global socio-ecological system is complex, uncertainties abound, and our knowledge and understanding of all the dynamics of this complexity is incomplete, it may seem challenging for an organization to discern with certainty which practices make sense and which do not to contribute to a more sustainable future. To develop effective and relevant sustainability practices, we need to imagine—in the midst of complexity and uncertainty—the potential contribution that our own and our organization's interactions and relationships make to the viability or vulnerability of the whole. Although we may not be able to comprehend all these interrelationships, we can at least construct a shared story and map about the system based on what we do know, and move forward with practices that make sense within that map.

DRAWING A MAP OF THE SYSTEM

From the perspective of a sustainability practitioner working with or within an organization, the challenge often is to help the individuals that make up the various sub-systems within the organization "see" the larger *systems*—human and non-human—and the *relationships* within that system and between the organizational system and the larger system that contribute to or detract from sustainability. Most organizational players already think in systems to some extent. For example, Nike employees understand the system, interactions, and relationships that are involved in taking a product from design through delivery to market. The product designer knows what part s/he

plays in the system and what contribution s/he makes to the desired outcome of systemic activities.

The sustainability practice challenge is to expand this innate understanding of systems to include the relationships between day-to-day decisions and activities and the impacts these could have on larger global societal and ecological systems. When we begin to draw this larger map we can also begin to see where different behaviors and actions make sense from a sustainability perspective. Ray Anderson, CEO and Founder of Interface, Inc., and an early leader in corporate sustainability, was inspired to draw this larger systems map when he began to understand the sustainability implications of his business model. Anderson comments: "For the first 21 years of operating my business, I never thought about what we were taking from the Earth or doing to the Earth to make our products. Then questions began to come up about what we were doing for the environment. I had never thought about it. I put together a task force to come up with an environmental position, and they asked me to give them my environmental vision. Well, I didn't have an environmental vision. That is when Paul Hawken's book, *The Ecology of Commerce,* landed on my desk. When I read it, it was like a spear in the chest. I thought, 'future generations will call people like me criminals for plundering the Earth.' If we can't make a product sustainably, we shouldn't make it. And I didn't know whether or how we could make our product sustainably."[165]

Brian and I worked with Anderson, engaged in numerous conversations with him about integrating sustainability into organizations, and interviewed him for our first book on sustainability practice, *The Natural Step for Business*. He shared with us how drawing this larger map of the company's system helped him make better sense of what practices to put in place at Interface, and it helped him communicate with others in the company who did not necessarily share his sustainability "epiphany." What distinguished Anderson's map of the

[165]Personal conversation.

Interface system is that he included key elements on his map that did not show up on most other maps of organizational systems (for more detail on the Interface system map, see Chapter 7).

For example, Anderson included the Earth in his system, especially:

- The lithosphere (beneath the Earth's crust) from which his company's supply chain derived the raw materials—hydrocarbons and heavy metals—that went into his products and that provided the energy to drive his processes; and
- The biosphere from which his company's supply chain derived raw materials and into which the effluents and wastes from his products and processes flowed.

He also included the complex interrelationships that the organization had with key stakeholders including:

- Suppliers;
- Customers in the market;
- Employees; and
- Communities in which the company operates and which it impacts.

By drawing this expanded map of the systems within which Interface is embedded, on which it depends, and on which it has impacts, Anderson was able to better see:

- Where the company had the greatest potential social and environmental impacts;
- Where it was potentially most vulnerable;
- Where it had the greatest opportunities to act;
- Where it could make the biggest difference; and

- Where it could begin to live up to his vision that Interface would become a truly "restorative" company.

Using this map, the company was better able to "see" the relationship between its activities and potential global environmental impacts, and thus to focus where sustainability practices could make the greatest difference. The map also helped individuals and departments within Interface to see how their decisions and actions related to energy use, climate change, pollution, ecosystem degradation, community well being, and the seemingly inexorable buildup of waste in global environmental systems that results from industrial activities. Being able to see the connections, individuals and departments were more empowered to act.

Anderson used this larger map of his corporate system to explain to others—from his board members to public audiences—what sustainability means to Interface as a company. Using this model he describes what he conceives of as the "prototypical company of the 21st Century," his vision of a totally sustainable company. As an engineer, entrepreneur, and successful business leader, Anderson was able to create a picture and tell a story that made sense within his company. This was a fundamental step because making sense of sustainability in the organization's system was foundational to taking action.

We were so impressed with the ability of Anderson's system-map model to help individuals and departments "see" the connectedness and relationships in a corporate system that we adapted the model for use with other organizations. At a cross-functional workshop with the Nike "Shambhala" team, the act of drawing the system on paper helped workshop participants understand better that the environmental impacts of a product were for the most part determined at the design stage. Looking at the system map, the logistics department, for example, could begin to see areas where the company could reduce dependence on fossil fuels, costs and its carbon footprint.

The map that Nike created clearly showed the interrelationships of a business embedded in natural systems, dependent upon those systems, and affecting those systems in every area of its operations. The map was certainly a great educational and awareness-raising tool, which is what the exercise using the map was designed to do. It helped workshop participants see the connections and relationships of the company with social and ecological systems that were generally not considered in their day-to-day operations and decisions. What we failed to do, however, was to focus sufficiently on the internal systems that make up the organization called Nike. Nor did we sufficiently consider how those internal systems influenced and in some cases determined how day-to-day decisions were made and how they would enable or constrain the introduction of more sustainable practices.

This failure to take internal systems into account had a cost. We had succeeded in bringing a microcosm of the Nike system together to learn about sustainability. Mapping the system stimulated the development of numerous projects in the workshop process, some of which laid the foundation for future systemic work. However, in the very design and timing of the whole process we had failed to take into consideration internal planning and budgeting systems; the complexity of explaining and selling sustainability concepts and ideas across departmental and functional systems; or the absolute necessity of mobilizing internal formal and informal communication and influence systems to engage key internal stakeholders and keep them informed. As a result some of the great ideas for projects that were generated did not get funded because they missed the budget cycle, which discouraged the individuals who had developed them with great enthusiasm. Key leaders were not kept informed in a timely manner about the initiative, which led to some leaders questioning the return Nike was getting on the investment that had been made in the program. Many participants in the process were not held accountable by their bosses for specific performance in the initiative, which meant that the time, effort, and passion some gave to the process became invisible when weighed against the

many other deliverables for which they were being held accountable in their day-to-day work. These bumps in the road would have been addressed more effectively had the internal systems been front and center in the planning and implementing of the initiative.

We learned that thinking in systems means remembering that we coordinate our activities through multiple systems at multiple levels that are internal to the organization. One of the ways we learned this most clearly at Nike was by conducting a "post mortem" of the sustainability initiative process to draw out lessons for the future. We did this by interviewing key Nike leaders who were not part of the process as well as individuals who were part of the process to gather their perceptions of what worked and what didn't work. Individuals from both groups reported that one of the problems with the initiative was that it was not integrated sufficiently into the company's internal systems, whether that was the product design and development calendar, the budgeting process for new projects or the systems through which job expectations, accountability, and performance are set and evaluated.

Although when we started our work with Nike we knew a fair amount about Nike's history, we were less knowledgeable about the footwear, apparel and sports equipment industries. We knew something about systems thinking and organizational change, but we were less knowledgeable about the pressures, processes, and politics of Nike's business model. Our learning curve was meteoric. We learned that our work with Nike on sustainability could not be separated from what was happening in industrial, political, economic, and trade systems. Those who were passionately criticizing Nike for its labor practices were not thinking in the context of all these systems. Within Nike, those who were developing, designing, delivering, and marketing product were not thinking in the context of all these systems. They were all looking at parts of the systems and not seeing the whole. What we learned along with Nike is that one of the tasks of a sustainability practitioner is to continuously expand

our vision to include these larger, complex webs of systems while not losing sight of the systems through which our day-to-day action takes place. Nike is a true pioneer in corporate sustainability practice. By definition, pioneers open up or lead the way, blazing a trail where none existed before. We were in a constant learning mode together with the sustainability practitioners at Nike, discovering what we needed to include in our map of the systems with which we were engaged.

Our work at Starbucks benefited significantly from the important lessons we gained from our work with Nike. From the outset with Starbucks we framed our work in alignment with the company's internal organizational systems and kept coming back to them as our work proceeded. When we designed our first sustainability workshop we did so with a deeper appreciation that any focus or action that came out of the workshop needed to work within and through these systems. We recognized that formal and informal systems of authority, influence, expectations, and permission exist within organizations, and these systems influence and constrain how individuals and teams focus their attention and resources. In identifying who should be part of the workshop, we looked carefully for representation across the organizational system, and we ensured that individuals who had the authority to "make things happen" in the company were part of the workshop. Appreciating the importance that sustainability be seen as a systemic imperative, we asked Orin Smith, then CEO of Starbucks, to open the workshop and set out his expectations. We also asked him to be present at the end of the workshop to receive the results of the work done during the workshop, because doing so made workshop participants accountable to the system, symbolically represented by the Chief Executive Officer. The workshop included an important aspect of education and awareness, but at its heart the workshop was about action that would take place in the Starbucks system.

By the time we started working with Starbucks, we knew that as sustainability practitioners it was incumbent on us to understand as much as we could about the industry and set of systems and dynamics in which the company's approach to sustainability would be enacted. As with Nike, the learning curve was steep; we were just more prepared for what it was going to take. In terms of our practice, we expanded our definition of what we needed to include in our discovery process in order to help our clients more effectively. We came to understand that working with any organization on sustainability requires that the sustainability practitioner take the time to see and understand the systems within which it is embedded and through which it coordinates its activities. I go into more detail about some of the elements of our discovery process in Chapter 7.

When we conducted a "system mapping" exercise with Starbucks, we were able to focus the learning and insights experienced by workshop participants into actions that more effectively aligned with the company's internal business and behavioral systems. One of the indicators for us that this approach worked took place near the end of the first Starbucks workshop when Arnie Alger, the Director of Strategy and Planning for Starbucks, stood up and said that he made the personal commitment that sustainability would become integrated into the company's strategic planning process. This was a commitment that he, in his position, had the ability to advance into practice. When he came into the workshop, Alger was skeptical about what relevance environmental issues had to his work in strategy. Sustainability didn't mean anything to him personally or professionally. During the workshop Alger began to understand that an un-sustainable world would not only impact the company, it would impact his children. It became personal. Because the dialogues within the workshop were framed with reference to the company's ongoing systems, he could also make sense of what sustainability meant in relation to those systems, and he could see what those systems meant in

relation to sustainability. A new awareness about the urgency to act could be linked to a course of action that he had authority to take.

INSIGHTS FOR THE SUSTAINABILITY PRACTITIONER

The sustainability practitioner needs to be a systems thinker before s/he can help others see the interconnectedness and interrelationships of the systems in which we all operate. View the organization you work with as a system made up of systems and make every effort to understand what those systems are and how they work. This is important when you are working as a consultant to an organization; it is even more important if you are working as a practitioner within the organization. If you cannot see the systems that influence, enable or constrain the introduction and implementation of sustainability practices, you open yourself and those you work with to potential frustration and setbacks.

As a sustainability practitioner you need to understand as well what the core systems are that heavily influence how the organization operates. For example, in 1999 when we started working with Nike the company was reeling from negative public opinion, translated into negative business results, as a result of accusations about appalling and unfair labor practices in third world countries. Nike's very successful business model is based on producing high-performance product including footwear, apparel, and equipment through contract manufacturers located primarily in developing countries. The company—Nike—focuses on product design, development, marketing, sales, and some retail. The global socio-political-economic system within which Nike does this is characterized by gross disparities between extreme wealth and extreme poverty. Nike did not create this socio-political-economic system or the disparities in it, but it operates within this system and is entangled in a web of relationships that benefit some parts of the system at the expense of other parts.

Many of the developing countries where Nike sources product compete aggressively for the company's business. It provides much needed wage-based employment where unskilled labor is abundant, such as China, Thailand, Indonesia and Bangladesh. Thus Nike is part of a global economic system where the high consumption rates of developed countries such as the United States, are made possible, in part, by this structure of trade and a system of trade agreements that are negotiated between and among countries that offer low labor rates. To carry out its business model, Nike is organized into a system of functions such as product research, design and development; logistics; finance; and marketing; as well as geographical regions and product categories. It is a global company bridging diverse cultures, socio-economic systems, and ecological systems.

When considering sustainability practices, all of these systems need to be taken into account. The consideration of equitable labor practices, for example, cannot be separated from the social/economic/political systems of the countries in which the low-cost labor is located or the fact that providing low-cost labor is an important strategy for economic development in those countries. Neither can the consideration of using low-cost labor be separated from the pressure on Nike's sourcing system to deliver a certain profit margin on product so that the company can deliver on figures that meet or exceed the expectations of the financial system that makes the company a more or less attractive investment. The pressure to deliver a certain profit margin within a certain time schedule cannot be separated from the pressure put on the contract manufacturers to produce the product at low cost, even if that means that in doing so workers are ill-treated or the environment is degraded and polluted because there is no system of laws to ensure that this is not the case. Add to this the pressures of a competitive system where companies are attempting to outmaneuver one another on costs and product, often using the same contract-manufacturers. This complexity is the context within which Nike's business operates and sustainability practices must take root.

Nike's understanding of this complex web of systems has led it to call its product sustainability platform "considered" because all these aspects that impinge upon product development need to be taken into account. Because many sustainability challenges in the footwear and apparel industries stem from deep and endemic systemic root causes, Nike has taken the lead in reaching out to its competitors to collaborate on addressing these issues. The company knows that one small part of the system working alone cannot make the industry sustainable.

Starbucks thrives in a coffee industry system dominated by four major players—Procter and Gamble Co., Philip Morris Companies Inc., Sara Lee Corporation, and Nestle—who purchase 40 percent of the world's coffee compared to Starbuck's approximate two percent. Starbucks is part of the specialty coffee portion of the industry—an industry sector that the company helped stimulate through its success. This sector is growing and is becoming increasingly internally competitive, but it is still only a small portion of the entire coffee industry. Although Starbucks represents only a small portion of coffee purchasing in the world, its influence is perceived to be much greater because of its brand strength and the visibility that affords. This perceived influence often means that stakeholders expect that Starbucks is responsible for and can change the way the coffee industry system works.

Coffee is an ancient commodity. If you drink coffee, you are part of a complex system that spans history as well as the globe and that impacts the lives and livelihoods of millions of people. Coffee is the second largest legally traded commodity in the world in export dollars. Oil is the first. The largest exporters of coffee are Brazil, Colombia, Vietnam, Mexico and Indonesia. The largest importer is the United States. Coffee is the most important agricultural export crop for dozens of Third World countries, and it is highly labor intensive. More than 20 million people in more than 50 countries earn their livelihood as

growers in this industry. The majority of coffee—approximately 70 percent—is grown on small farms that are smaller than 13 acres. Coffee production can cause significant environmental damage and the highest quality coffee is often grown in environmentally sensitive areas. Growers on small farms often do not have the knowledge, technology or financial means to grow coffee in the most environmentally beneficial way, nor do they have the incentives to do so.

In this complex system, coffee beans can pass through as many as 15 hands from shrub to cup, and the cost increases which each middleman the commodity goes through. The vast majority of coffee growing households in the world face desperate poverty. Those who benefit the most from this system live in industrialized countries. This means that the coffee production and delivery system of which Starbucks Coffee Company is a part, is deeply embedded in the inequities and imbalances of global market systems.

Starbucks' business model is based on securing high quality *arabica* coffee beans that are often grown in fragile ecosystems. Climate change is predicted to threaten the viability of some of these fragile ecosystems. So not only is Starbucks deeply embedded in an industry system that has evolved over hundreds of years, impacts and is influenced by the economies and politics of countries and regions, and affects the well-being of millions of people, it is also dependent on the health of ecosystems around the world. Coffee is not the only agricultural commodity that Starbucks depends on. The company also sources significant quantities of tea, cocoa, sugar and milk, each of which is embedded in a distinctive set of systems as well, most with global reach.

Internally as with all complex commercial organizations, Starbucks is organized in subsystems that cover the functions of sourcing, marketing, finance, strategy, logistics, roasting, building design and construction, retail operations, and facilities to name a few. It is also embedded in a system of laws and regulations, norms and expectations, as well as a complex system of

communities from which it draws employees, investors, customers and other stakeholders and where its operations and retail locations are situated. Just like Nike, Starbucks is a global company bridging diverse cultures, socio-economic systems, and ecological systems.

Every organization is situated in systems and made up of systems. As a sustainability practitioner it is important for you to know as much as you can about these systems and how they interact. This quest for understanding starts at the outset of the engagement with an organization, and it continues throughout and generally beyond that engagement. This is where beginner's mind plays an important role: to see each organization's systems with fresh eyes so that we can help those within these systems see them as well, to look beyond the habits of mind that can develop when you are part of a system in order to make possible new insights about relationships and dynamics within the organization. We have learned to never assume that those internal to an organization understand and see the systems of which they are a part, the workings of which are often taken-for-granted and therefore out of conscious awareness. In fact, in our experience, most individuals and groups that make up complex organizations do not "see" these systems or consciously experience more than a small portion of the interrelationships in them.

The success and viability of organizations depend upon the health and viability of, and dynamics inherent in, natural systems. As I argued in Chapter 3, the health and viability of natural systems is becoming increasingly impacted by and dependent upon the way in which human organizations operate. Often this interrelationship and interdependence between the organization and the natural systems in which it is embedded is neither recognized nor fully understood by those who participate in the organization's system, and these dynamics and factors are often viewed as exogenous to the success, viability or responsibility of the organization. It is incumbent upon the sustainability

practitioner to think through these connections and to help those s/he works with understand them as well. Mapping the system is one way to do this.

On the other end of the spectrum, activities within an organization generally take place in the subsystems of the organization, often referred to as "silos" as work can proceed within such a subsystem with little or no reference to the other subsystems where other work is being conducted. If as a practitioner you understand as much as possible about how all the parts work together to create emergent properties that are greater than the sum of the parts, you can also help those within the organization to do so. One of the ways that we help those in an organization experience their system is through sustainability workshops[166] that create a "mini-system" in the room by having representation from as many departments, levels, and functions as possible. For example, we ensure that representatives from strategic planning, finance, human resources and the legal departments are part of the workshop although they may not at first understand why they should be part of a sustainability workshop.

By creating a mini-system in the workshop we bring together multiple perspectives on potential sustainability practice. For example, one of the areas that the Starbucks sustainability workshop identified for action was reducing waste in their store operations through increasing recycling. Because many Starbucks retail stores are in leasehold premises the ability to implement a recycling system had to be negotiated with the landlords. This meant that the sustainability practice of increasing recycling in stores rested in part in the legal department that negotiated the leases with landlords.

