Reflections

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Searching for Sustainability:
No Quick Fix

By John R. Ehrenfeld

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In the face of alarming environmental and social imbalances, the growing push for sustainability has given hope to many thoughtful practitioners. But John Ehrenfeld, a leader in the emerging field of industrial ecology, questions the conventional approach to "sustainable development." Creating true sustainability, he argues, requires radical solutions, not quick fixes. The process begins by examining our own behaviors and assumptions regarding consumption, personal satisfaction, and technology. Here, in the first in a series of articles on this crucial topic, Ehrenfeld suggests ways to achieve a deeper vision of sustainability.

— *Paul M. Cohen, Senior Editor*

Management literature abounds with articles making a business case for "sustainability." Business pundits trumpet the great opportunity for enterprises to find the few places they profitably can bundle social goods into their markets.[1] Socially responsible investing has become the latest mechanism to use the power of the market, in this case the financial markets, to punish the "bad" guys and reward those firms that are doing the "right" thing. One problem with all of these practices is that they have little or nothing to do with creating true sustainability. In most cases, they will only temporarily slow down the process of environmental degradation and global social inequity. In short, the best that most businesses today can claim is that they're doing less harm than they might. But halting the environmental degradation and growing social inequity between the world's haves and have-nots will require fundamental change in the way that businesses and societies work.

How will this come about? I don't claim to know the answer. But in the pages that follow I will outline some emerging tools and opportunities that may hasten that change. I'll also describe what I believe are the limits of our current approaches to sustainability, and propose an alternative perspective that addresses underlying causes rather than temporary relief of the symptoms of our problems. I will conclude by offering a new strategic framework for guiding our personal, social, and economic decision making.

Current Approaches to Sustainability: Solution or Avoidance?

The publication of the 1987 Brundtland Report[2] popularized the concept of sustainable development, which it defined as development that "meets the needs of the present without compromising the ability for future generations to meet their own needs." Five years after publication of the report, the largest assemblage of global leaders in modern history met in Rio de Janeiro to ink an agreement to implement the report's many concepts and practical approaches. Rio

represented a major shift away from a narrow focus on environmental issues and toward a balance that also included the social and economic. Soon thereafter the idea of the triple bottom line – economy, environment, and social equity – was promoted as a metric by which businesses could measure their contribution to sustainable development.[3] Global business followed with the notion of eco-efficiency – basically, a promise to deliver more value to the customer at lower environmental cost.
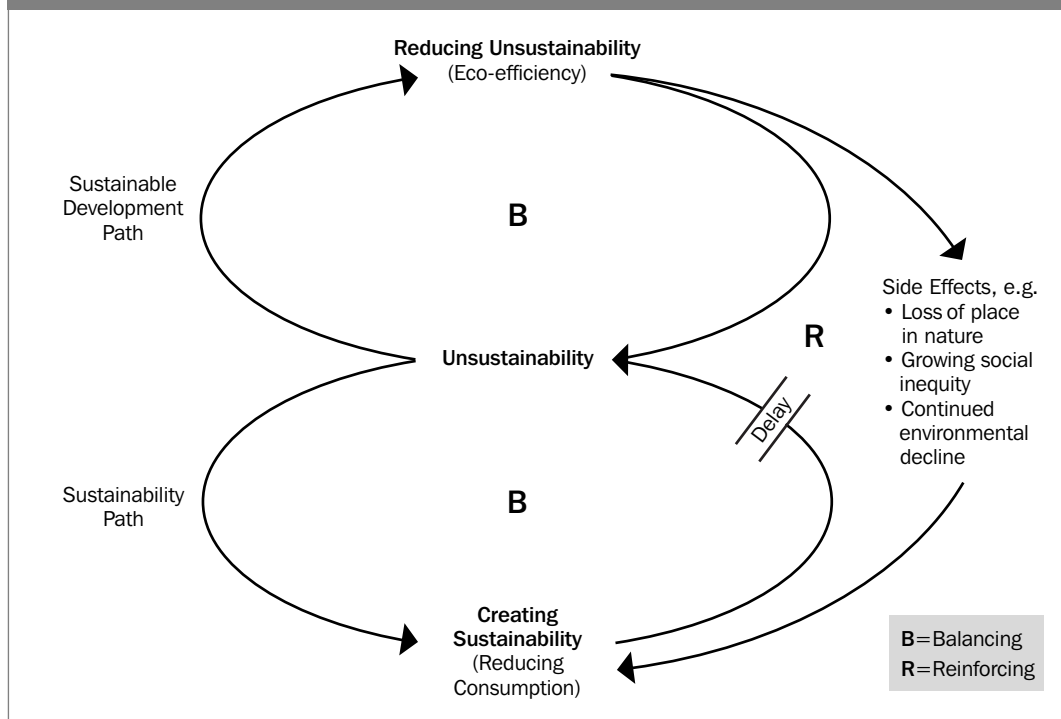
These and other measures that followed the Brundtland Report have certainly helped reduce the *pace* of unsustainability, but the absolute magnitude of the problems on a global scale has increased. Some economists argue that raising efficiency has exacerbated the situation by generating more wealth – and more consumption – in the economies of affluent nations. Few companies or institutions have addressed one of the root causes of unsustainability – our addiction to consumption (see Figure 1). Rather, virtually all suggestions by the powerful institutions of the modern world for solving the sustainability challenge are based on quick technological fixes, including eco-efficiency[4] (see sidebar, "Confronting Technology"). It is a classic case of *shifting the burden*[5] – focusing on the symptoms rather than attacking a problem at the roots. The underlying condition often reasserts itself in even more-confounding ways; as a result, our capacity to change is undermined by the illusion that we are addressing our problems, when in fact we are not.

True Sustainability – A New Game

Achieving positive results requires drastic action. We need to shift from our reductionist, problem-solving mode to one that is driven by a vision of a sustainable future we all share. We need to reflect carefully on our current state of affairs and replace ineffective ways of thinking and acting.[6] The distance between the vision I will present and our current reality is vast; it is important that we do not let the gulf become overwhelming.

Figure 1: The Addictive Nature of Consumption

Most attempts to reduce unsustainability have simply shifted the burden and drawn attention away from the root causes of the problem – our addiction to consumption.

Confronting Technology: The Great Enabler

As the driving force of modern society, technology has become the chief means of achieving most of our business, social, or personal objectives. I believe that technology is also one of the great enablers of our addiction to consumption. It shapes the tools and artifacts we use as well as the cultural mindset that produces unsustainable behavioral patterns. In a culture addicted to consumption, technology is our cocaine, and unless we admit this and learn to kick the habit, we're unlikely to change our ways.

Beyond its direct environmental impact, technology also has secondary effects on the environment and our relationship to it. To understand the world, we must stand outside of it, according to Descartes and other Enlightenment thinkers. Inexorably, this characteristic stance of modern science has eroded our sense of being as a part of nature. Technology brings with it a worldview that sees everything "out there" as having value only or predominantly through its functional, instrumental purposes. But this modern way of being is a trap in that, in our striving for satisfaction, it stifles the qualitative characteristics of what it is to be human. (Erich Fromm has argued persuasively that we have moved from a "being" mode of life to a "having" mode of life.[7] In the latter, our identity and self-worth become conflated with all the material objects we acquire in our attempts to find satisfaction.) Dignity, authenticity, and autonomy give way to instrumentality and consumption. In short, we have lost our sense of what it is to be human.

Finally, technology has a tertiary effect on our culture. The late philosopher Hans Jonas has argued that modern technology renders ethical action and responsibility problematic.[8] The moral consequences of human action, in the times when notions about responsibility were shaped, always showed up proximately to the action. Responsibility could be defined in practical terms as avoiding harm. But as never before, technological activities – such as pesticide use, industrial emissions, or long-range weapons – show up in spatially or temporally remote, unanticipated, and profound ways. Until individuals and businesses recognize and act to avoid the deeper impacts of their actions – for instance, the climatological effects of their automobile and industrial emissions – deep change will be impossible.

Almost completely missing from the problem-oriented activities of today is a clear notion of what sustainability is. "Sustainable development" is simply an extrapolation of the past, except that we intend to be more efficient and fair in going about our business. It is only about process with no visionary end in sight.

I define sustainability as *the possibility that human and other forms of life will flourish on the Earth forever*.[9] It's important to examine two key words in that definition. *Possibility* is about bringing forth something we desire so as to create a new reality. Possibility enables humans to visualize and strive for a future that is not available to them in the present.

Ortega y Gasset captured the essence of possibility when he said, "Life is a series of collisions with the future; it is not the sum of what we have been, but what we yearn to be."

> *"It is difficult to desire what one cannot imagine as a possibility."*

Flourish brings life to this definition of sustainability and is the threshold through which people can create their own image of what their world would be. Every culture and every age has conjured up images and sounds of flourishing. In our own time, the visage of smiling, happy infants may be an iconic example from nearly any culture on the globe. But all too few of us live in circumstances where those precious moments can be evoked again and again. Doesn't the above definition suggest something quite different than does the notion of sustainable development? In the Brundtland version, sustainability appears in the form of an adjective. The noun is still *development*. In this new form, sustainability becomes the noun, the subject, the focus – quite a difference, especially because we have become accustomed to thinking about development as continuous growth. Sustainability and unsustainability are not just two sides of the same coin. They are categorically different. Unsustainability is measurable; it can be managed and incrementally reduced. But sustainability – the possibility of flourishing in the future – is aspirational. As Amartya Sen, the economics Nobelist said, "It is difficult to desire what one cannot imagine as a possibility."