We design the workshop so that individuals that participate in it have the opportunity to work with people from other parts of the system so that we

[166]The processes and tools referenced in Chapters 4 through 6 are described in greater detail in Chapter 7.

can embed a systems perspective in real time in the room. We teach this microcosm of the organizational system about some of the properties of the biophysical system of the planet and tie that to the work and desired outcomes of the organization as a system. We provide some of the details of the story of un-sustainability, frameworks from the story of sustainability, and stories that demonstrate how these are making sense in other organizations. We constantly and consistently return the workshop dialogue to one simple question: "what does this mean to *this* organization?" For example, in a sustainability workshop we invite participants to think about the story of sustainability by sharing information about some of the environmental and social indicators that tell us that global society is moving in an unsustainable direction. We then invite the participants to dialogue with each other about what these indicators mean to their organization, or their part of the organization's system, and then to share their insights with the whole group. This process provides the opportunity for participants to create meaning together around the story of unsustainability.

We use thinking tools, such as The Natural Step Framework (described in more detail in Chapter 3), to help participants think together in systems. The Natural Step Framework provides four conditions that need to be met for sustainability on a global scale. After introducing participants to the framework, we ask them to work in cross-functional teams to apply this framework to something familiar or held in common. For example, we ask them apply it to their personal experience of their day to that point or to apply it to a product or process that is central to their organization (such as delivering a cup of coffee for Starbucks or designing and producing a pair of running shoes for Nike). In applying this framework to something familiar and relevant to them, participants quickly see we are all embedded in systems that are currently on an unsustainable trajectory. We then often ask them to use the framework to imagine how they would think, design, and act differently. This generates a dialogue about what sustainability means to us individually as

well as what it means to us as actors in an organization. The entire process emphasizes that we operate in systems.

Our initial work with Starbucks provides an example of how this systems-oriented approach can help develop innovative sustainability practices. We engaged a diagonal cross-section of the Starbucks system in a 2.5-day workshop to help the organization understand what sustainability means to the company and where it made the most sense for the company to focus its resources and action around sustainable practice. The workshop participants drew a map of the Starbucks system based on the model developed by Anderson. The map highlighted the connections and relationships among the company's operational systems, pricing and marketing systems, supply chain systems, and the reliance of all of these on healthy ecological systems. The company's strong dependence on agricultural export production in third world countries and its unambiguous identification with coffee, made coffee sourcing an important focus area where Starbucks could have some of the greatest sustainability impact – environmentally and socially.

At the time that we conducted the workshop Starbucks was being pressured by activist stakeholders to increase the sourcing of fair trade coffees. The fair trade movement advocates the payment of a fair price to producers globally, in the case of coffee, to coffee growers. Although Starbucks agreed in principle with the tenets of the fair trade movement and already sourced more fair trade coffee than any other specialty coffee retailer, the fair trade certifying system did not fully meet the needs of Starbucks' system. It focused on fair prices but it did not focus on the high quality coffee Starbucks needed, nor did fair trade coffee at that time focus on the environmental aspects of coffee production. From a systems perspective, Starbucks knew that it needed to address all these aspects of coffee sourcing. The company also knew that it needed to develop a system that was externally verified. No single system existed at that time to satisfy that need.

To address this, Starbucks decided it needed to create its own system, today called C.A.F.E. practices – Coffee and Farmer Equity Practices. Working with Conservation International, a non-profit organization focused on protecting biodiversity around the world, Starbucks developed "responsible" coffee buying guidelines to enable them to better work with farmers "to ensure high-quality coffee and promote equitable relationships with farmers, workers and communities, as well as protect the environment."[167] The company then applied these practices to its entire coffee sourcing system: "to become a C.A.F.E. Practices supplier, coffee farmers, processors, and exporters must meet minimum requirements and demonstrate best practices, which are subject to independent verification under the guidelines. High-scoring suppliers receive preferential buying status, higher prices and better contract terms."[168]

Rather than respond to one factor from one stakeholder perspective, Starbucks applied a systems perspective and decided to take the time and focus its resources on developing a systemic solution. To develop these C.A.F.E. practices Starbucks focused on and called upon practitioners and stakeholders in its entire coffee sourcing system through an open consultative process. Today the guidelines contain 28 specific indicators that fall under five focus areas: product quality, economic accountability (transparency), social responsibility, environmental leadership in coffee growing, and environmental leadership in coffee processing. The system is verified by Scientific Certification Systems (SCS), a third-party certifying body. The guidelines are constantly under review and revised as needed. They are made available publicly. The latest guidelines are available on the SCS website.[169]

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[167]For more information on Starbucks Coffee Company's C.A.F.E. practices, please see the company's website at http://www.starbucks.ca/en-ca/_Social+Responsibility/C.A.F.E.+Practices.htm

[168]For more information on Starbucks Coffee Company's C.A.F.E. practices, please see the company's website at http://www.starbucks.ca/en-ca/_Social+Responsibility/C.A.F.E.+Practices.htm

[169]See the Scientific Certification Systems website for more information: http://www.scscertified.com/csrpurchasing/starbucks.html

Thinking in systems, Starbucks has developed an integrated approach to relationships with coffee farmers that includes paying premium prices to coffee farmers, close to 74 percent greater than commodity prices; providing farmers with access to credit; purchasing certified and conservation coffees; investing in social development programs in coffee growing communities; supporting disaster recovery efforts in growing communities; and instituting and running a farmer support center in Costa Rica that provides technical support and training for farmers to promote high-quality, environmentally sound coffee production for the future. Because it thinks in systems, Starbucks recognizes that the health of the company depends upon the health of the coffee farmers, their families and communities, and the health of the ecosystems in which coffee is grown. The solutions and practices the company puts in place address the system.

Looking at the organization as an open, connected, living, complex system, can be contrasted with looking at it mechanistically, a metaphor that we find is often still prevalent, however unconsciously, when we begin to work with an organization. The distinction is important. As Nadeau (2006) points out, a machine is constructed through assembling its constituent parts, and the interactions between the parts define the function of the whole. "Parts of machines can be separated and reassembled and the machine will run normally. But if we separate a living organism into its component parts, the emergent properties of life vanish."[170] If we separate the organization into its component parts and try to work on sustainability with those parts without reference to the interrelationships and interactions of the system, we can miss important sustainability impacts, vulnerabilities and opportunities. Starbucks recognized that it needed to look at coffee sourcing as an important focus for sustainability. It looked at this from the perspective of what is important to the survival and success of its business as well as where in the systems to which

[170]Nadeau (2006), p. 57.

its business is most integrally connected the company has the greatest sustainability impacts, vulnerabilities, and opportunities. This enabled Starbucks to seek solutions that are systemic—that addressed the quality of the coffee, the quality of life of the farmers, and the protection and strengthening of ecosystems.

Thinking in systems is a vital skill that can be learned, taught, and developed. Because we all live and coordinate our activities in systems it is usually relatively easy to help teams of people see their organization from a systems perspective. In our experience, it is also generally relatively easy for teams of people to understand what sustainability means to their organization when they view it through the lens of a broader map than their day-to-day work invites. This expanded systems view then needs to become more focused once again to enable the action that is sustainability practice.

CHAPTER 6

DIALOGUE WITH PRACTITIONERS ABOUT ENACTING SUSTAINABILITY

> Vision without action is merely a dream. Action without vision just passes the time. Vision with action can change the world.
>
> Joel A. Barker
> The Power of Vision[171]

> Moral excellence comes about as a result of habit. We become just by doing just acts, temperate by doing temperate acts, brave by doing brave acts.
>
> Aristotle[172]

> If you're walking down the right path and you're willing to keep walking, eventually you'll make progress.
>
> Barack Obama[173]

The individuals and teams we work with are action-oriented. They are problem solvers. They have been hired by their organizations and hold the positions they hold because they are good at what they do. In general the majority have been solving problems without considering the sustainability implications of either the problems or their solutions or the possibility that their very actions might be contributing to a potentially unsustainable future. Gergen (1994) reminds us: "A problem stated within a given system of understanding will limit itself to solutions born of that system, and the assertions from alternative systems will remain unrecognized" (p. 253).[174]

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[171]Barker, J. *The Power of Vision*. The quote is available on line at: www.brainyquote.com/quotes/quotes/j/joelabark158200.html. Last accessed on June 1, 2009.
[172]Found on the Wisdomquotes website: http://www.wisdomquotes.com/cat_action.html
[173]Found on the Wisdomquotes website: http://www.wisdomquotes.com/cat_action.html
[174]Gergen (1994), p. 253.

Sustainability is an alternative system of understanding for most people in most organizations. Making the leap from the system of understanding in which most of us were raised to this new system is becoming easier. That said we still find that one of the most common reactions to the story of un-sustainability we tell in our workshops is akin to despair or shock. As sustainability pioneer Paul Hawken described it so aptly: "once you get it, you can't un-get it."[175] As the un-sustainability dots get connected and we see the picture that emerges, it is difficult to "un-see" it, unless we go into a state of denial. Despair and denial can be debilitating. Once the new system of understanding dawns, individuals and teams need to get into action. Once they begin to recognize the problems asserted by the sustainability system of meaning, they are eager to find solutions. If meaning is born of joint action (Gergen, 1994, p. 265), then "sustainability" becomes meaningful as together we coordinate our actions in a way that gives meaning to "sustainability". Action is thus inherently integral to the sense-making process; and sense making is integral to action. To take our cue from Aristotle: we become sustainable by doing sustainable acts. Sustainability practices are the way we enact the meaning of sustainability because this new system of understanding now makes sense to us.

MAPPING REALITY AND TAKING ACTION

Karl Weick (2001), organizational theorist on "sense-making" in organizations, compares "sense making" to the activity of cartography, the science and skill of making maps. When mapmakers want to represent some terrain, they have multiple ways to make that representation. "What they map," Weick (2001) explains, "depends on where they look, how they look,

[175]Personal conversation.

what they want to represent, and their tools for representation" (p. 9).[176] Our maps tell us what requires our attention. What we pay attention to influences what actions we take. The actions we take, performed in alignment with the maps we hold of reality, in turn validate the "rightness" and "reality" of the map.

There is no self-evident or 'one best map' of a terrain. "The terrain is not itself already mapped, such that the job of the sensemaker is to discover this preexisting map" (p. 9).[177] Sense making in our day-to-day lives and in our organizations is the process of converting the broad terrain of our experience and the countless inputs that can arise from that terrain into an intelligible world. An indefinite number of plausible maps can be constructed to create this intelligibility. The terrain we map in our day-to-day lives is not static; it is constantly changing despite our impulse and need to seek coherence and consistency in our experienced world. This means that the task we face, in Weick's (2001) words, is to "carve out some momentary stability in this continuous flow" (p. 9).[178] The way we do this is by attributing meanings to our actions and interactions that explain how and why they fit together and why they should or do make sense.

Our maps of reality are vital for operating effectively in the world. We use them to pick up important cues from our environment. Our maps can prove useful even when they do not match the terrain in which we actually find ourselves. Weick (1995) uses the following story to illustrate this point:

> A small Hungarian detachment was on military maneuvers in the Alps. Their young lieutenant sent a reconnaissance unit out into the icy wilderness just as it began to snow. It snowed

[176]Weick, K. E. (2001), *Making Sense of the Organization*. Malden, Massachusetts: Blackwell Publishing, p. 9.
[177]Weick (2001), p. 9.
[178]Weick (2001), p. 9

> for two days, and the unit did not return. The lieutenant feared that he had dispatched his men to their death, but the third day the unit returned. He asked where they had been and how they found their way. They replied: "Yes, we considered ourselves lost and waited for the end, but then one of us found a map in his pocket. That calmed us down. We pitched camp; lasted out the snowstorm; and then with the map we found our bearings. And here we are." The lieutenant took a good look at the map and discovered, to his astonishment, that it was a map of the Pyrenees, not the Alps (adapted from Weick, 1995, p. 54).[179]

When we are disoriented, we turn to our maps for cues to get our bearings. In the case of the lost reconnaissance unit, this tactic worked even though there was no real match between the map and the terrain. However, relying on an inaccurate map too exactly could have resulted in a very different outcome for the lost reconnaissance unit. A map of a totally different terrain, such as a desert instead of a mountain terrain, would have made no sense at all and likely have been of little use for picking up orienting cues.

On the one hand the terrain of experience of early 21st Century organizations, particularly business organizations, remains unchanged and familiar. Modern business institutions, including Nike and Starbucks, were established within the contours of this map expressed succinctly in Milton Friedman's dictate for business: "[t]here is one and only one social responsibility of business – to use its resources and engage in activities designed to increase its profits … so long as it stays within the rules of the

[179]Adapted from Weick, K. E. (1995). *Sensemaking in Organizations,* Thousand Oaks, California: Sage Publications, p. 54.

game" (p. 122).[180] When using this map, business responsibility with respect to social and environmental concerns can be summed up fairly easily: comply with the law and stay out of jail. The measure of success and the language of business are identical: grow and increase your profits as quickly and as much as you can. Actions that align with growth and profitability make sense. Actions that are explained or justified in alignment with growth and profitability are intelligible.

On the other hand, the terrain of our experience is changing in significant ways. Throughout the history of our species human systems have been a small force when compared to the bio-geo-chemical life supporting systems of the planet. We were technologically limited and limited by virtue of our numbers from doing large-scale damage to the planet's ecosystems. This story of reality has endured for as long as we have existed as a species. That has changed, and this change in our experience requires new maps to guide how we act. When I refer to "we," here, I refer primarily to late 20th and early 21st Century industrial society. I realize that there are still local social groups that know they live in an intimate relationship with the non-human systems that bound and support their lives. Nonetheless, modern industrial society—and those human communities that are or aspire to be part of it—represents that segment of humanity that now has the greatest potential to inflict severe, even irreparable, damage on the life supporting systems upon which we all depend.

Another way in which the terrain of our experience has changed in significant ways is the degree of global interdependence and interconnectedness we experience today. The business decisions made in Beaverton, Oregon; Seattle, Washington; Greensboro, North Carolina or Chicago, Illinois impact the lives of people living in China, Bangladesh, the

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[180]Friedman, Milton. "The Social Responsibility of Business Is to Increase Its Profits," *The New York Times Magazine*, 13 September 1970: 32-33, 122-126.

Amazon, Viet Nam, Nicaragua, the Sudan, etc.; they impact local and national economies; and they impact local, regional, and global ecosystems. The economic development, business and policy decisions, and the way that goods are produced in other countries impact the economic and environmental well being of those in the industrialized countries oceans away. We are connected globally through communication and information technology in ways that only two or three decades ago would have been considered science fiction. Our global financial markets and trade relations are so interwoven that addressing our most recent financial crises requires action and collaboration among nations.

We are integrally interconnected. When I say "we," *here*, I refer to everyone—the fate of every human, and every non-human species is interconnected. We have always been interconnected because we all share this one planet. What has changed in the terrain of our experience is the extent to which, and speed with which, actions in one part of the planet impact other parts of the planet, and the degree to which we are becoming directly aware of this dynamic. Our lived experience is beginning to tell us that our current maps no longer provide a sufficiently useful match. "What if," Starbucks asks, "we are not separated from everyone else, but connected? What if, what we do to another, we do to ourselves? What if, part of our purpose here is not 'me,' but 'we?'"[181] How do we proceed if our old maps just don't work as well any more? If the new map is not self-evident, how do chart the course of our actions in the new terrain of our experience?

NEGOTIATING MEANING AND TAKING ACTION

The meaning we attribute to any action, like the map we use to make sense of the terrain, is also seldom self-evident. Our actions take place within

[181]The Starbucks Red campaign video can be found on YouTube at: http://www.youtube.com/watch?v=kkC5qYH0ln0

a context that is infinitely expandable into the past and the future and filled with uncertainties. As a result in times when our maps are changing it is often unclear which contextual signals we can trust or which cues from our environment are most significant. Determining which contextual signals and environmental cues are meaningful in the situations we experience is an issue that we generally must negotiate with others who share that context. "And whatever agreement people hammer out usually unravels as new events occur and old meanings crumble"(Weick, 2001, p. 10).[182] When this unraveling goes to the core of deeply held beliefs and assumptions about how the world works, we experience what Gergen (1994) describes as "an evolution in socially negotiated forms of meaning" (p. 14).[183] We can see the process of evolving socially negotiated forms of meaning in all of the organizations I cite in this study. Here I briefly summarize the experiences of three organizations: Nike, Starbucks, and the U.S. Army as they socially negotiate new forms of meaning around sustainability.

NIKE'S Experience

Nike's experience provides a good case example of negotiating with others what sustainability means to a business organization; particularly how that meaning is put into practice through action and how these actions reinforce the new forms of meaning. In the late 1990s, Nike found itself in territory for which its map was inadequate. Its success had been built on Phil Knight's innovative idea to design and deliver high-performance product in the United States—the world's biggest and most affluent market—and to manufacture that product in countries that had low-cost labor. Products made at reduced costs and sold in markets that could afford to pay high prices for perceived value equals profitability. Profitability was a mainstay of the well-established business map of reality. During the 80s and 90s Nike's growth was explosive and so were its profits.

[182]Weick (2001), p. 10.
[183]Gergen (1994), p. 14.

The known map worked: and not only for Nike. This very model became a solid basis for the business success of numerous companies in the U.S. and Europe. Then in the late 1990's Nike was attacked for the very inequities that made this model successful and the company profitable—some low cost manufacturers in third world countries treated workers in ways that many U.S. consumers found offensive if not downright deplorable. To its credit, the company stepped back and asked what else was happening in the wider terrain of its experience that was not part of its previously reliable map, and this led to Nike's actions on sustainability.

Gergen (1994, p. 49) points out that there is really no *inherent* constraint governing how we characterize the events in our experience, how we convert the terrain of our experience into an intelligible world.[184] The way that we account for the world and ourselves is not dictated by the specific elements or occurrences that make up the stories we use. What does constrain the way we account for the world and ourselves are the terms and forms we use to tell our stories. These terms and forms are social artifacts; they are "products of historically and culturally situated interchanges among people" (p. 49).[185] We cannot make sense together if the terms and forms we use to do so are unintelligible to each other. Intelligibility depends upon developing shared terms, meanings and understandings. The terms we use "take on their meaning only within the context of ongoing relationships" (p. 49).[186] The ongoing relationships in conventional business discourse involve growth and profit.

The Shambhala initiative at Nike can be seen as an early attempt to draw a new map of the terrain. In the attempt to bring a totally new

[184]Gergen (1994), p. 49
[185]Gergen (1994). p. 49
[186]Gergen (1994), p. 49

perspective, however, intelligibility was lost. The map did not make sense to those in the business unless they were directly involved in creating it, that is, unless they were one of the employees who was engaged in the initiative. Severn, now Director of Corporate Responsibility Horizons a future looking function in the business, was the head of the Nike Environmental Action Team that created the Shambhala initiative. Looking back at her experience with the Shambhala process, Severn shared that one of the things that she learned is the need to communicate using the language with which the organization is familiar. The language to talk about sustainability in those early years was predominantly academic; there was very little business experience and practice to call upon. Even more importantly, Severn told us, when you bring in experts from outside your organization you need to find ones that challenge people's perceptions of current reality and stimulate real learning by helping to expose blind spots. But you also need to be sure that they will not totally jar the culture of the organization. External experts also need to be intelligible within the organization. If the messenger not only turns people's worldview on its head, which is common when organizations first engage in sustainability thinking, but they also come across as alien and unintelligible to the organizational culture, there is a good chance that not only will the message and the messenger be rejected, the person who brought that expert in may find her credibility questioned or severely damaged.

One of the ways to evolve socially negotiated forms of meanings in an organization is through an education and awareness program. For this reason, every organization with which we work identifies education and awareness as a strategic focus area to move sustainability forward. Setting up such a program was one of the first actions that Nike took. Although Nike's approach had some drawbacks that were discussed previously, the program did result in a network of individuals across the company who shared a common experience. As a result of this shared experience this network began to develop a common

language—a common set of terms and forms—through which to coordinate action and thus give meaning to sustainability at Nike.

Because the initial effort engaged individuals from across Nike's system, it enabled an important opportunity to develop projects that would help define and test what sustainability meant in those diverse areas. For example, Dave Newman who worked in the Logistics Division began to look at the movement of Nike's goods globally through a sustainability lens. He began to track the logistical carbon footprint long before organizations recognized the importance of doing so. Newman's goal was to understand the company's use of fossil fuels in its logistical operations and to find ways to reduce that use while saving the company money in the process. At the time of the initial education and awareness program, Newman was a claims manager in the logistics function. His participation in the early initiative affected him personally, Newman reported: "it allowed me to bring a passion into my work, permission to think differently, or ask better questions on current processes." He told us that for him the impact was "life-changing."

Every time we went to the Nike campus, which in some periods was as frequent as every few weeks, we would meet Dave for coffee, and he would excitedly share with us a new insight, new calculations, and ways that he was finding to reduce the company's carbon footprint in his work. He was finding ways to enact sustainability and to communicate what that action meant in terms that were intelligible within the company. He was also finding ways to explain how saving money through these actions was also making a positive contribution to a more sustainable world. In doing this Newman added new detail to Nike's map of reality.

Newman's work began to influence companies beyond Nike. Nike was a founding member of the *Clean Carbon Group,* a group made up of companies and the non-governmental organization, Business for Social Responsibility. This

group began to collaborate on how to organize ocean transport to reduce the number of empty containers in transit, a strategy that would reduce ocean transport fossil fuel use and carbon emissions. It became clear to Newman and others that one company alone could not significantly influence the shipping transport systems on which most companies sourcing overseas relied: collaboration was needed. Together companies had greater power to negotiate new terms with the shipping companies. "Sustainability," Severn comments, "is a team sport." Companies, even competitors, need to collaborate if we are going to bring about the change that is needed to make the world more sustainable. This perspective was another very new detail on the map of reality for Nike, a company that was born out of and thrives on competition.

Based on his work and passion for sustainability, Newman became the head of Nike's Global Sustainable Logistics, a new position that emerged as socially negotiated forms of meaning evolved within the company. In that position he coordinated Nike's global inbound logistics carbon emissions footprint, an action that had never been done before. Today he is Nike's Manager of Global Climate and Energy focusing on sustainability initiatives in the global supply chain. These new positions are new forms that organize new actions that Nike did not previously include as part of its business activity. They are sustainability practices and they are business practices. A new map of reality is emerging.

Today Nike has totally transformed and evolved how it frames, defines, and approaches sustainability and its business. The company did not reject the old map and substitute a new one; it redrew its map to include new perspectives that help make sense out of its new experiences of reality. Actors within the company, ultimately including its top leaders, engaged in a process of socially negotiating the new forms of meaning. Nike is still in business to make a profit, but it sees its purpose as larger than that. Mark Parker, Nike's CEO, explains:

We saw heightened attention worldwide on corporate responsibility and the key challenges of climate change, poverty and equity. Simultaneously, we began to transform our vision of Nike's role in contributing to positive change in communities around the world.

The opportunity is greater than ever for corporate responsibility principles and practices to deliver business returns and become a driver of growth, to build deeper consumer and community connections, and to create positive social and environmental impact in the world…corporate responsibility at Nike has grown beyond its role as a tool to define, discover and address compliance issues, or to manage risk and reputation. Today, corporate responsibility no longer exists on the periphery as a check on our business, but is assuming its rightful role as a source of innovation within our business. Corporate responsibility is no longer a staff function at Nike. It's a design function, a sourcing function, a consumer experience function, part of how we operate.

Our company is complex. We have multiple brands, categories and product types. Our supply chain builds and delivers more than 50,000 different product types per year. Our footprint impacts millions of people directly and indirectly each year. Our operations touch thousands of smaller businesses within multiple industries, all part of an established global trading system dependent on a host of other partners, and all governed by the framework of a publicly traded company. This complexity will only increase as we grow toward our projected $23 billion in revenue by FY11.

> To meet these challenges, *we will leverage our business model, our products, our natural strengths and our voice to be a vehicle for change*. We believe that design and innovation can deliver the most valuable solutions. We believe that entrepreneurship is the best source for sustainable solutions (emphasis added).[187]

This is a much expanded and evolved map for Nike. It empowers those who constitute the system to take action in alignment not only with the intelligibility of growth and profit, but also with the intelligibility of using the company's strengths to create positive social and environmental impacts in the world. The terms and forms we use matter. The actions we take to make those terms and forms real matter. By taking action, the validity of the map is confirmed and reinforced. Multiple actions from all over Nike's system, like Newman's actions, are what helped make sustainability concrete. As the stories of these actions were told internally and externally, others were empowered to take actions as well until these actions went from being exceptional to being expected, from being unintelligible to being intelligible.

Nike continues its sustainability leadership. This attribute is now part of the company's story. In 2007 I had the opportunity to conduct confidential interviews with 23 of Nike's top leaders about their hopes and fears for the company's future. I asked, in particular, what story they saw for the company's future: what were their hopes for the company. Every leader expressed the hope that Nike would grow and become more profitable, which was no surprise. This is still an important part of the known map of reality for business. However, they insisted, that growth needs to be combined with

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[187]*Innovate for a Better World (2007)* Nike Corporate Responsibility Report 2005/06., Lettter from Mark Parker, available on-line at: http://www.nike.com/nikebiz/nikeresponsibility/#crreport/letter_from_mark

responsibility: the company needs to "do the right thing," "operate in ways that support social and environmental sustainability," "grow by considering and taking responsibility for our impacts," "succeed by offering innovative high-performance product *and* making a positive difference in the world." These points of view indicate that Nike has successfully negotiated new forms of meaning about sustainability in a corporate context and that this meaning is attached in the minds of the company's leaders to specific actions that are important to the business.

As forms of meaning are negotiated within a social system actors in that system are empowered to pay attention to different cues from the environment and to act in accordance with those signals. Sustainability in Nike's context means that it is not only possible, but also ultimately required, for Nike designers to consider the environmental and social impacts of the products they design in addition to the innovation, performance and price characteristics of those products. It spurs those who work in Nike's supply chain operations to look at ways the company can really make a difference when it comes to the treatment of workers in factories that do not even belong to Nike but in which their products are made. It stimulates leadership actions in arenas that were outside the scope of the company's old map, for example in advocating for strong climate change.

Nike began paying attention to new cues from the environment when it was broadsided with criticism about labor practices. It became one of the most reviled companies in the world. Today Nike consistently shows up as one of the most admired companies and best corporate citizens in the world. This did not happen overnight; it took work. It took experimentation. It took putting ideas into action through pilot projects, evaluating results, taking new steps, and working consistently to understand what integrating the sustainability story into Nike's story meant in every facet of the company's business.

How did the sustainability practitioners in Nike achieve this? They learned from their mistakes, they did not give up, and they negotiated the meaning of sustainability with others in the organization. Severn points out that they found "well-respected allies in the organization" who could see the benefits of sustainability to the company and who were able to add value and credibility to the message. "If you work in a corporate setting," Severn cautions, "make sure you collaborate with leaders in the business who can help you translate the benefits and bring business credibility to what you are trying to achieve." Darcy Winslow, one of the company's senior leaders before she retired in 2008, reminds us that sometimes you need to work under the radar and work with groups that you think can make things happen. Winslow was one of the leaders within the company that worked to help translate sustainability into action. She reflects: "You have to be very comfortable with taking risks and being looked at cross-eyed and really believing that what you're doing is right. Don't rely on yourself or a small team. Go out and find other leaders in the organization. Look for leaders in untraditional places. One of the keys to success is finding others who can help bring some of the messages or ideas to life."[188] This approach echoes Gergen's (1994) assertion that terms and forms acquire meaning when an "other" or others coordinate themselves to these terms and forms. An "other" is "required to supplement the action and thus give it a function within the relationship" (p. 265).

STARBUCKS' Experience

From the outset under Howard Schultz, the Starbucks map of reality has included an expanded sense of corporate responsibility. The Starbucks map

[188]Nattrass, B. and Altomare, M. (2002) *Dancing with the Tiger*, Gabriola Island: New Society Publishers. I interviewed Winslow and others from Nike for our book *Dancing wih the Tiger*. In these interviews many of the people who were involved in the Shambhala Initiative and who were instrumental in helping the company evolve its map of reality share their insights. See particularly insights shared on pp. 91-97.

proposed to go beyond the conventional map of business by philosophically putting people before profits in its statements of value. The company also made early commitments to environmental responsibility. Sue Mecklenburg, Starbucks' first director of Environmental Affairs, and now Vice President of Sustainable Procurement Practices explains that this commitment certainly made her job easier from the outset. An understanding existed in the company that the health of the environment was important to the health of their business. That said, Mecklenburg points out, you still need to make your case in business terms and show results.

Despite this commitment, similar to Nike, Starbucks was beginning to become a target for activist criticism about what was wrong in the coffee industry system in the early 2000's. Ben Packard, now Vice President of Global Sustainability was then the company's Environmental Manager. Despite what was then a relatively progressive attitude about the environmental responsibilities of business, it was clear to Ben that a shared understanding did not exist of the company's environmental impact and thus the extent or form its responsibility should take. The organization was ready and willing to engage in the conversation, but the terms and forms to do so had not yet been negotiated. Before conversations could be carried out with external parties about the company's activities, it was vital to ensure the company's intentions, vision, actions, and terms were aligned.

Packard was and is passionate about sustainability. He also has a native intelligence about the how to move new ideas into a culture. Packard comments that before a sustainability practitioner starts talking about sustainability, you first have to ask some fundamental questions: "'What is your company's mission statement?' 'What business are you in and who are you as a company?' Don't even bother wasting your time trying to implement sustainability until you ask the owner and the leaders of the company those

questions."[189] Meaning and actions arise and are perpetuated through relationships. Packard reflects: "At the end of the day, it is about the quality of your relationships with people, and that applies whether you're talking to an internal purchasing agent, an activist or a student. Nothing is sustainable if the personal relationships aren't there." As a practitioner Packard tells us, you need to take time to understand what matters to the other person, what motivates them, what gets them into and supports action. "For example, on the environmental footprint team, there are twenty different motivations for why people are there. My role was to understand who the champions were going to be in the company and what motivates them."[190] In other words, Packard saw that he needed to understand what terms and forms were already meaningful to those in the system with whom he would need to negotiate new or expanded forms of meaning. Some terms and forms he needed to understand were obvious: "You need to be relevant to the business. That means you need to understand what's going on in the business." Packard made it his business as a practitioner to pay attention to and understand the cues that were important in the existing Starbucks map.

Packard worked systematically across departments, often tirelessly and under the radar, through workshops, presentations, pilot projects and countless conversations that engaged others within the company in a dialogue about sustainability. This sustainability education and awareness always included references to the relevance of sustainability to the business. Education was always linked to action. The initial sustainability workshops in 2000 created focus areas that were easily understood in the company: sourcing practices; store design and operations; and resource consumption, particularly energy and water, areas of significant cost to any business. Cross-functional teams were developed for each focus area and these teams got into action. These teams

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[189]See insights shared from Starbucks leaders in Nattrass and Altomare (2002),pp. 134-137.
[190]Nattrass and Altomare (2002), p. 137.

then created specific projects, such as the one that resulted in the development of the C.A.F.E. Practices described earlier in this paper. When the stories of these actions and projects were shared, it was always in reference to the value returned to the company.

As with Nike, Starbucks did not replace its map with a totally new map, it integrated new perspectives that transformed an already successful map into one that provided much richer detail. Unlike Nike, environmental and social responsibility already had places on the map, they were already meaningful terms, and they already had specific actions and practices associated with them. Packard's genius was to help grow these seeds of meaning into one of the company's core corporate values. He did this at first by consistently reinforcing the contribution sustainability actions made to the company's business success. Now the conversation includes emphasizing how the company's business success provides a platform to make a difference in the world by making it more sustainable: to be a different kind of company as Howard Schultz promised it would be.

In less than a decade sustainability has moved from a few points on the company's map to a quality that defines that map. The terms and forms are no longer new; they are part of the internally shared and accepted description of the company's reality, integral to the company's identity. Now Starbucks is inviting its customers to expand their maps and adopt new forms and meanings through its new branding of its corporate responsibility efforts called *Shared Planet*. Explaining what it means, Starbucks says: "It's our commitment to do things that are good to each other and the planet. From the way we buy our coffee, to minimizing our environmental footprint, to being involved in local communities. It's doing things the way we always have. And it's using our size for good. And because you support us, Starbucks™ Shared Planet™ is what you

are a part of too."[191] To carry out this wider conversation and negotiation of new forms of meanings, Starbucks is "embarking on a long-term, story telling campaign focused on the quality, value and our values. The campaign will build over time, and take advantage of multiple channels, both traditional and non-traditional, supporting all of the distribution points in our business. It will also be a validation for our customers – and our partners – of what Starbucks is all about and what we stand for."[192]

The path by which I found the description of this new campaign provides some insight into how Starbucks is negotiating new forms of meaning on a wider societal scale. The campaign was announced on a Starbucks blog that I discovered when I undertook a search to find criticisms of the Starbucks Shared Planet approach. That search took me to another blog where on May 15, 2009, blogger, Guy Lecharles Gonzalez, posted the following:

> One of the great things about "social media" is the ability to engage in conversations with a variety of people, anywhere in the world, on pretty much any topic of interest, no matter how obscure or inane. Thanks to forums, blogs and Facebook, I've connected with poets, writers, comic book fans and creators, and re-connected with friends and family, past and present, most of whom I don't get to see nearly as often as I used to. My.BarackObama.com pulled me deeper into a political campaign than I'd ever been.
>
> I got into an unexpected conversation with Starbucks last week, first on Twitter and then on the telephone as they reached out offering to have a more in-depth discussion about my concerns

[191]Starbucks, *Shared Planet*, http://www.starbucks.com/sharedplanet/.
[192]http://blogs.starbucks.com/blogs/customer/archive/2009/04/30/sneak-peek-at-new-ad-campaign.aspx

> regarding what I perceived as a less-than-enthusiastic embrace of Fair Trade coffee, cynically accusing them of typical PR spin.
>
> Impressed by the offer to engage, and curious how it would play out, I agreed and on Tuesday evening had a great phone call with Dennis Macray, Director of Ethical Sourcing, with thanks to Brad Nelson, Associate Product Manager, Online Strategy for making the connection…
>
> Macray struck me as incredibly sincere — not at all the PR flack I was expecting — someone who truly believes in what he's doing and has a passion for it. He patiently filled me in on Starbucks' Shared Planet initiative and Ethical Sourcing policy, two things that are too-subtly hinted at in their new branding campaign — "It's Not Just Coffee. It's Starbucks." — but that should really be at the core of the story they're trying to tell.
>
> By the end of the conversation, I was fully convinced of Starbucks' seriousness about social responsibility, and while there is always room to improve, I officially lifted my personal quasi-boycott of them yesterday afternoon and bought a grande Caffè Americano![193]

Gonzalez's blog contained a link to the Starbucks blog where Starbucks customers, fans, and critics can engage in social networking conversations. The Starbucks "it's bigger than coffee," Shared Planet conversation invites others "to coordinate themselves around the offering" (Gergen, 1994, p. 265) and engage in the evolution of new forms of meaning around Starbucks, sustainability, and corporate responsibility.

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[193]Available at: http://loudpoet.com/2009/05/15/starbucks-i-done-you-wrong-smwin/. Last accessed on June 2, 2009.

From the outset, new terms and forms of meaning about sustainability were linked to action at Starbucks through the diligent work of internal and external sustainability practitioners. The congruity of those terms and forms of meaning with the existing Starbucks story and map of reality made implementing those actions easier. As actions reinforced and validated the focus on corporate responsibility as a core corporate value, an increasing number of individuals and departments within the company coordinated themselves around the offering. Now the act of socially negotiating new forms of meaning is being extended infinitely outward.

THE U.S. ARMY'S Experience

The Army sustainability story provides another good case example of the process of socially negotiating new forms of meaning in one of the world's largest institutions. When Messenger set out to make sense of how the Army would implement the integrated environmental strategy on installations that the SELC mandated, she set out to see what other maps already existed to orient the army in this new terrain. She was introduced to a new system of understanding called sustainability at the Marine Corps Base, Camp Lejeune. She saw the map that corporate leaders, including Ray Anderson of Interface, were beginning to use to orient their organizations in this new terrain. Messenger came back with the impression that business already had the maps. She set out to study those maps through the book club she established with the installation sustainability personnel, and to work with some of the mapmakers to determine whether and how the Army could adopt them for its purposes.

Just as growth and profitability are the terms and forms that are intelligible in the business map of reality, the "mission" is the locus of meaning in the Army. The mission is also a genesis and rationale for action. Army installations are critical to achieving the Army mission. They are the Army's

home where soldiers live and train, where their families live, and where key support functions and activities take place to ensure "unit readiness in an era of persistent conflict."[194] Army installations are like small—and some not so small—cities. They are the infrastructure for Army operations responsible not only for the effective training of soldiers, but also for the quality of life for military families.

As mentioned previously, Messenger came upon the sustainability map before the tragic events of September 11, 2001. The mission of the Army became all the more focused and urgent as unit readiness sharpened into deployment for war. In this environment "nice, but unproven" ideas were a luxury that had no place on the installations. Every initiative had to be actionable in support of achieving the mission. Without that action and its connection to the mission, there was no intelligibility.

As described in Chapter 5, Fort Bragg was the first Army installation to accept Messenger's invitation to make sense of this new system of understanding. Fort Bragg is known as the "Home of the Airborne and Special Operations Forces" the XVIII Airborne Corps and the 82nd Airborne Division, the US Army Special Operations Command, and the US Army Parachute Team (the Golden Knights). The Installation's mission is to "maintain the XVIII Airborne Corps as a strategic crisis response force, manned and trained to deploy rapidly by air, sea and land anywhere in the world, prepared to fight upon arrival and win."[195] Sustainability conversations had to be conducted in relationship to how actions that arose from those conversations supported these operations.