In short, creating sustainability is not the same as reducing unsustainability.

Sustainability by Design

Nevertheless, it makes sense to remove the causes of unsustainability. That is the underlying rationale for technological innovation, social revolution, psychotherapy, environmental legislation, and other change efforts. But these solutions usually build on past experience, in ways that maximize our preferences or ameliorate current problems. There is little *possibility* in this way of being; like a well-programmed computer, we always come up with the same answer given the same set of inputs.

Fortunately, there is another road to sustainability. But it comes in a very different model of individual and social action. This way conceives a world that brings *flourishing* into our everyday activities instead of one that sees life as a series of problems to overcome. Design creates something that did not exist before. It is what great artists, writers, musicians, teachers, and political or social leaders do: they bring their future visions into being. They make metaphorical jumps that allow them to transcend the limits of commonplace rationality.

Flourishing will come only if we pay close attention to three critical domains that have been dimmed in our consciousness by the forces of modernity:

- our sense of our place in the natural world – the natural domain;
- our sense of ourselves as human beings – the human domain; and
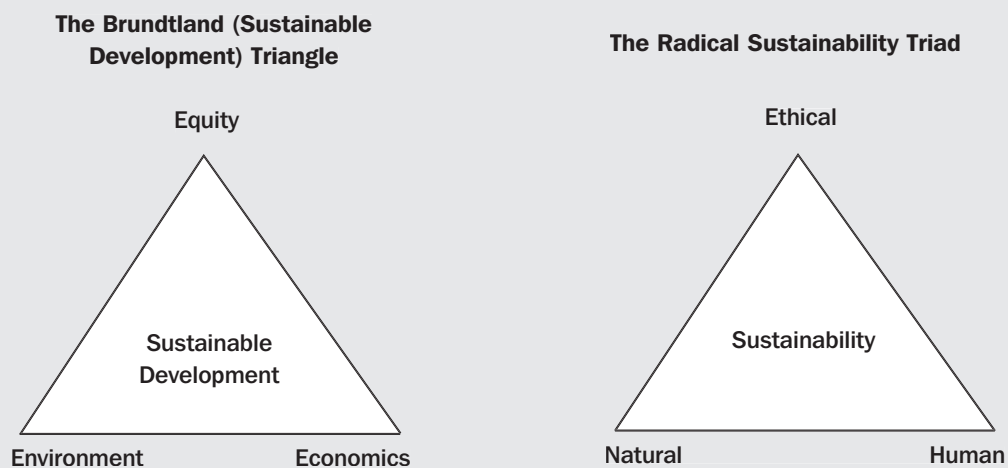- our sense of doing the right thing – the ethical domain.

These three aspects of sustainability allow us to reframe the triple bottom line outlined by the Brundtland Report (see sidebar, "Reframing the Triple Bottom Line"). They can form the framework for the redesign of tools, infrastructure, and social institutions, and enable us to transform living from its unsustainable path to one that brings the vision of flourishing "down to Earth." All of which can increase the likelihood that our designs will work the way we intend them to and also help us identify the causes of our problems.

Building the Real Business Case for Sustainability

The change required means starting at the deep-rooted structure that drives business culture. It is encouraging that many leading practitioners in the organizational learning community,

Reframing the Triple Bottom Line

To achieve true sustainability, business should shift from ameliorative strategies based on the Brundtland strategic triangle to new strategies based on the radical sustainability triad.

The Brundtland (Sustainable Development) Triangle

Equity

Sustainable Development

Environment   Economics

The Radical Sustainability Triad

Ethical

Sustainability

Natural   Human

I replace the term environment with natural because it connotes the holistic-systems sense of the world in which we live. Likewise, it is important to look beyond economics if we are to turn attention to the human. Economics is important in understanding the metabolism of human societies, just as ecology is important in the case of natural living systems. But as a normative model, economics does not provide a roadmap for sustainability.

Finally, I believe the equity apex must give way to the more deeply rooted ethical. This encompasses collective concerns like equity or justice, as well as classic moral notions like responsibility. Neoclassical theory claims that free markets are the most efficient means of maximizing satisfaction, given an initial distribution of wealth, but says nothing about the morality of that initial distribution. It always takes some extra-market intervention to shift the distribution. Government policies in liberal, democratic states generally have been that instrument. Business as an institution has focused on creating the rules for maximizing profits rather than taking a stand on distributional or intergenerational equity.