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[194]For more information on the vision and mission of Army installations, see the Intallation Management Command (IMCOM) website: http://www.imcom.army.mil/site/about/mission.asp

[195]For more information on Fort Bragg, see its website: http://www.bragg.army.mil/18ABN/

Wirt, the Environmental Chief at Fort Bragg, understood the challenges of war. He had been an active duty soldier during Desert Storm when he sustained an injury that saved the life of a fellow soldier, but meant that he could no longer serve in that combat capacity. He was new to his position as Environmental Chief. He knew the needs of Soldiers to train; he also knew that Fort Bragg had one of the worst reputations within the Army installation system for environmental violations. As an incoming Garrison Commander, COL Davis was intent on addressing and fixing the poor environmental record. Both are men of action and were career Army. One of the first actions Wirt took was to go out and talk with those individuals who headed up key operational functions and training functions on the installation to begin the conversation about how sustainability practices could support them in carrying out their jobs. These were the individuals to whom this sustainability map needed to make sense if the idea was to get any traction. Wirt needed to be fluent in both languages: the language of sustainability and the language of the Installation's mission. These conversations helped Wirt begin to formulate what a long-term sustainability strategic planning approach could mean with respect to supporting unit readiness. To even get a decent hearing with those tasked with key functions at the Garrison, Wirt had to sharpen his ideas and his language to make this new approach intelligible.

When Fort Bragg brought together a microcosm of its system to do long-range strategic planning with a sustainability lens, it set out aggressive 25-year goals. Twenty-five years from now, Wirt explains, he hopes that Fort Bragg will continue to train and be the home for "the best soldiers in the world." But, he cautions: hope is not a plan. Immediately upon setting "big hairy audacious goals," the installation got into action in a program that translated those goals into measurable objectives. Cross-garrison, and cross-functional teams were put in place to determine what actions needed to be achieved. Each of these teams set interim objectives and developed specific action plans to achieve them. For example, one of the key sustainability challenges Fort

Bragg faces is a stressed water supply. The Installation is located in the Sandhills area of North Carolina, an area that has been experiencing extended drought. The Installation set out three major goals around water and action teams set out objectives to develop better practices. For example, Goals 1 and 2 focused on better management of water resources and instituted the following specific objectives each with clear action pathways:

1. Develop and Implement a comprehensive water resources management program (quality and quantity);
2. Design/upgrade facilities to protect and enhance water quality and quantity;
3. Develop and implement a water education program;
4. Reduce Potable Water Use/Waste; and
5. Perform Opportunity Assessments to identify projects that conserve water resources (quality and quantity) through conservation, reuse, and reclamation.

All of these actions are measurable and they can be tied back to supporting the mission of the Installation, and the greater Army mission. As action was taken, performance was measured and improved, and objectives began to be successfully met, the results validated the whole sustainability approach.

At this point, one might ask: couldn't these actions have been achieved with the old map? If the region is in drought, and water is necessary to achieve the mission, couldn't the Army command structure mandate actions to reduce water use, which in turn, would validate the intelligibility of a different map? What distinguishes the sustainability story and the map that emerges from this intelligibility?

The Environmental Division that Wirt heads up was previously focused on compliance with environmental regulations. This is a narrowly defined map: Know the regulations. Ensure to the best of your ability that the installation remains in compliance with them. Take corrective action in the event of violations. You perform a reactive, and at times, a policing function. The objectives that emerged from a systems-based sustainability perspective take action far beyond compliance to proactively looking for specific ways that the Installation's systems can be better designed and organized, and actions put in place, for the most effective use of precious life and mission sustaining resources. As Steuke, at Fort Lewis puts it, his job now is no longer about "obeying the law and staying out of jail," it is about something bigger, better, and more systemic than that. The new terms and forms of meaning called for a proactive approach to environmental challenges and solutions, and this approach was associated with making the Army stronger and more effective.

As each action and the measurement of the success resulting from that action made Fort Bragg a stronger, more resource efficient and resource effective Garrison, sustainability became more intelligible. It began to make sense. Since it began making sense of sustainability in the Army context, Fort Bragg has gone from having one of the worst environmental reputations in the Army to winning awards for its sustainability work. Most recently, in 2008, Fort Bragg won two prestigious awards: the 2008 White House Closing the Circle Award for its exemplary work with sustainable design; and the first ever Secretary of the Army Sustainability Award that recognizes outstanding sustainability initiatives by Army installations/activities and individuals. "These initiatives" the Army press release declares, "enable the Army to meet current and future needs while improving its ability to organize, equip, train and deploy Soldiers." Through action, sustainability becomes intelligible. The language of the press release illustrates the terms and forms of this intelligibility:

Mr. Tad Davis, Deputy Assistant Secretary of the Army for Environment, Safety and Occupational Health, noted that many of our Soldiers, Civilians and contractors routinely accomplish sustainability successes worthy of recognition. "From our installations to our forward operating bases, the Army is working to establish sustainability as a long-range vision that enables the Army to meet its mission today and into the future," Davis said.

Fort Bragg received the award for installation/activity. The North Carolina post piloted the first installation sustainability program for the Army…Over the next four years, Sustainable Fort Bragg served as the blueprint for The Army Strategy for the Environment, setting the benchmark for the Army's sustainability values. The strategic planning process at Fort Bragg is the starting point for fostering an installation-wide Army sustainability ethic.

Mr. Paul Wirt, Chief of the Environmental Management Branch at Fort Bragg, received the award for individuals. Mr. Wirt was one of the original participants in the earliest Army discussions on how to incorporate the principles of sustainability at military installations and volunteered Fort Bragg to be the pilot installation for the new initiative. He was also a key contributor to the Army Strategy for the Environment.

"Soldiers must have the land, water, air, and energy resources they need to train, a healthy environment in which to live, and the support of local communities and the American people," said Davis. "We are building green, buying green, and going green to advance the triple bottom line plus of Army

> sustainability: Mission, Environment, and Community, plus cost savings, innovation and collaborative solutions."
>
> Nominations were evaluated against five criteria: fosters a sustainability ethic; leverages partnerships; strengthens Army operations and minimizes impacts and total ownership costs; drives innovation; and potential Army-wide applicability.[196]

In less than a decade sustainability has gone from a term that even those in the Environmental departments of the Army did not use or understand to one that has become an organizing principle for action. Through the tireless and consistent work of Army sustainability practitioners—soldiers and civilians—sustainability has become a form of meaning that is embedded in the Army Posture Statement, the Army Game Plan, and is currently being integrated into the Army Campaign Plan: all key documents that outline what is important to the Army and how it operates. Tad Davis (2009), Deputy Assistant Secretary of the Army for Environment, Safety and Occupational Health, captures the extent and depth to which the Army is operating with an expanded map around sustainability in "Beyond 'An Inconvenient Truth': The Army's March Toward Operational Sustainability":

> Sustainability is now a globally accepted approach to maintaining economic growth while avoiding harm to our planet or exhaustion of its resources and improving the quality of life for its current and future inhabitants. Practicing sustainability makes good business sense for the private sector—and good operational sense for the Army… From the beginning, Army sustainability has proven to be an extremely useful organizing principle that ensures continued access to

[196]"Fort Bragg receives first Secretary of the Army Sustainability Award," Available on line at: http://www.p2pays.org/esi/News/FtBragg.pdf

> training lands, availability of materiel, and provision of facilities and services, all of which are necessary to provide trained and ready forces for the Army mission and to support future needs…
>
> Army sustainability is a critical organizing principle that forms the basis of our future. In December 2008, senior uniformed Army leadership set forth the challenge to operationalize sustainability...to integrate sustainability into the very DNA of the Army.
>
> The Army is certainly on the move and in many respects is leading the way for others within the federal government. By building green, buying green and going green, the Army is already making a tremendous difference…If fully appreciated and applied, operational sustainability will surely move us even further down the road toward preserving our fragile ecosystem and will significantly assist in preserving the planet for future generations of Americans.[197]

Pay attention, Thomas Friedman (2007) tells us in the *New York Times Magazine*, "When the U.S. Army desegregated, the country really desegregated; when the Army goes green, the country could really go green."[198]

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[197]Davis, A., (2009). "Beyond 'An Inconvenient Truth': The Army's March Toward Operational Sustainability". *Army Magazine*. April 2009, Volume 59, Number 4. Available on line at: http://www.ausa.org/publications/armymagazine/armyarchive/april2009/Pages/default.aspx. Last accessed on June 2, 2009.

[198]Friedman, T. L. (2007). "The Power of Green," The *New York Times Magazine*. Available at: http://www.nytimes.com/2007/04/15/magazine/15green.t.html?pagewanted=all. Last accessed on June 2, 2009.

ACT SUSTAINABLE TO BECOME SUSTAINABLE

"In matters of sensemaking," Weick (1995) tells us, "believing is seeing. To believe is to notice selectively. And to believe is to initiate actions capable of lending substance to the belief" (p. 133).[199] We pay attention to the cues that are consistent with the maps of what we believe. We act on what we believe and in doing so validate the belief we hold. The validation of the belief reinforces the significance of the signals we pay attention to and justifies the belief *and* the actions we take in line with it. Our "reality" becomes an ongoing achievement that takes form as we make retrospective and prospective sense of the actions we take, the things we create, and the situations in which we find ourselves.

The cycle of alternating between the particulars of our experience and explanations and meaning we attribute to them builds confidence in the new story as the particulars begin to fit together and as our explanations allow increasingly accurate guidance for further decisions and actions. We renegotiate our shared understanding of how the world works, what constitutes problems and solutions, what is relevant and significant to us, what cues to pay attention to, and how to connect our beliefs and actions.

We make sense by seeing a world on which we have already imposed the map of what we believe about the world; we act in accordance with that map; and in doing so we begin to believe that the map *is* the territory, that our story *is* reality. We forget that, much like the mapmaker, we see the world as a function of where we look, how we look, what we want to—or believe we can or should—see, and what tools and measurements we use: all of which are influenced by previous socially negotiated forms of meaning.

[199]Weick (1995), p. 133.

Even the most insightful ideas remain in the realm of conjecture unless they are made real through action. This is particularly true in the concrete world of business and the military. Growth and profit are tangible results from actions we take. They are tangible because we can measure the difference that our decisions and actions make against baselines and goals, and we can communicate this difference in a language that is commonly shared and intelligible across the organization. This shared intelligibility has evolved over more than a century of modern industrial and commercial development. The language to demonstrate the difference that our decisions and actions make in sustainability is just now being developed and it thus feels less tangible and concrete, less real and meaningful. This means that the intelligibility of sustainability actions needs to be translated into the terms and forms that make sense to business, or in the case of the Army, that make sense in terms of the mission.

This process is a particular challenge because on the one hand, we want to challenge the "business as usual" assumptions of how we carry out our business—whether that is making product or protecting the Nation—and on the other hand, we need to demonstrate through action what sustainability means in a specific business or military context and hope that by doing so we can also inspire that challenge to "business as usual" thinking. Otherwise we are stuck in a "chicken and egg" paradox: without proof that sustainability is relevant there is no action, without action demonstrating that sustainability is relevant there is no proof. We need to create the language of intelligibility by enacting the intelligibility.

Ultimately what we are aiming for is that sustainability is integrated into the DNA of our organizations to guide the way we conduct all of our activities, and that this becomes the new "business as usual" the "taken for granted" intelligibility: it becomes the new map through which we make sense of the terrain of our experience. As our stories—our actions based on our stories—and

our stories about why our actions make sense co-arise the likelihood increases that sustainability will be the emergent property of our global system of interactions and relationships.

CHAPTER 7

DIALOGUE WITH PRACTITIONERS ABOUT SPECIFIC TOOLS AND PROCESSES

Brian and I have been helping complex organizations understand and enact sustainability for more than a decade. When we started it is fair to say that the term "sustainability" had very little resonance or meaning for the vast majority of organizations: it was a new system of meaning, and most organizations were quite content and successful with their existing system of meaning. We understood that our role was to facilitate the process of making sustainability meaningful.

This chapter describes some of the specific tools and processes we have developed over our practice to help organizations consider and then integrate sustainability practices into how they conduct their business. The tools and processes presented here focus on the core task of helping sustainability become meaningful within the context of a given organization. It is the achievement of this core task that lays the groundwork for the adoption, integration and validation of sustainability practices. The key elements of our initial work with organizations involve:

1. Generating and facilitating conversations about sustainability and what sustainability can mean to the organization;
2. Telling stories about what sustainability means to other organizations;
3. Facilitating processes to help individuals and teams in the organization see and talk together about the systems in which they are embedded, the relationships between the organization and those systems, and the implications of these relationships for their organization;
4. Facilitating processes to enact the meaning being engendered through this new organizational sustainability discourse;

5. Facilitating conversations about how to confirm and validate the relevance and value of the new sustainability story in and to the organization; and
6. Helping teams within the organization tell the story—first internally and then externally—about what sustainability means to the organization. This, in turn generates more conversations about what sustainability means.

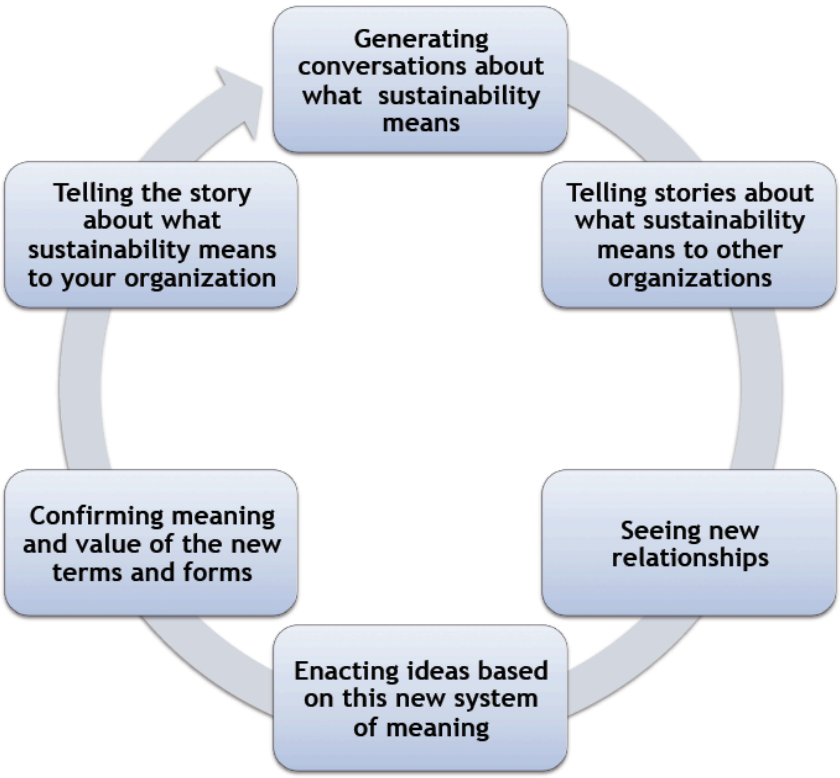

Figure 4: Elements of our initial work with organizations on sustainability

This chapter outlines the general process that we use to engage organizations with these elements. This process is intended and designed to affect attitudes, culture and behavior across the organization's system. This description applies to a large, complex, global system and it works as well at any scale of organization. In our experience it takes between five and ten years for sustainability practices to start to become embedded at every level in every region of a global system. I am able to provide far greater detail on the early stages of the process than the subsequent stages, as these later stages

depend upon what happens in the first stages. In addition, if we are able to help organizations get started on sustainable practice effectively, then more complete organizational integration means that the action occurs inside the organization with less and less of our input. The ongoing sustainability practice of the organization continues beyond our active engagement. This, of course, is the desired outcome of our work with organizations.

Our starting point with any organization is to understand as much as we can about it including basic organizational and industry information, how work is organized, what formal and informal systems of authority and accountability are in place, what the leadership's vision is for the future of the organization, what issues are of greatest concern, and what the organization's current perspectives and practices are with respect to sustainability. This requires discovery work on both our part and that of the organization. Our work then takes the form of sessions with the organization's leadership and workshops with a cross-section of the organization's employees through which we begin the sustainability conversation ultimately leading to strategies and plans for enacting sustainability in the organization's system. This part of the process can take months or years to complete as the organization begins to put specific practices in place, sets out performance expectations and criteria associated those practices, and holds individuals, teams, and departments accountable for that performance. The following sections describe some of the tools we use to carry out this work.

DISCOVERY

Discovery begins when we are first approached by an organization to assist them with the integration of more sustainable practices. As mentioned throughout this dialogue with practitioners about practice, to work effectively on sustainability with any organization, you need to understand as much as you can about that organization, the systems it is embedded in, how it organizes its

activities, its story about itself—its mission, aspirations, concerns, to name a few. This process of discovery is ongoing throughout our engagement with the organization, and generally beyond the time of active engagement. You also need to understand what the organization's current practices are that could be considered "sustainability practices," and what its leaders' attitudes and points of view are about sustainability. In other words integrating more sustainable practices into an organization's culture must begin with an understanding of what the organization's system is already doing and how it allocates attention and resources.

We use four methods to gather data about the organizations with which we work:

1. A review of written materials by or about the organization;
2. A set of leadership interviews;
3. Visits to key organization sites; and
4. A survey of current sustainability practices.

Review of written materials

We review written material provided by the organization as well as material secured through our own research activities. We also conduct research into the systems in which the organization is embedded and specific issues in those systems. For example, our work with Nike included research into the footwear and apparel industries and our work with Starbucks included research into the coffee industry. The review of written materials reveals the story that the organization is telling about itself to external audiences, including how the organization presents its commitment to sustainability if it has one, and what actions it is taking to live that commitment. We also look at the stories that others are telling about the organization, positive and negative, to understand better the storied landscape in which the organization operates. Research into the industry and the sustainability issues associated

with that industry help us to draw our own mental map of the organization's system, and it helps us to frame our conversations with internal organizational constituencies.

Leadership interviews

The leadership interviews help us to learn about leadership perspectives on a range of issues including: the organization's culture, leadership hopes and fears for its future, stories that are important to the organization, lessons that the organization has learned, attitudes to the term/concept of sustainability today, opinions about whether and how sustainability issues will impact the organization in the future, opinions about what current actions leaders are proud of, and what actions they would like to see the organization take, especially with respect to sustainability. In brief, the leadership interviews help us to understand the story that the organization lives internally. These interviews help us see whether and how sustainability is already a part of that story, explicitly or implicitly, and if it is not, what values, programs and actions will support the introduction and integration of sustainability practices. The interviews also provide a glimpse into the mental maps that leaders hold about the organization's system and the orienting cues to which they pay attention. This is important because an organization's leaders play an important role in providing orienting cues for the rest of the organization: they set the destination and direction the organization is going and determine which course the organization will take. In brief, these interviews help us to understand what is, and is not, intelligible in the organization.

Based on a review of written materials and conversations with our primary points of contact in the organization, we develop an interview protocol specific to each organization. We work with our primary points of contact to schedule interviews with a cross-section of leaders across the company. To establish credibility and to signal that attention is important to these interviews, we generally ask the President or CEO of the company to first write

to the leaders who are to be interviewed explaining what the interview is about, how long it will take, why it is being conducted, and to ask each leader to participate. Interviews are generally scheduled through the company's administrative system. Interviews are conducted either in person or by telephone. They are conducted in complete confidence. They are recorded for accuracy and ultimately transcribed for analysis.

The interviews with the organization's leaders are designed to be semi-structured and relatively open-ended. The interview is conducted as much like an easy conversation as possible. The interview protocol outlines "guiding questions," to elicit thoughts and stories about what issues, strategies, threats and opportunities are of highest concern to the interviewee; however, the conversation is allowed to digress from the questions if there are areas of particular importance to the interviewee. In general all of the questions in the protocol get addressed but at different levels of depth depending upon how the conversations unfolds.

The interview begins with a brief explanation about the project and why the information we are gathering is important. We reinforce that the interviews are being conducted in strict confidence and that we will not be attributing comments to specific individuals, rather we will be looking for themes across interviews. Following is a sample interview protocol together with an explanation of why we ask a specific question.

Sample interview protocol:

1. Top of mind, please give us 10 words that you would use to describe [your organization's] culture. For example, if a good friend asked you [name] what is it like to work at [organization], what would you say? What words would you use to describe it?

Purpose of question: to break the ice and to identify internal perceptions of the organization's culture and key words to describe that culture.

2. What are your greatest hopes for the future of the company? Where do you see the greatest opportunities for the business?

   Purpose of question: To identify key business aspirations and opportunities from the interviewee's perspective.

3. What are your greatest fears? What keeps you awake at night?

   Purpose of question: To identify key threats to the business from the interviewee's perspective.

4. Imagine you meet someone who can truly foretell the future. You are able to pose only three questions to this person about [organization's] future. What would you ask?

   Purpose of question: To begin to understand priority issues, what are the concerns of relative importance and impact. What is going to make a real difference to the company?

5. What pivotal events can you identify in [organization's] past—good and bad—that should remain in our memories as important lessons for the future?

   Purpose of question: Helps reveal mental models based on patterns and experiences from the organization's past and to surface key myths and maps that influence thinking about what is plausible in the future.

6. What major decisions with long-term implications does [organization] face right now, decisions that need to be tackled in the next year?

   Purpose of question: aims to get at what issues are currently and uppermost on the interviewee's mind out of the array of possible issues competing for his/her attention.

7. How do sustainability issues influence your business strategies and decisions today?

   Purpose of question: aims to understand whether sustainability issues are seen as relevant to the organization's success today, and relevant to a given person's day-to-day concerns.

8. How do you think sustainability issues will influence your business strategies and decisions in the future?

   Purpose of question: aims to understand whether sustainability issues are seen as an area of future concern and relevance to the organization's future success, and relevant to a given person's day-to-day concerns.

9. What advantages or disadvantages do you see for [organization] to being proactive on environmental and social issues?

   Purpose of question: helps to reveal the interviewee's perception of the current benefit to [organization's] business of focusing on environmental and social issues.

10. What sustainability actions would you like to see [organization] take?

Purpose of question: helps to reveal the interviewee's perception of what constitutes sustainability actions as well as what direction s/he would like to see [organization] take.

11. What major constraints, within or outside [organization], do you think limit what the company can achieve with regard to environmental and social issues?

    Purpose of question: to surface internal structural issues and external dynamics that are perceived to influence actions and outcomes in [organization].

12. Please consider the time in the future when you will have moved on from your current position to the next job, or to when you leave [organization]. What do you hope to leave behind that people will associate with your time in this position? What do you want to be remembered for?

    Purpose of question: helps to reveal interviewee's personal aspirations and value system.

13. Is there anything that we haven't asked you that you feel is important for us to know about [organization]?

    Purpose of question: to provide an opportunity for the interviewee to add information about [organization] or [organization's] business environment that is top of mind for that individual.

After all the interviews are conducted, we transcribe them and analyze them for key themes that emerge. This provides us with cues about how to structure our conversations around sustainability.

Site visits

In addition to written materials and leadership interviews, we visit key organizational sites, such as the organization's headquarters, key manufacturing sites if applicable, retail outlets, design studios, distribution centers, etc. to increase our understanding and "feel" for how the company operates and what activities are involved in those operations. Site visits help us to witness how the organization lives its story day-to-day in a way that written documents cannot provide. By being on-site we gain perspective on the organization's culture: the pace of activity, the formality or informality of physical space, the artifacts and symbols, the visible signs of sustainability practice or absence thereof, and the energy and mood of the people, as well as insight into the specifics of carrying out the organization's business. This helps us to fill in more detail in the maps we are drawing about the organization's system.

Survey of current sustainability practices

If an organization is intent on integrating sustainability into its story, it is important to know what its current reality is with regard to sustainability practices. Often organizations have a number of practices already in place that they do not call "sustainability" practices; sometimes they just call these practices "good business" practice, such as energy efficiency or water conservation. The survey of current sustainability practices gives us a snapshot of what the company is currently doing. It also stimulates conversations about sustainability across the organization about the types of practices that can be implemented.

We conduct a web-based cross-system survey of current sustainability practices to identify what different parts of the organization are currently doing with respect to the areas specified in the survey instrument. We develop the survey instrument in collaboration with our primary points of contact in the

organization. The survey covers areas of practice that in our experience are coming to be associated with sustainability. Different surveys are constructed for each functional area of the organization. For example, for a large apparel company the survey areas would include: product research, design, and development; marketing and communications; manufacturing plants; stores; distribution centers; and headquarter operations. The questions on the survey cover topics that are specific to each function. For example, typical questions for a headquarters facilities survey question include:

1. Has the environmental impact of your facilities' operations been assessed in the past?

2. Do your facilities have an environmental management system in place?

3. Do your facilities perform any of the following actions to increase resource efficiency?

   (Recycle paper, recycle plastic, recycle glass, recycle aluminum, recycle cardboard, compost, print double-sided, re-use the back of single-sided paper in print jobs, track paper use, purchase recycled paper, purchase soy based inks, turn of all electronics when not in use, unplug all electronics when not in use, use motion sensor lights for low use areas, turnoff lights when not in use, use compact fluorescent light bulbs, use energy star or other energy efficient printers, use energy star or other efficient computers, use energy star or other efficient monitors, use energy star or other efficient fax machines, use energy star or other efficient copiers)

4. Do you have a green team?

5. Do your facilities have staff dedicated to addressing environmental issues?

6. Is there an environmental awareness education program for employees?

7. Is there support from employees to pursue more environmentally friendly company activities and policies?

8. Do your facilities monitor energy use?

9. Have you ever conducted an energy audit of your facilities' operations?

10. Do your facilities follow a specific energy reduction plan?

11. Do your facilities use or purchase any alternative or renewable energy?

12. Do you monitor the quantity of waste being disposed from your facilities?

13. Have you conducted a waste audit at your facilities?

14. Do your facilities follow a specific waste reduction plan?

15. Do you have an electronic waste recycling or donation system?

16. Do your facilities monitor water use?

17. Do your facilities follow a specific water reduction plan?

18. Do your facilities have a system for measuring your greenhouse gas emissions (e.g., CO2, methane, ozone, etc.)?

19. Do your facilities have a system for reducing your greenhouse gas emissions (e.g., CO2, methane, ozone, etc.)?

20. Do your facilities avoid use of materials with high volatile organic compound (VOC) emissions?

21. Do you take any measures to maximize indoor air quality?

22. Are there any other annual environmental performance objectives for the facilities that have not been covered above?

23. Does Headquarters survey employee's company-wide to find out what issues are of concern to them?

24. Does Headquarters educate employees on how to minimize their individual environmental impact?

25. Does Headquarters set corporate policies that influence environmentally friendly practices across the entire company's operations? (Please consider the areas of waste, water, and energy use.)

26. Is there a policy in effect that requires new construction and renovation projects to consider LEED (Leadership in Energy and Environmental Design) standards or other green building features?

27. Does your Headquarters have a system in place to track and assess the financial implications of sustainability projects?

28. Does Headquarters have goals, metrics or reports associated with any of the environmentally friendly practices employed by HQ operations in particular or the company in general?

29. Are there currently any systems, programs or procedures in place at your facilities to promote environmentally friendly practices that have not already been covered in this survey?

30. Are there environmentally friendly systems, programs, projects or procedures, which you have previously investigated, that are not currently being implemented or measured?

31. Are there any environmental practices, procedures or ideas, which you feel are relevant to your business, that are not currently being implemented and that we should investigate further?

The survey is administered on line over a month's time. When the survey is completed we put together a confidential report for the organization that summarizes the themes from the leadership interviews, the results from the surveys, insights derived from the site visits and review of written material, and the implications we feel all of these mean to the integration of more sustainable practices into the business together. We also provide our recommendations on how best to proceed in the subsequent stages. This document reflects back to the organization what we have learned about its story and the map it uses to orient its actions. This helps us to confirm whether our emerging story about the organization matches the story the organization tells itself about itself through its many voices and perspectives. This process also enables us to advance the conversation about what sustainability could mean to the organization and why and how sustainability practices make sense.

LEADERSHIP: SETTING THE VISION AND FOCUS

The discovery work helps us to map the terrain of the organization's culture and to understand to some degree how the organization traverses this

terrain, in particular what stories and other orienting cues guide strategy, decisions, and actions. One of our intentions is to get sustainability on the map and this most effectively begins when the leadership of the organization puts it there. Organizations turn to their leaders for direction, support and affirmation. Employees want to know the leadership's point of view about sustainability: is it important to spend time on or not? They also want to know what leaders' want them to focus on in their day-to-day work. To begin to write and/or integrate sustainability into the story of the organization, two things are key. Leaders need to:

1. Develop and articulate a leadership sustainability vision; and

2. Identify where the organization will focus attention.

The vision signals that sustainability is on the map. To effectively integrate sustainability as a cultural value that is evident in the way employees think about, approach, and do their work, we have found that it is fundamental to have a clear and compelling vision of what sustainability success looks like in the organization's context. The organization's sustainability vision is the 'true north' that employees throughout the company will be asked to aspire to and work toward. To get the attention that shifts in culture require, ideally the vision is the unified statement of top leadership.

The focus areas provide direction regarding which orienting cues require attention. They enable members of the organization to coordinate activities that make the terms and forms of sustainability intelligible, usually by creating internal teams to address each focus area. These teams identify the strategies and actions the organization needs to take to move ideas about sustainability into action, and the resources required to do so.

The work of envisioning and focusing is usually conducted either through two workshops, one half-day workshop with the executive leadership of the organization, and one two-day workshop with a cross-section of the organization's system, or as one 2.5-day workshop that includes both sets of participants. The first workshop is conducted with executive leaders to articulate the leadership sustainability vision. The participants in this workshop generally include, but are not be limited to, the organization's top leadership including the Chief Executive Officer, Chief Operating Officer, Chief Financial Officer and other senior leadership officers, and key direct reports to those officers, generally executive vice-presidents of key divisions. The workshop combines storytelling and map-making. The stories we explore are the co-arising story of un-sustainability and sustainability, the story of the relevance of sustainability to the organization, and ultimately the story that is the vision of what this given organization looks like in a sustainable world. The mapmaking is the introduction of a mental model to help make sense of this new terrain. The specific elements of the workshop are:

1. The emerging global scientific consensus on key sustainability drivers, trends, and issues facing societies and commerce around the world, and how these could impact the organization's short and long-term business success. This is a presentation of the story of un-sustainability through key facts and global symptoms about climate change, the end of inexpensive oil, population growth, the degradation of natural systems, global inequities, concerns about water, to name a few.

2. The business case for integrating sustainability throughout the organization as a way to take advantage of both the tangible and intangible benefits of doing so. This includes a presentation on tangible and intangible value in corporations as well as small group exercises to provide an opportunity for workshop participants to talk

with each other about what the information presented to this point in the workshop means to their business. This is one of many times we stop to look at the relevance of the topic areas in the workshop to the company's business.

3. The Natural Step Framework, which helps provide a mental model for understanding the organization's sustainability impacts and opportunities. After presenting information on The Natural Step Framework, we lead an exercise where we ask the participants to analyze one of their own products or processes using the Framework. We then engage in a dialogue about the challenges of global systems that are moving in a sustainable direction to establish that we need to work on these systems as well as on our specific actions.

4. Brief case studies of how other organizations are integrating and benefiting from more sustainable practices. This includes presentations on stories from other organizations, how they made sense of sustainability, what visions and directions they set out, and what actions they are taking. This is followed by another dialogue session to make connections back to the business of the stories the participants just heard.

5. Exercises to identify the key elements of the sustainability vision that expresses the organization's leadership's sustainability aspiration. The actual exercises differ depending upon the organization and its needs. A typical exercise would be to have the leaders organize into small groups of 5-7 people. Each group then works on creating a headline that shows up in a desired publication (for example Fortune Magazine) at a future year (usually 20-25 years in the future). The headline provides a banner for what others are saying about the company's contribution to sustainability, while also featuring the

company's business success. The teams then write a brief description of the story behind the headline, and list some of the key qualities of that story. Each team then presents its headline and story and we engage in a dialogue about what the key characteristics would be of a sustainability point of view or vision.

The objective of the visioning workshop is twofold:

1. To raise awareness and understanding about what sustainability means in general and what it means to the organization in particular; and

2. To create an authentic, clear, and compelling sustainability vision that will inspire enthusiasm and action throughout the organization's system. Awareness and understanding is vital in order to move forward with a unified vision around sustainability that supports the organization's business vision and business success.

Once the sustainability vision is articulated, the next step is to determine how the organization will begin to move from its current state, captured at a high level in the current sustainability practices survey, to its desired end-state, captured in the leadership sustainability vision. To do this we generally conduct a second workshop with participants from across the organization's system. This workshop repeats the first four segments contained in the leadership-visioning workshop:

1. The emerging global scientific consensus on key sustainability drivers, trends, and issues facing societies and commerce around the world, and how these could impact the organization's short and long-term business success.

2. The business case for integrating sustainability throughout the organization as a way to take advantage of both the tangible and intangible benefits of doing so.

3. The Natural Step Framework, which helps provide a mental model for understanding the organization's sustainability impacts and opportunities.

4. Brief case studies of how other organizations are integrating and benefiting from more sustainable practices.

With this common foundation, the workshop participants then:

5. Take a global view of the organization's overall system to understand how it is embedded in and interconnected with multiple other social, economic, and natural systems. We do this by having the participants work in teams to draw a map of their system and to examine key relationships in that system.
6. Identify the organization's global system's impacts, risks and opportunities from a sustainability perspective. Once the maps are drawn and presented, we consolidate the different team maps and draw a single map, usually using a full wall of the room in which the workshop is taking place. We then use this map and The Natural Step Framework as tools to help identify the potential sustainability impacts, risks and opportunities associated with the organization's business and operations.

7. Identify and prioritize the sustainability areas on which to focus attention, resources and action where the organization has the greatest leverage to make a difference, decrease risk, or act on opportunities. After these potential impacts, risks and opportunities

are identified we work in teams to explore where in the organization's system sustainability actions can make a tangible positive difference from the perspective of the environment, social aspects, and for the health of the business. We prioritize these areas into a limited number of focus areas.

8. Create teams around each focus area, and create an action plan for each focus area team. We organize the workshop participants into teams for each of the focus areas that have been identified. For each focus area, the team assigned to that area develops an initial action plan including an initial long-term vision of success for that area, one-year milestones. Essentially we ask them to tell the story of how the company will take action in the future.

9. Identify first steps including pilot projects, low-hanging fruit, etc. The workshop is intended to be the starting point of action. The final activity for the workshop participants is to map out the first steps that need to be taken for each action plan in each focus area and to determine who will be responsible for moving this action forward.

The Natural Step Framework and System Mapping are two important elements of these workshops. I describe each of this in more detail:

The Natural Step Framework

As described in Chapter 3, two Swedish scientists, Dr. Karl-Henrik Robért, an oncologist, and Dr. John Holmberg, a physicist, combined forces to create The Natural Step Framework. Their aim was to simplify and clarify the conversations around sustainability. What attracted us to The Natural Step Framework is this elegance and simplicity. The Framework is explicitly built on

broadly accepted scientific principles, particularly as the laws of thermodynamics and scientific understanding of the cyclical nature of the Earth's systems.

The first three Natural Step system conditions were developed out of two scientific disciplines: biology and physics. They are simple to state, and they provide some guidance for action. The first system condition, for example, tells us that in order for human society to be sustainable, biological nature must not be subject to increasing concentration of substances from the lithosphere, such as fossil fuels and heavy metals. If we want human society to be sustainable, we need to reduce and work toward eliminating these substances from our products and our processes so that concentrations of these substances do not build up to toxic or otherwise damaging levels. There are specific actions we can do to accomplish this. For example, the build up of concentrations of CO_2 in the atmosphere, the major cause of climate change, is a by-product of burning fossil fuels. The continued build up CO_2 is unsustainable as it threatens the ecosystems on which we depend. More sustainable practice is to reduce the organization's dependence on burning fossil fuels to support its activities in favor of other energy resources that do not cause the build up of concentrations of harmful substances.

The second system condition tells us that in order for human society to be sustainable, biological nature must not be subject to increasing concentrations of substances made by society especially persistent organic and synthetic substances. These substances persist in the environment and bio-accumulate through the food web. Examples include PCBs (Polychlorinated biphenyl) and DDT (dichlorodiphenyltrichloroethane) and other substances used in a vast array of the products and the industrial processes we use. If we want human society to be sustainable, we need to reduce and work toward eliminating our use of these compounds so that they cannot build up in natural systems, including our own bodies, until they reach toxic levels. Often we do

not even know that our products and processes contain these substances because we do not necessarily specify materials based on chemistry, but on performance. More sustainable practice includes becoming more conscious about material chemistry and the substances required in industrial processes; identifying what substances are known or suspected to be harmful; and phasing out our direct or indirect use of those substances.

The third system condition tells us that in order for human society to be sustainable, biological nature must not be subject to physical destruction such as overharvesting forests, fisheries, water, and other resources or physically degrading nature's ability to produce clean air, clean water or fertile land. If we want human society to be sustainable we need to safeguard our natural resources and engage in industrial activities that do not overharvest or deplete life-supporting systems. More sustainable practice includes sourcing products from certified sustainably harvested forests or fisheries and protecting and conserving precious water resources.

The first three system conditions refer to our relationship with the ecosystems that support us. The fourth system condition refers to a state of human affairs: that in order for human society to be sustainable, we need to figure out how to meet human needs worldwide, a challenge that increases with a global population of 6.7 billion people and growing, where access to life supporting resources is rife with inequity and conflict. Organizations are increasingly being held to task for the labor practices associated with their products and processes. More sustainable practice ranges across multiple dimensions from treatment of employees to supporting the health and well-being of communities that are impacted by your operations.

The system conditions provide orienting cues to help the organization create a map of the terrain in this new system of understanding called sustainability. In a workshop setting these four points on the map facilitate the

sustainability conversation. We can begin to organize the diverse range of environmental issues that are part of sustainability practices into the first three conditions: substances from beneath the Earth's crust; synthetic, persistent organic substances produced by society; and the physical destruction of natural systems. The diverse range of social and cultural issues can be organized under the fourth system condition. By organizing issues and practices with this mental map, workshop participants can talk about how the organization's activities—whether that is product design, facilities operations or the transport of goods—relate to each of these system conditions. When workshop participants begin to see these relationships, they can begin to imagine what different, more sustainable, actions the organization can take.

The Natural Step Framework is a powerful tool to help groups quickly develop a set of common terms with which to talk about sustainability. The Framework helps to organize a vast array of data into four points. This provides form for the sustainability conversation. Teams can then look at everything from a specific product to a global logistics system and ask how those items measure up today with respect to the system conditions. We can also use the Framework to imagine what an ideal product or an ideal global logistics system would look like if it met all four system conditions. Having shared terms and forms means we can begin to make sense together. More detailed information about The Natural Step Framework and how organizations have applied it can be found in Nattrass and Altomare (1999) *The Natural for Business*, and Nattrass and Altomare (2002), *Dancing with the Tiger*.

System mapping

Another way of understanding how the actions of a single organization relate to sustainability on a global scale is to place the activities of that organization in a map that connects it with that larger system. We generally do this by first telling the story about how Ray Anderson, founder and CEO of

Interface, Inc., mapped out the system of his company to better see where it made sense for his company to focus its time and resources. Anderson's model depicts what he calls the typical company of the 20th Century[200] and what he refers to as the Prototypical Company of the 21st Century. Using these two maps of his company's system, Anderson determined where his company should focus to make a difference, to move from the 20th Century story of the unsustainable company to the 21st Century of becoming a restorative company. Figure 5 shows Anderson's depiction of the 20th Century story and Figure 6 shows the map of the 21st Century Company.

At its core every company has values and organizes its work through people, processes and capital. The company depends upon its relationships with suppliers who provide material (raw materials or finished goods) in return for money. Every company also depends upon relationships with its customers, who exist within a market. The company provides products to those customers in return for money. Every company also lives in complex relationship with communities that provide employees, investment, and laws in return for wages, dividends and taxes. Anderson adds to this the fact that every company also lives in complex dependent relationship with the lithosphere and the biosphere because this is the genesis of the materials that flow through the system. He also points out that what we return to the environment is waste and emissions. In fact, when Anderson looks at this map, he points out that essentially it is a take-make-waste system and as consumption increases so does what we take and what we waste.

[200]http://www.ifsia.com/eur/company/sust_report/sust_report.swf

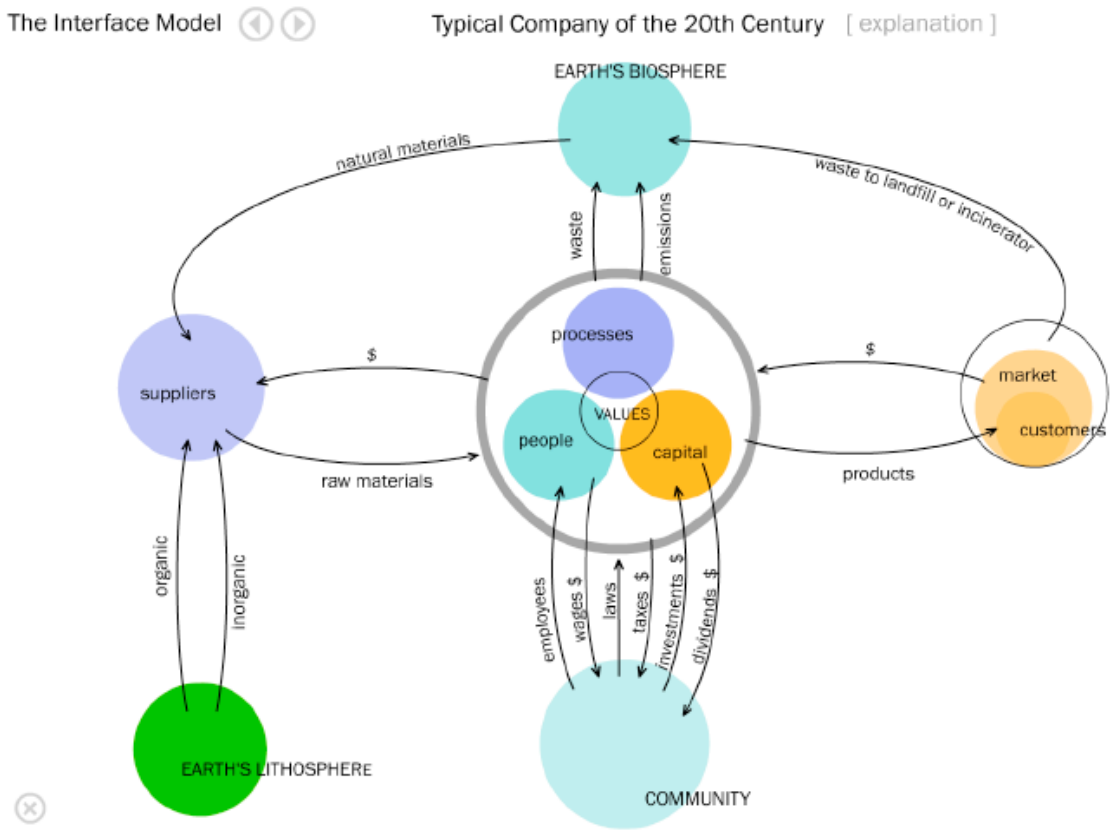

Figure 5: Interface, Inc. Model—typical company of the 20th Century

If we are going to break out of this take-make-waste system we need to rethink the map. Companies in the 21st Century will still purchase materials and products from suppliers and they will still deliver products to customers in a market and there will still be a flow of money through that system. What needs to change, however, if that company is to meet the four system conditions includes:

1. Eliminating the use of hydrocarbon and heavy metals so that we are no longer taking substances from the lithosphere that can build up in dangerous concentrations in the biosphere. We have found ways to power our economy and our lives using renewable resources. We have found non-hydrocarbon-based resources to make our products.

2. At the end of useful life, our products do only two things – they compost in natural cycles or they return to a technical cycle and become feedstock for new products or processes.

3. We expand our relationship with communities by making investments back to communities, becoming more involved in community well being, and helping communities understand and implement more sustainable practices.

4. We fundamentally rethink commerce. Instead of selling the material that make up our products, we sell the service of those products. In the case of carpet, for example, the company sells the service provided by the product—aesthetics, comfort, sound dampening—while the company keeps custody of the material. When the customer has finished its use of the product it does not go to the landfill, it returns to the company that provided the material so that it can be deconstructed and made into new product.

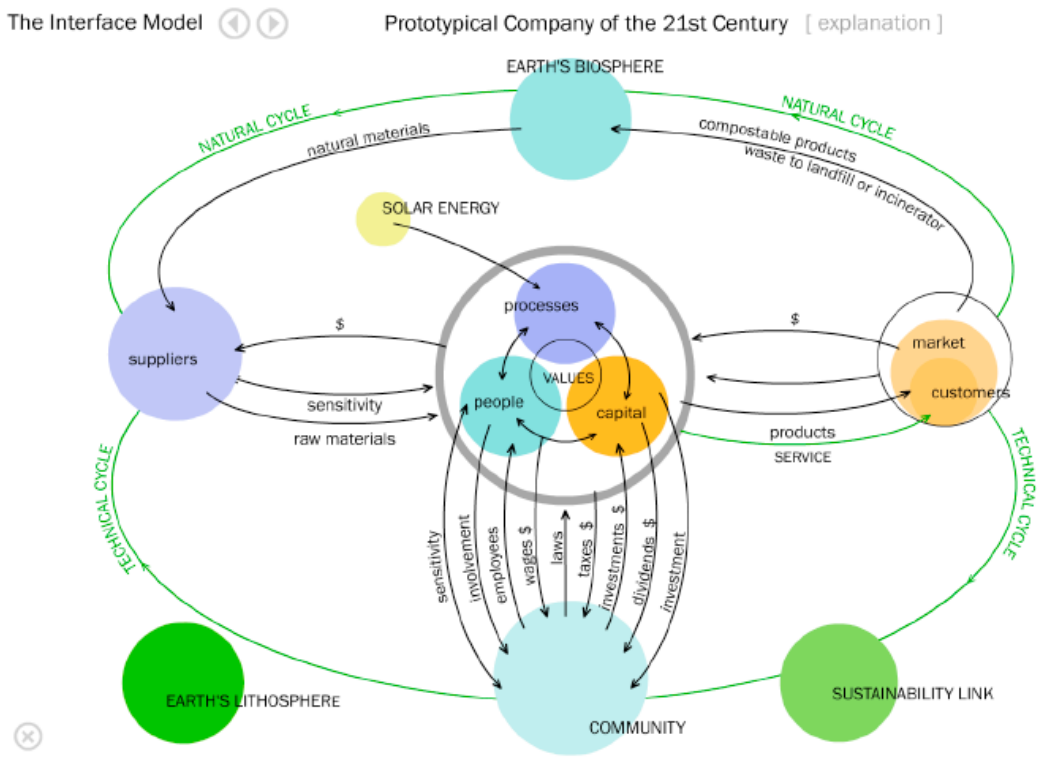

Figure 6: Interface Inc. Model -- Prototypical Company of the 21st Century

After the presentation we instruct teams to draw the maps of their organization's system using these ideas as a starting point. Usually we leave the decision regarding whether to follow the Interface map or to innovate a different way to map the system. On occasion we provide a specific model for the teams to follow, as we did with teams on the Army installations (see Figure 7). This system mapping process helps workshop participants "see" the systems and relationships in which the organization is embedded. Together with the mental model provided by The Natural Step Framework, these tools make it possible to move from sustainability as an amorphous concept to one that has terms and forms to give it structure and meaning.

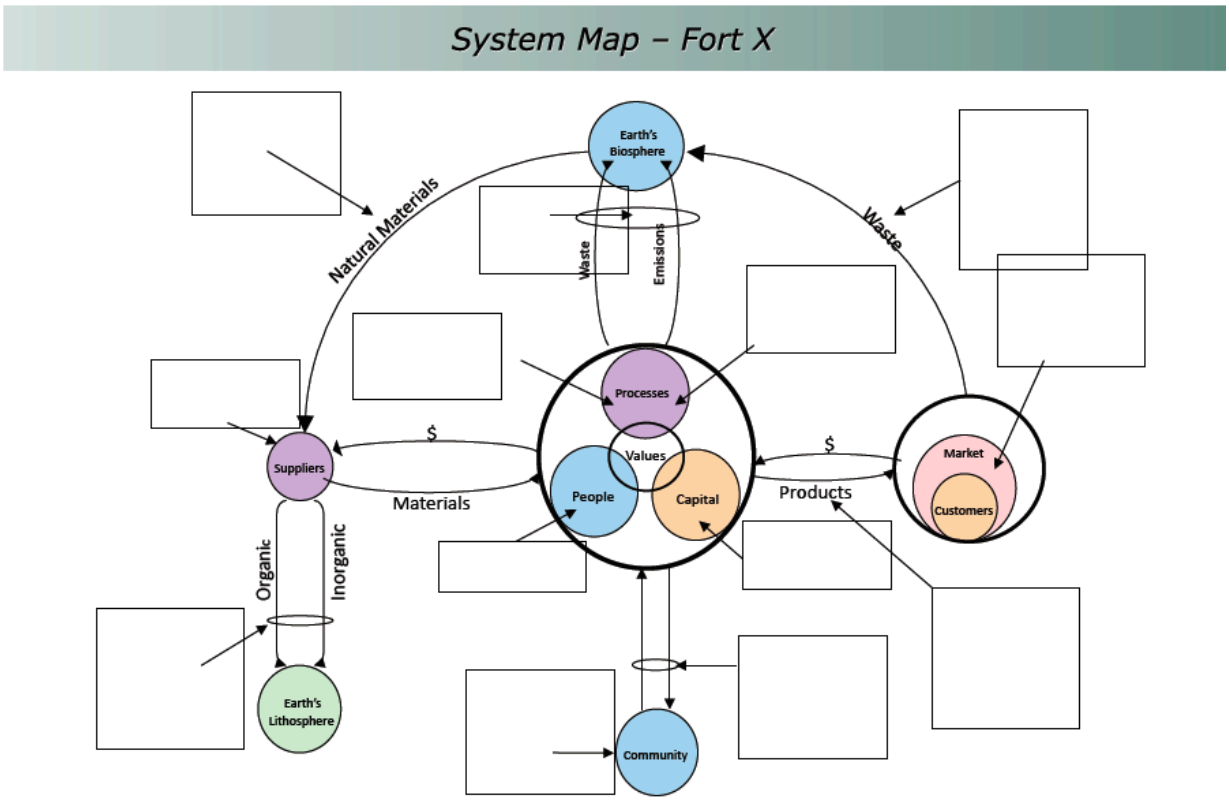

Figure 7: System map template – Fort X

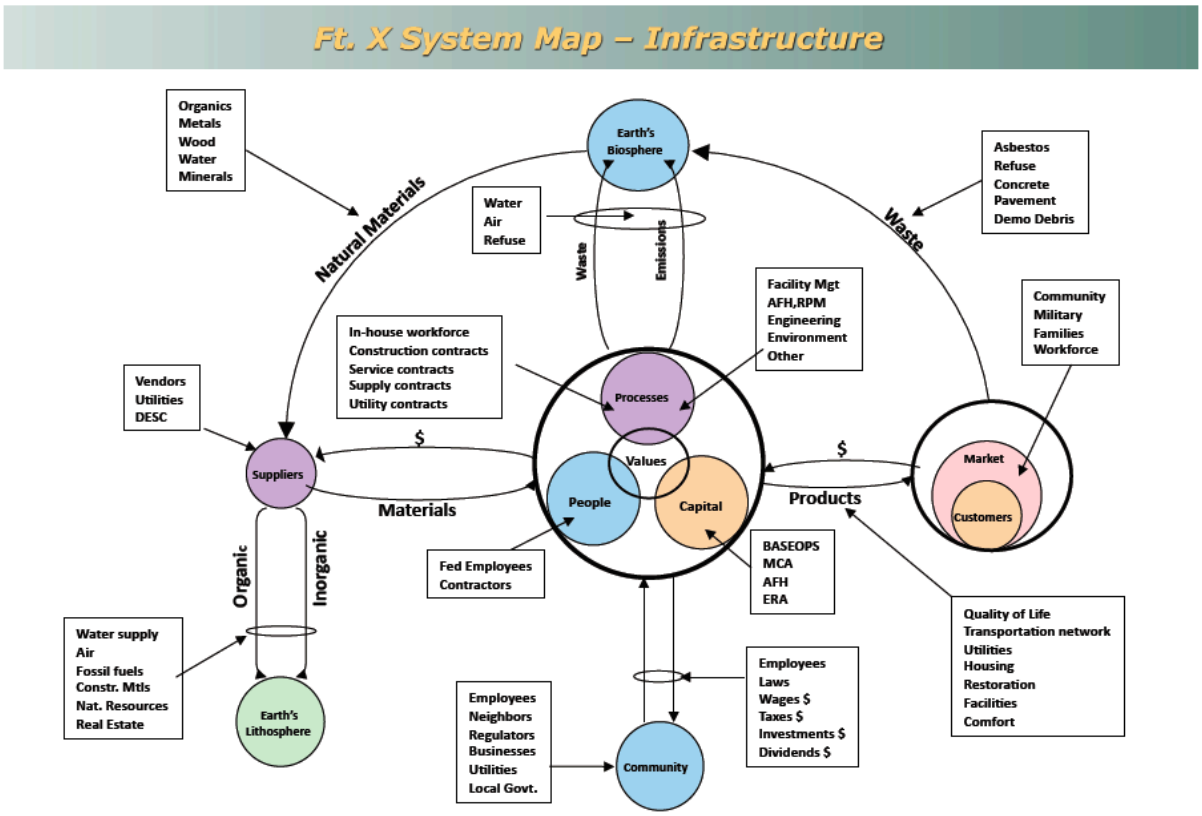

Figure 8: Fort X system map for infrastructure—U.S. Army system mapping exercise

Ultimately what we seek to achieve during the envisioning and focusing process is to create:

1. A common awareness and education about sustainability among the organization's senior leadership;

2. A common language and mental model or framework with which to effectively think about sustainability across organization functions;

3. A clearly articulated sustainability vision developed by the organization's leadership;

4. A set of organization-wide strategic, high-leverage sustainability focus areas;

5. Teams created around each focus area, and an initial action plan for each focus area team;

6. The resources and "go-ahead" for specific projects; and

7. Direction and a story that makes sense to key leaders and employees across the organization and that they can explain it intelligibly to others in the organization.

These elements are generally enough for internal organizational teams to put together:

8. A sustainability integration strategy for the organization; and

9. An internal communication strategy that begins to tell the story of the organization's sustainability vision; how that vision is to be enacted through organization-wide focus areas; and what this means with regard to leadership expectations and commitment, two significant orienting cues within any organizational map of reality.

INTEGRATING SUSTAINABILITY

Once sustainability begins to become a meaningful term and an organization begins to coordinate activities to give it form and structure, the day-to-day work becomes the purview not only of sustainability practitioners within the organization, it also becomes part of the way everyone conducts his or her work. This does not happen overnight and the role of the internal sustainability practitioner is to keep this process on track: to support the success of sustainability actions that have been identified and to continuously tell the story about how these actions support the purpose and success of the

organization. Supporting sustainability success can take countless forms. It is beyond the scope of this paper to detail those forms as they will emerge and evolve as organizations, social norms, and technologies evolve to address sustainability issues.

As an external sustainability practitioner our role at this point is generally to support the internal sustainability practitioners' success whether these individuals hold a formal or informal claim to the title. This often means providing additional presentations, training sessions and strategy sessions with internal teams, providing research support, working with teams on specific projects, developing internal training materials, and a range of other support services. We also provide coaching to internal sustainability practitioners; assistance in developing training materials and presentations; and assistance with external communications such as corporate responsibility reports. Ultimately, and perhaps ironically, no longer being needed by the organization marks the successful achievement of our work with the organization. Our core objective as external sustainability consultants is to help move sustainability from a new idea and perspective to an ethic that characterizes how business is conducted at the organization worldwide: to help make sustainability integral to as many organizational stories as we can. The successful achievement of this objective will show up when sustainability is a normal part of functions and systems that support business activities and reinforce the coherence of an organization's cultures. For example, this will be seen when sustainability is a normal part of organization's recruitment, training, performance evaluations, corporate reporting, and incentive and reward systems.

We look at our work as an ever-expanding network of relationships with practitioners who are advancing the social construction of sustainability in society. We work with organizations to help build these practitioners' capacity to do this. Although our remunerated work with an organization comes and goes and comes again, our relationships continue to be the life-blood of our

practice, the threads that make up the tapestry of our story. The conversation continues. We learn and we share what we learn. We constantly evolve our stories, our metaphors, our tools, our processes, and our results. We consistently follow the stories of each organization we have worked with as it evolves, and of other organizations—a growing number of them—that are joining the conversation about how we can go on together.

CHAPTER 8

THE EVOLUTIONARY CROSSROAD

> In the end, all that is meaningful grows from relationships, and it is within this vortex that the future will be forged.
>
> Gergen (1994, p. ix)

Humanity stands at an evolutionary crossroad. A growing body of evidence tells us that human activities are depleting and destroying life-supporting ecosystems and contributing to changes in the global climate; and that these dynamics could ultimately jeopardize the viability of our species, as well as many other species on the planet. According to this emerging story, if humanity does not change course we are in danger of crossing ecological and climate thresholds that could make *us* an endangered species. If that is the case, we are indeed talking about the evolutionary prospects of humanity. This is a new story for our species. Although it is challenging at best for us to imagine, we ignore it at our peril. Some urgency is thus associated with the task of making this story more widely intelligible.

We need to develop *ecological intelligence*, Daniel Goleman (2009) counsels:

> Today's threats demand that we hone a new sensibility, the capacity to recognize the hidden web of connections between human activity and nature's systems and the subtle complexities of these intersections. This awakening to new possibilities must result in a collective eye opening, a shift in our most basic assumptions and perceptions, one that will

drive changes in commerce and industry as well as in our individual actions and behaviors (Goleman, 2009,p. 43).[201]

Although this "awakening to new possibilities" has begun, we are still far from "a collective eye opening". Making fundamental shifts in our most basic assumptions and perceptions about how the world works and how we should act within it does not happen over night. Four assumptions that have begun to come into question stand out:

1. The life-supporting resources and ecosystem services of the Earth (such as air to breathe, water to drink, topsoil, food, material for shelter and clothing) are limitless—they will always be there for us;

2. The Earth's ability to serve as an endless sink for the waste humanity produces is also limitless;

3. Environmental or social stress or damage that occurs far away from us does not really impact us; and

4. As a species we do not have the ability to seriously damage or alter the life-supporting systems of nature upon which we so absolutely and totally depend.

As I discussed in some detail in Chapter 3, over the past five decades, particularly since the publication of Rachel Carson's *Silent Spring* these assumptions have been unraveling. The voices pointing out this unraveling were at first few, but have grown into a chorus. Today the conversation is being carried out in every sector, across disciplines and professions, and in multiple media. The attention being paid to the fault lines in these assumptions has gone from the margins of society to the mainstream.

[201]Goleman, D. (2009). *Ecological Intelligence*. New York, Broadway Books. p. 43.

Nevertheless, the way we live our lives and carry out our activities remains aligned with these four assumptions. We live, work, recreate, make things, transport things, and dispose of things as if resources are unlimited, waste doesn't matter, what happens outside our backyards can't hurt us, and that our actions couldn't possibly make a difference to global ecosystems or global climate.

The generations alive today are living at the crossroads, the transition between two intelligibilities (Gergen, 1994), or as Berry (1985/86) puts it, in between stories. The old story is old not only in the sense of being a story from the past; it is received wisdom about way the world works. We were born into it and we take it for granted as the way the world is supposed to be. The story still seems to be working quite well. The world has achieved levels of wealth, health, and technology unprecedented in human history. We have goods, services, information, and experiences available to us that no other generations in human history have known. When we look at life in the 21st Century through the lens of this worldview, there is every reason to believe that progress means that more and more people will have access to more and more of these good things in an ever-expanding world of consumption and possibilities. What is wrong with this story? Is there a better one?

Looking again at Gergen's (1994) schematic for paradigm shifts, we are reminded that the movement from one intelligibility to another doesn't occur simply because someone has a better story. It occurs because something in our experience begins to indicate that something in the old story is no longer functioning (Berry 1985/86).

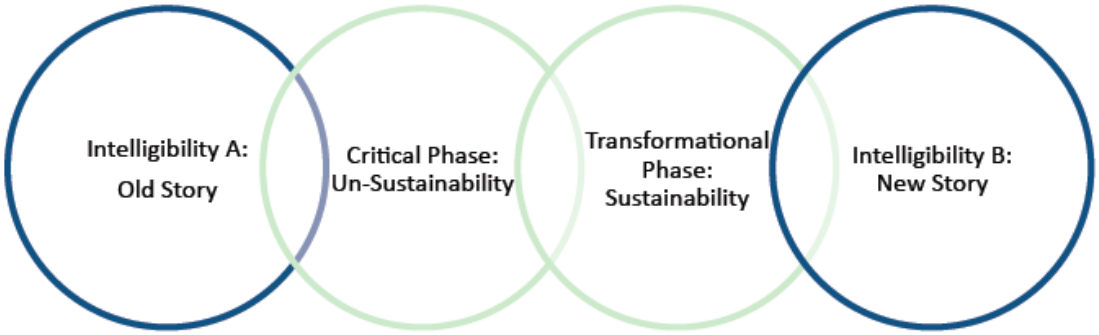

Figure 9: The transition from the old story to the new story revisited

The early voices in what became the un-sustainability story did not set out to question the fundamental assumptions of a worldview, they were calling attention to specific experiences or observations that they believed explainable and solvable within the constructs of that worldview. These voices questioned certain practices or outcomes focused on specific localities, but they didn't question the prospects for the system as a whole to solve these problems and to continue.

As described in Chapter 3, the story of un-sustainability grew as an increasing number of voices began to ask whether the environmental and social challenges facing humanity might be bigger than the problems of controlling local pollution: What if there were limits to growth on the planet? Was there a population bomb ticking? Could the Earth continue to sustain humanity? Would there be enough to meet our needs and for future generations to meet theirs as well? What if, in the spirit of Einstein's oft-quoted words, we could not solve our problems with the same thinking we used to create them?

In the critical phase of a paradigm shift, "conventions of negation are employed to undermine confidence in the dominant form of intelligibility" using language from an alternative intelligibility that lends credence to the critique (Gergen, 1994). New terms emerged to talk about the challenges we observed. We began to ask new questions, for example: Was humanity

bankrupting nature? Is humanity on a collision course with the natural world? Are we putting our future at risk? What constitutes sustainable development? What is our ecological footprint? What is the value of ecosystem services? What fundamental system conditions need to be met for global society to be sustainable? Could human activities be changing the climate? The propositions contained in the old story were increasingly challenged by arguments making use of terms not included in that intelligibility (Gergen, 1994, p. 12). New terms and forms were being explored and negotiated.

The voices raising the alarm about cracks in the old story can be traced back over at least the past half-century, certainly the majority of my lifetime. The evolution of those concerns into the critical questioning of fundamental propositions in the old story can be traced back at least for the past 40 years. These voices raise the prospect that not only are there serious fault lines in the old story, but also that continued adherence to this story is potentially leading us—all of us—into a future of grave environmental and social distress if not worse. The human species, these voices tell us—albeit the dominant species on the planet with a distinctively well-developed cerebral cortex that gives us some adaptive advantages—is still totally dependent upon the rest of nature to survive. We cannot separate ourselves from nature.

> Humanity evolved within the natural world. We share part of the genetic codings of all living species, especially other mammals. We are part of the food chain; we eat and are eaten; our bodies are the hosts of bacteria, yeasts, parasites; when we die, our bodies form the parts of other living creatures. We are, as are all living things, dependent upon the natural cycles of water, nitrogen, carbon dioxide. If the rains fail, as they frequently do, we starve…Humans have evolved with unique characteristics, as have all species, and this difference has enabled them to move to a position of

> control. But if, for instance, there was abrupt climate change, humanity could easily become extinct, while other species, better equipped for such an event, could gain ascendancy (Berry, R. J. ed., 2006, pp. 70-71).[202]

As discussed in Chapters 2 and 3, however we define "nature" and imagine our relationship with it, if we do not have air to breathe and water to drink, we no longer exist. There are limits to our adaptability. The future of our species depends upon the balance woven by the "hidden web of connections" within nature and the relationship between human activities and natural systems.

Some relationships are non-negotiable. We depend upon the Earth's maintaining the chemical and physical balances required to sustain our form of life. The balances that support human life did not always exist on this planet. In the early history of Earth, for example, the atmosphere was a toxic blend of compounds such as methane, ammonia, nitrous oxide, carbon dioxide and water vapor, a place inhospitable to human life. It took more than two billion years of plant life extracting energy from sunlight through photosynthesis, using up carbon dioxide, and giving off oxygen, to create a place congenial for the life forms we know today. These life forms exist within a relatively small range of chemical and physical relationships. Today, for example, oxygen makes up about 21% of the Earth's atmosphere compared to .2% about 2 billion years ago. It is estimated that the lower limit of oxygen concentration to support life is approximately 18%. Although the Earth can exist within a wider range of variation, human life cannot.

Over eons of time plant life or the animals that consumed it decayed and their carbon became preserved and sequestered beneath the Earth's crust through pressure, bacterial processes, and heat. Over millions of years these

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[202]Berry, R. J. ed. (2006). *Environmental Stewardship: Critical Perspectives, Past and Present*. New York: T&T Clark International, pp. 70-71.

organisms changed chemically into what we now call fossil fuels. Now, as we burn these fossil fuels, we release these ancient carbons into the atmosphere where they combine with oxygen to create carbon dioxide. As we do so, we change the composition of the atmosphere. The more fossil fuels we burn, the more carbon dioxide we create, and the higher the concentrations of CO_2 in the atmosphere. Although carbon dioxide makes up a relatively small proportion of gases in the Earth's atmosphere (around 1%), it plays a vital role in keeping the Earth warm enough for life. The rise and fall of carbon dioxide levels in the atmosphere is linked to the rise and fall of the Earth's global temperature: as CO_2 concentration goes down, temperature goes down; as it goes up, the temperature goes up.

Carbon dioxide, estimated to be as much as 10% of the atmosphere in the earliest part of the planet's history, was removed from the atmosphere over eons; humanity is increasing the CO_2 in the atmosphere in a matter of centuries. At the beginning of the industrial revolution it is estimated that there were approximately 280 parts of carbon dioxide per million parts of other atmospheric gases. Today the National Oceanic and Atmospheric Administration estimates we are at 386 parts per million and CO_2 concentrations continue to rise at an unprecedented rate of 1.5-2.5 parts each year. In evolutionary terms this is a rapid shift that, if continued unabated, could tax the adaptation prospects of many species.

The debate is over regarding the relationship between human activities and global warming. The debate continues about the relationship between the level of carbon dioxide in the atmosphere and significant thresholds past which weather becomes extremely erratic, we lose the polar icecaps and glaciers around the world, the sea becomes dangerously acidified, and adaptation for all species on the planet becomes more challenging. Levels in the range of 450 and 550 parts per million are being used in international climate talks to indicate the limit humanity should set. These are levels the Earth is expected

to reach by the mid-21st Century if dramatic action is not taken, and some believe even if dramatic action is taken. Recently leading scientists[203] warn that we are already past the safe upper limit of atmospheric CO_2 which they now estimate to be 350 parts per million. Out of this vortex of relationships the future is being forged.

Some relationships are negotiable, for example the relationship between the twinned growth of population and consumption placing demands on the Earth's resources and systems, and the Earth's ability to continue to regenerate, provide new resources, and deal with our wastes. More people on Earth means that we need to produce more food, shelter, clothing, clean water, etc. to meet even our most basic needs. In our current growth-oriented, take-make-waste way of living our lives, as the world industrializes further and affluence rises, humanity demands goods and services beyond these basic needs: we simply "consume" more stuff. The more we consume, the more waste we produce. The more waste that we produce; the more we pollute our air, water, land, and ultimately our own bodies. The more synthetic persistent compounds we use to meet these growing demands, the more substances we emit into natural systems with deleterious effects. When these are substances that nature does not recognize and break down as food, they eventually build up in the food chain, some to levels that are toxic to humans and other species.

We have only one planet and the urban and industrialized way of life that prevails on it has a massive "ecological footprint."[204] An ecological

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[203] J. Hansen (1 and 2), M. Sato (1 and 2), P. Kharecha (1 and 2), D. Beerling (3), R. Berner (4), V. Masson-Delmotte (5), M. Pagani (4), M. Raymo (6), D. L. Royer (7), J. C. Zachos (8) ((1) NASA GISS, (2) Columbia Univ. Earth Institute, (3) Univ. Sheffield, (4) Yale Univ., (5) LSCE/IPSL, (6) Boston Univ., (7) Wesleyan Univ., (8) Univ. California Santa Cruz), (2008). "Target atmosheric CO2: Where should humanity aim? Available at http://arxiv.org/abs/0804.1126. Last accessed on June 13, 2009.

[204] Wackernagel, M. & Rees, W. (1996) *Our Ecological Footprint*. Gabriola Island, British Columbia: New Society Press.

footprint is a way to describe the amount of biologically productive land and sea area needed to regenerate the resources a human population consumes, and to absorb and render harmless the corresponding waste that it produces. Estimates are that:

> The 'ecological footprint' on the earth has become so large that were everyone to achieve the U.S. standard of living, to which many aspire, using current technologies, human beings would need five more planets to sustain them today! If world population increases to 10 billion by the year 2030 or so—only one generation—as is currently predicted, the amount of biologically productive space will fall to 1 hectare per capita, and less than that if humans continue to degrade land and sea space. Reaching the current U.S. standard of living for everyone will then require an additional nine planets.[205]

The relationships between how we live and the Earth's ability to continue to sustain are negotiable. Although we cannot change the chemical and physical limits within which human life is possible, nor can wring out of the Earth's ecosystems more than their capacity to provide, we can change our relationship to these factors by evolving our relationships in our human systems to be able to see and act upon these connections.

The story of un-sustainability tells us that we are dangerously out of balance. In the old story the "web of connections between human activity and nature's systems and the subtle complexities of these intersections," (Goleman, 2009) are indeed hidden. What is hidden from us is by definition, not seen; and what we do not see or acknowledge is difficult to make relevant

[205]These estimates were found in the Encyclopedia of Public Health referenced on Answers.com. Available at http://www.answers.com/topic/ecological-footprint. Last accessed on June 9, 2009.

or meaningful in the activities that make up our lives. We do not relate to them. Out of sight is not only out of mind, it is outside our reality. This is changing. Although the warnings have been raised for at least the past five decades, over the last 15 years the voices telling the un-sustainability story have increased dramatically. The various threads of this story, many recounted in Chapter 3, are coming from multiple sectors, disciplines, generations, faiths, political backgrounds, and from across the world. In mid-2009, conversations about "un-sustainability" and the implicational need for "sustainability" are becoming more prevalent and more commonly accepted and understood.

As the numbers and perspectives contributing to the un-sustainability story grow, the transformational phase in the paradigm shift takes shape. Eco-philosopher, Joanna Macy, refers to this time as "the Great Turning". She comments:

> The Great Turning is a name for the essential adventure of our time: the shift from the industrial growth society to a life-sustaining civilization…
>
> A revolution is underway because people are realizing that our needs can be met without destroying our world. We have the technical knowledge, the communication tools, and material resources to grow enough food, ensure clean air and water, and meet rational energy needs. Future generations, if there is a livable world for them, will look back at the epochal transition we are making to a life-sustaining society. And they may well call this the time of the Great Turning. It is happening now…
>
> Although we cannot know yet if it will take hold in time for humans and other complex life forms to survive, we can know

> that it is under way. And it is gaining momentum, through the actions of countless individuals and groups around the world. To see this as the larger context of our lives clears our vision and summons our courage.[206]

We are still in the very early stages of this transformation. It is all well and good to point out the faults of the old story and to recount the "gloom and doom" of the unsustainable direction it implies, but what does that mean to our lives? What does it mean to be "sustainable"? Goleman (2009) suggests that we need to develop the capacity to see the web of connections between our activities and nature's systems, but what does that mean in our day-to-day lives? How do we actually do that? Especially when our daily lives are still so embedded in systems that emerged from the old story and are still aligned with the very assumptions we now question. What is more, our attention is focused on the seemingly more immediately and daily concerns of feeding our families, keeping our jobs and paying our bills! How do we change stories when the old story still seems to make sense; the danger is not immediate but the costs of change are; and there is great uncertainty about what will be different and what we might have to give up to get to the new story?

The dialogue with practitioners in Chapters 4-7 concentrated on this transformational phase—the movement from articulating what is wrong with the old story to articulating and enacting what the new intelligibility means.

> The critical phase gives way to the transformational phase when the discursive implications of the critical forms are elaborated. As the implicational network is progressively articulated, an alternative system of intelligibility emerges (*B*). As this system is increasingly employed in the "ontology"

[206]Macy, J. (2009), quoted on her website: http://www.joannamacy.net/html/great.html. Last accessed June 10, 2009.

> of the world (for example, in naming and interpreting what there is), its credibility gradually rivals that of Intelligibility *A*: it approaches the status of plain talk or common sense (Gergen, 1994, pp. 12-13).

In Chapters 4-7, I explored ways that the growing implications of "un-sustainability" are evolving into a discourse about *sustainability* in the context of several prominent complex organizations: IKEA, Interface, Nike, Starbucks, and the U.S. Army. I asserted that in the space where the critical phase is turning into the transformational phase, the core tasks in these organizations are "sense-making" and socially negotiating what the term sustainability means in practice. I asserted that sustainability practitioners whether internal to the organization or brought in as external consultants have two powerful tools to help organizations make this transition: stories and action.

SENSE-MAKING THROUGH STORY

We are a story-telling species. We make sense of our world and our place in it through the narrative accounts we share with one another and that we make meaningful together. Sense making is a communal activity. Our stories become intelligible because we have a shared language with shared meanings to render them meaningful. "Meaningful language is the product of social interdependence. It requires the coordinated actions of at least two persons, and until there is mutual agreement on the meaningful character of words, they fail to constitute language" (Gergen, 1994, p. viii). We raise awareness about the flaws in the old story through narrative accounts. Because the connections we need to pay attention to are not immediately visible, we need narrative accounts to reveal and to see them. Through our narrative accounts we connect the dots: we tell a story about ice caps melting, oceans warming, sea levels rising, reefs at risk, water scarcity, climate change, the end of cheap oil, rising population, growing income

disparities, ecosystems collapsing, and the link between security and sustainability. We pull these diverse elements together into one story that conveys the message: this is not sustainable, and we are all part of this context. This is not an easy story to tell and it is not an easy story to hear, but it is a fundamental step in making sustainability intelligible. Unless we give a compelling, even urgent, reason why we need to change the way we think and act, we have no reason to go beyond our current business-as-usual practices, especially if we are relatively successful based on the status quo. We make these arguments through the stories we tell.

For example, in the mid-1990s IKEA was hit with the un-sustainability story through narrative accounts on the part of critics who claimed that the company was producing "deadly, poisoned bookshelves" because formaldehyde off-gas in one of their most popular product lines was found to be beyond legislated limits considered safe. The alarm raised led the company to recall the bookshelves in their inventory and to stop production of this popular and lucrative product line throughout the world. The problem was expensive and time-consuming to solve. It was handled by the company's Quality Department because there was no department to deal with environmental issues; it was considered a product quality issue. At the same time consumers were beginning to ask the company whether IKEA's furniture, the heart of the company's product offerings, was made with sustainably harvested wood, whether their catalogues used paper that was bleached with chlorine, and whether IKEA products were being made by child labor.

These challenges to the way IKEA designed, produced, marketed, sold, and delivered product constituted an invitation for the company to engage in a process of socially negotiating the meaning of new terms and forms. To understand what the growing importance of environmental concerns meant to consumers, and thus to the company, IKEA's leaders sought the help of Dr. Robért, founder of The Natural Step to help them make sense of these new and

rising concerns. IKEA was Robért's and The Natural Step's first client. In his first conversation with two IKEA leaders Robért (2002) determined that the problem that IKEA was facing was "not so much a negative attitude toward sustainability as such but rather the feeling that such issues could hardly be converted in a meaningful way into everyday business practices."[207] Robért recalls:

> I knew that I knew less about furniture than anyone else in IKEA's management team (perhaps the leading team in the world in this field), so humility came naturally to me in this situation. What could I possibly say to these people that would really help them to provide furniture to people sustainably?...It probably…helped that I had told them all, up front, that I needed to learn just as much as they did, and that this was about a serious dialog rather than about teaching. So I talked about systems thinking in general…I talked about the need for teams to agree on overall principles to be able to perform as well as individuals when it came to systems thinking and systems planning. And I went through evolution, drawing my naïve symbols for the developing species on a white board…[208]

Robért invited IKEA's management team into a dialogue and he engaged in narrative accounts about thinking in systems, the laws of thermodynamics, the way that humanity is reversing evolution by taking hydrocarbons and returning them to the atmosphere, and how the system conditions were derived as a conclusion based on these stories. IKEA began to experiment with addressing these emerging issues from a systems perspective. One of the ways

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[207]Robért, K.H. (2002). *The Natural Step Story*. Garbiola Island, British Columbia: New Society Publishers, p. 76.
[208]Robért (2002), pp. 76-77.

the company did this was to create a training program—raising awareness through narrative accounts. As IKEA and The Natural Step organization worked together on this training program to make sustainability intelligible to others within the IKEA system, Robért and The Natural Step organization also learned how to better translate insights about sustainability into meaningful terms and forms:

> The systems perspective had become so much richer with the concrete inputs from IKEA, and it had started to evolve into a sort of overall description to the game called 'sustainable development'…It turned out to be more fun to play the game now, when the players shared the same idea of what it was all about. Evidently it was more fun to apply the system conditions to tackle problems upstream than to just talk about one problem at a time as if there were no principle connectedness between them. And this shared structuring of thoughts was obviously helpful for community building (Robért, 2002, p. 81).

The power of Robért's approach was telling the story of sustainability as he had come to understand it and inviting dialogue with IKEA's management team so that they could negotiate together how sustainability fit with IKEA's story. Every organization has a story some elements of which remain constant over times while other elements evolve. When confronted with the un-sustainability story, many organizations become defensive. The fundamental assumptions that are being called into question by this story form the foundation of modern industrial society and its institutions. At first it seems that the organization's story, its very reason for being is under attack. Every organization examined in this study is part of the take-make-waste system alluded to by Ray Anderson, founder of Interface. Every one of them is embedded in systems that are not sustainable and are engaged in activities

that are not sustainable. The negation of key assumptions in the old story can easily feel like an attack on the organization's story. That said organizational stories are social creations that can be renegotiated.

Nowhere is this more evident than in Nike's story. Much like IKEA, Nike came to the sustainability conversation because of a new narrative, this one developed by activist organizations that attacked Nike for the "slave labor" practices of "Nike factories". These narrative accounts found resonance among consumers who took action by boycotting Nike products. It didn't matter that the factories were actually not owned by Nike, or that other major companies such as Adidas and Reebok had products produced in the same factories. For a time Nike became the social poster child for all that was wrong with the way products are sourced in a globalized world. This image was so removed from Nike's story about itself that it would not be exaggerating to say that the company suffered a time of *story dissonance*.

In reaction, when the Nike Environmental Action Team was asked to figure out what environmental issues the company might need to pay attention to so it wouldn't get hit again like it had on labor practices, it called the initiative something totally new to the culture: Shambhala, a term from Buddhist mythology. This initiative was going to signal a very different approach for the company. Through considerable effort – four four-day offsites in the course of nine months – approximately 100 Nike employees from every part of the company began the process of socially negotiating what sustainability meant. It became a privileged conversation restricted to this Shambhala community, leaving much of the Nike community outside. Without a bridge to negotiate meaning with key Nike leaders, concern and suspicion emerged: the company was already in trouble and now this group was raising questions that went to the heart of company's business. Shambhala was foreign; it was not intelligible. It didn't appear to resonate with the Nike story. As recounted in Chapters 4-6, Nike's team rose to the challenge, moved

beyond the backlash from Shambhala, and created a story in keeping with Nike's image of itself: an organization taking leadership and delivering excellence.

In the process of making sustainability relevant through narrative accounts, the very story of Nike has been transformed. Nike is not just about high-performance product; it is about *Considered* product – an innovative design platform that considers a product's environmental and social impacts. It is an industry leader in addressing climate change. It is a fierce competitor that understands that to really address the social and environmental issues that are endemic to the footwear and apparel industries, it needs to collaborate and dialogue with its competitors as well as its suppliers and other stakeholders, and to seek solutions together. As a company devoted to sport whose products are predominantly made by young women in third world countries, it is focusing its philanthropic activities on using sport as a way to help women and girls in those countries gain self-confidence and empowerment. It is an outspoken global citizen that is choosing to use its size and influence as a force for positive change.

This shift in stories from "the business of business is business" to "sustainability means that business is about more than business" can be seen in other company's stories as well. Starbucks is not just a purveyor of high-quality coffee and a café experience; it is a force for change in the world on a Shared Planet. Interface is not just the largest commercial interiors company in the world; it is a restorative company modeling what the prototypical company of the 21st Century means. The U.S. Army does not just defend and protect the country through its military might it is a steward of the air, land, water and well being of the communities it touches in the process. These narrative accounts solidify what sustainability means for players inside the organizations. They also convey what sustainability can mean to other

organizations that are just beginning to negotiate the meaning of these new terms and forms.

When we started out in our practice fifteen years ago the un-sustainability story was just becoming more clearly articulated, and the story of what it meant to organizations was nearly non-existent. Through our studies and experience, we innately understood the power of good storytelling, so we developed stories. We wrote case studies and books filled with stories. When we go into a new organization, we tell these stories because one of the ways to see what is possible is by hearing stories about what others are doing. Today stories of how organizations are expressing the meaning of sustainability are abundant and easily available. The more stories that emerge and are told, the more "normal" sustainability becomes; the more normal it becomes, the easier it is for the next organization to see its relevance. The more organizations that do so, the more stories there are to tell. The new story becomes more intelligible through the stories we tell about it.

SENSE-MAKING THROUGH ACTION

In our practice we focus on making sense through action in multiple ways. The first is using narrative to provide examples of what actions could make sense for an organization to take. We do this by telling stories about what other companies do and what it means to them. The second is ensuring that we engage the organizations we work with in a continuous dialogue between learning and action. We do this by designing workshops that are a balance of presentations, reflection on connection, and actions. The presentations tell stories about global trends, frameworks to think about sustainability, how organizations learn and change, and practices that other companies have in place. The reflection on connection asks organizational players to examine the relationship between what they learn in the presentations and what it means to their organization. We then move

participants in the workshops directly into action, looking at what the first steps are that the organization needs to take. The third way we use action is by coaching organizations about learning from the results of their actions and developing a continuous learning/continuous improvement cycle for more sustainable practices.

One of the most effective ways to help teams move into action is by helping them draw a map of their system so that they can see the connections and relationships between what they do and what we have been talking about under the term "sustainability". This process is described in more detail in Chapter 7. We find that this tool helps create a nexus between storytelling and action. The map helps teams to illustrate the story and to orient themselves in their field of action. It helps them to focus attention, orient sustainability issues to specific functional areas and systemic processes, and decide what direction to go in and what pathways to use to get there.

Maps are valuable because they orient us. Great narrative accounts about why sustainability is relevant to us and why we are committed to being more sustainable are important, but they do not create a sustainable world. We need to get into action for that to happen. Our story needs to "drive changes in commerce and industry as well as in our individual actions and behaviors" (Goleman, 2009). In the 1939 film, the *Wizard of Oz,* Dorothy knew she had to get to Oz to get home but she needed a yellow brick road to get there. The reconnaissance unit mentioned in Chapter 5 remained lost until someone pulled out a map to provide orienting cues. Ray Anderson knew he wanted Interface to change course. He also knew he needed a map to help him see and to help others in his organization see where to focus attention and resources. Our maps orient our actions in relation to the terrain we are in and the direction we want to go. Sustainability feels like a new and unfamiliar terrain.

Drawing a map of an organization's system that includes its connection and relationship to the lithosphere, the biosphere, and other human systems normally viewed as "outside" the organization, is a tool that helps us develop the capacity that Goleman (2009) calls for: to see "the hidden web of connections between human activity and nature's systems" and specifically to make visible the web of connections between the activities conducted by our organization and the sustainability of the global system. The map provides new orienting cues; for example:

- The connection between our dependence on fossil fuels and climate change;
- The relationship between the way we design, manufacture, transport, and use our products and
    - The increasing concentrations of toxic substances in nature, including in our bodies,
    - The growing mountains of waste in our landfills, and
    - The depletion and degradation of ecosystems;
- The connection between the way we source our products and the health and well-being of communities nearby and remote; and
- The fact that there is no "away" – what we do to the environment, we do to ourselves because everything is related in an interconnected system.

One of the things we learn by drawing a map of the system is that there are areas where we can act today to make a difference, areas where we can begin to focus. We can view the challenge before us as a journey that we can take step-by-step, learning and improving *en route*. We can also see that the reality of the new intelligibility is something that we cannot create on our own. We are part of interrelated systems the sustainability of which require coordinated action, collaborative effort, and new socially negotiated terms and forms on systemic and global scales.

Once we are oriented and know where to focus, we can get down to action. We have found that most organizations choose similar areas to focus sustainability activities. These are generally activities related to:

1. How they use resources and materials;
2. The waste and emissions they produce or cause to be produced;
3. The way they design, develop and specify product;
4. How they manufacture or source product;
5. How they treat people or require that sub-contractors treat people;
6. How they distribute, transport, and deliver products; and
7. How they give back to communities and to global society.

Ultimately there is nothing mysterious about how to get into action in these focus areas. In the words of the famous Nike slogan, you "just do it". Getting things done is familiar territory that all the organizations featured in this study know well. One of the challenges for the sustainability practitioner is to help organizational players see the relationship between their existing knowledge, creativity, and experience and their ability to solve the problems that emerge from this new intelligibility. Solutions may not be immediately self-evident and the approach to problems and solutions may need to be experimental at first. However, most organizations already have, or can obtain, the skills and wherewithal make real progress.

Once the organization has set out focus areas the next steps that need to be taken play to innate strengths organizations already possess such as setting goals, developing strategies to reach those goals, setting out metrics by which to assess performance in those strategies, developing and implementing action plans, measuring the results, and setting out how to improve performance over time. For example, zero waste is a goal that many organizations that enact sustainability have set out. In light of that goal, the

next steps can be logically and easily organized into very specific actions, such as:

1. Conducting an audit to see what waste you produce, how much you produce, what type of waste it is, and how you currently dispose of it;

2. Developing specific strategies to reduce or eliminate the waste (for example, recycling, reusing, reducing or eliminating material, or rethinking the use of the material in the first place);

3. Developing action plans with specific objectives, timetables, actions, and metrics attached to them;

4. Implementing the action plans;

5. Measuring performance and evaluating results; and

6. Putting plans in place to make improvements in the next planning cycle.

When a consumer product organization decides to eliminate substances that are known or suspected to be toxic from its product line, it begins by examining what substances are contained in each of its products, determining which are known or suspected to be harmful, identifying alternate substances that can be used to achieve the same product requirements, changing the product specifications and guidelines, and working with suppliers to meet these new product specifications. Ultimately the process becomes one of continual innovation and improvement.

When an organization decides to reduce the greenhouse gas emissions associated with its operations it begins by taking an inventory of those emissions, determining what activities are associated with them, looking at

where and by how much they can be reduced or eliminated, setting goals to achieve those reductions, and putting actions in place to change the activities that produce the emissions. Ultimately the process becomes one of continual innovation and improvement.

Although in each of these areas there is a considerable amount of thinking, learning, planning, doing, measuring, and engaging in a continuous cycle of improvement, there is no magic. The institution of sustainability practices is the process of rethinking how we do everything and how everything we do is related to creating a sustainable future, and creating a new business-as-usual that takes these relationships into account. It is as easy and as difficult as that. To do this requires creating new meaning in all of the organization's relationships: with suppliers, investors, customers, employees, competitors, critics, and communities that are affected by the organization's business. In the end, the transformation phase of moving from the old story that is leading in an unsustainable direction to the new story—what Macy calls the shift from the industrial growth society to a life-sustaining civilization—is not something that can be done by just one organization. It is about relationships. How can any organization be sustainable in an unsustainable world?

The social construction of sustainability is going to require countless individuals and organizations around the world acting in accord with a set of new assumptions and perceptions that are now just beginning to be more widely accepted. It has taken between four and five decades to articulate the un-sustainability story and to begin transforming the implications of that story into a coherent system of meaning. It may take several decades more for us to get to the point where our actions accord with that system of meaning. According to a growing number of narrative accounts from the scientific community, we may not have another four or five decades to make the great turning. Brian assures me that the shift can happen more quickly than we

imagine; that the changes we need could indeed occur exponentially, that humanity can figure out how we can go on together, not only with one another, but also in balanced relationship with the rest of the natural world. "The most remarkable feature of this historical moment on Earth," Macy (2009) reassures us, "is not that we are on the way to destroying the world-we've actually been on the way for quite a while. It is that we are beginning to wake up, as from a millennia-long sleep, to a whole new relationship to our world, to ourselves, and each other."[209]

HOW ARE WE TO GO ON TOGETHER?

I began my study with this question. It has been my touchstone throughout. Now, in retrospect, I ask myself: what am I really asking, who is the "we"? The fact is, even the transformation phase of the movement from the old story to the new may well extend far beyond my lifetime, assuming humanity succeeds in making the transition. I may never know whether this quest is more likely to succeed or not. Certainly at some point I will no longer be part of the "we" that is going on together.

I personally believe humanity is in a race against time for the wellbeing of future generations. The scientists associated with the Intergovernmental Panel on Climate Change caution us that no matter what we do today, the world will need to adapt to changes in our environment brought on by a warming Earth. We do not know how severe these might be or what damage they may do in what time period, but some changes have already begun. The actions we take today, however, are expected to do little to alter the climate dynamics of the next few decades: change has already been put in motion. The choices we make today and the actions we put in place are not for us, they are for the generations that will follow – for our grandchildren, great grandchildren and beyond. What we do or don't do today could well mean the difference between a vibrant world of possibilities and a degraded world of

[209]Macy (2009)

struggle for them. That is an evolutionary challenge: making decisions on a global scale that mean altering our way of life today for the sake of generations yet unborn. How do we even imagine that?

On June 2, 2009, a prime time documentary on a major U.S. network – the American Broadcasting Company (ABC) – called *Earth 2100,* explored what a worst case scenario might look like if humanity does not address the challenges of un-sustainability, particularly climate change, overpopulation, and our dependence on and use of fossil fuels. The scenario was illustrated by the life of an imagined storyteller by the name of Lucy, who is born in 2009. Lucy tells us the story of key events in her life in the years 2015, 2030, 2050, 2085, and 2100. Although Lucy survives through this period the civilization she was born into in 2009 does not. Premised on the idea that to change the future, we must first imagine it, the ABC technology & science website explains that the program explores:

> [A]n idea that most of us would rather not face—that within the next century, life as we know it could come to an end. Our civilization could crumble, leaving only traces of modern human existence behind.
>
> It seems outlandish, extreme—even impossible. But according to cutting edge scientific research, it is a very real possibility. And unless we make drastic change now, it could very well happen.
>
> Experts have a stark warning: that unless we change course, the "perfect storm" of population growth, dwindling

resources, and climate change has the potential to converge in the next century with catastrophic results.[210]

To change the future, we must first imagine it, and imagination is one of the unique gifts and attributes of our species. These are evolutionary challenges:

- To imagine a plausible worst-case scenario into the far future and to make decisions and take actions to avoid it;

- To imagine a plausible best-case scenario for that same far future and to make decisions and take actions to create it, even if we will not witness or participate in that future story; and

- To act now, in the face of incomplete information and uncertainty, even though *we* will not be the beneficiaries of our decisions and actions.

Are there any signs that we will step up to this evolutionary challenge? I take heart that the un-sustainability story is being articulated with more frequency in popular media: newspapers, magazines, books, movies, and television and the discourse is being multiplied through electronic media. *Earth 2100*, for example, is a program that we couldn't even imagine airing in prime time on ABC 10 years ago. Brian and I often refer to this diffusion of an idea or an innovation as the "popcorn" effect. When heat is applied to popcorn kernels it takes some time before you hear the first "pop". As the heat continues you eventually hear another and then another. At some point the kernels are heated to a tipping point and they all seem to explode at once. If you haven't been listening to or for the early pops the explosion may seem

[210]Danner, A. (2009) "Earth 2100: the Final Century of Civilization?" Available at: http://abcnews.go.com/Technology/Earth2100/story?id=7697237&page=1. Last accessed on June 10, 2009.

quite sudden and dramatic. The change seems to occur overnight. Although the early pops of the un-sustainability story were heard decades ago, today this story seems to be exploding everywhere every day. As it does it is becoming a more normal part of our daily discourse.

One hopeful sign is that we are now beginning to hear an increasing number of pops about a sustainability story. This story offers a different vision of the future than the dystopian implications of the un-sustainability story. It reminds us that the movement from one intelligibility to another doesn't occur simply because we see the fault lines in the old story. We need to imagine the implications of those fault lines drawn out to their logical conclusion *and* develop narrative accounts and a shared language about the shape of the future we want and the actions we can take to get there. The transformation starts to take hold when we begin to align our actions and relationships to these narrative accounts and we start to tell the story about how and why this course of action makes sense.

How are we to go on together? After six years of research, writing, and practice I don't know if I am any closer to an answer that sits well in my heart. On the one hand, I am not certain that we will as a species step up to this challenge unless we are forced to do so by environmental catastrophe, and that may mean that we have already done irreparable damage or crossed thresholds beyond which we can't return. On the other hand I am privileged to work with sustainability practitioners who are playing a vital role, at once humble and magnificent, in helping their organizations make sense of and enact a new intelligibility. As practitioners, we can see organizations begin to align the activities of their myriad relationships with a new way of seeing the world. They do this step by step, practice by practice, relationship by relationship, and in the process they further articulate and create this new story.

"In the end," Gergen (1994) reminds us, "all that is meaningful grows

from relationships, and it is within this vortex that the future will be forged." Humanity is standing at the crossroads and there is an almost irresistible inertia to keep us going down the path we are on. Will we be able to shift direction and build an irresistible momentum that takes us down a different path to forge a sustainable, vibrant future? That is our evolutionary challenge; it is the story we are still writing together.

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