Clearly business cannot redress equity failures all by itself. This institution, like most others in free–market–dominated economies, focuses first on efficiency. But the current emerging notion of corporate social responsibility is an encouraging sign that business may be starting to work on its ethical processes.

within and outside of firms, are focusing on sustainability as an objective, but they are largely limiting their efforts to what can be done within the boundary of the firm. They overlook the fact that every worker arrives at the office or plant from a home within a community within a larger society, and imports the elements of the larger cultural structure. In the case of sustainability, this means that change within the firm must be built on change in the larger society outside of nominal company boundaries. The work of change agents inside and outside of firms is going much too slowly to overtake the magnitude of unsustainability. The growing magnitude is due, I believe, to a failure to recognize that sustainability rests on a system much larger than the firm.

If business as an institution – the most powerful one on the globe – truly cares about sustainability, then it must begin to move outside of its boundaries, and interact with society at large, where change at the cultural level needs to come forth.

The most important change must come at the level of deep-seated societal structure and mindset. For example, my colleague Tom Gladwin, University of Michigan Professor of Sustainable Enterprise, has classified some 20 unsustainable characteristics that underlie social and individual activities in modern industrial societies.[10] (See Table 1.)

Table 1: Elements of an Unsustainable Paradigm			
Cognitive	**Worldview**	**Contemporary Norms**	**Psychological**
Reductionist	Atomistic	Efficiency	Repression
Proximity	Mechanistic	Quantitative	Denial
Simplicity	Anthropocentric	Secularism	Projection
Certainty	Rationalistic	Narcissism	Rationalization
Discrepancy	Individualistic	Techno-optimism	Insulation

This table is constructed from information in the figure "Sources of Unsustainable Thinking" (Gladwin, Newburry, et al. in Bazerman, Messick, and Wade-Benzoni 1997, 239).

Some of the items on Gladwin's list, like "proximity" (our tendency to perceive only what is close at hand), or "discrepancy" (our need to be jarred by our senses), refer to our cognitive structure and the way we perceive the world. Others, like "individualistic," reflect the cultural worldview that started with the Enlightenment. Sociologists refer to these kinds of characteristics as features of the paradigm by which we live our lives. The third set of characteristics reflects contemporary norms. For instance, our compulsion to quantify the world around us is tied to our need to be in control. And last, Gladwin points to a set of psychological ways we defend ourselves from anxiety. In the context of unsustainability, the anxiety springs from a sense that as individuals we lack the competence to produce happiness, or that the satisfaction we seek is always just beyond our means to produce it. Denial is the single element most illustrative of our current dilemma; others include "repression" and "rationalization."

Contrast Gladwin's portrayal of the unsustainable mind of today with that in his alternative, sustainable set. (See Table 2.) I believe the two sets of cultural traits provide a conceptual roadmap for where we are, and where we must go if we are to achieve our espoused goal of sustainability.

To achieve true sustainability, I believe we must follow two parallel paths. First, we must change the paradigms that guide our business and environmental thinking. This process requires replacing the elements of an unsustainable social paradigm with a new set of culture-shaping beliefs and norms. Second, we must directly question the role of technology and

develop ways to produce new means for satisfying the needs of both human and nature. Our artifacts need to be designed to support conscious choice and reflective competence rather than to induce blind consumption. They should produce long-lasting human satisfaction so that addiction to consumption will abate. We will be able to flourish simply by living life as we encounter it.

A Tool for Change: Industrial Ecology

One tool for changing our relationship to technology is the emergent field of industrial ecology. In its simplest form, industrial ecology suggests that societies built around principles derived from ecosystem properties and dynamics might be sustainable in the same sense that ecosystems are. For instance, the closed-loop webs in an ecosystem take little out of their surroundings and put back little as wastes. They naturally recycle almost all materials used in

Table 2: Elements of an Sustainable Paradigm			
Cognitive	**Worldview**	**Contemporary Norms**	**Psychological**
Interconnected	Holistic	Equity/Justice	Remembrance
Distance	Organic	Qualitative	Avowal
Complexity	Eco-centric	Spiritualism	Internalization
Uncertainty	Intuitive	Altruism	Accurateness
Graduality	Communitarian	Techno-skepticism	Sensitization

This table is constructed from information in the figure "Moving Towards Sustainable Thinking" (Gladwin, Newburry, et al. in Bazerman, Messick, and Wade-Benzoni 1997, 262).

their metabolism. But though materials recirculate in ecosystems, they generally make only one pass through human systems. Thus, one application of industrial ecology is the development of lifecycle analysis tools and the design and management of products and services from a comprehensive lifecycle perspective – from extraction of raw materials to disposal of used products. This approach yields a better understanding of the relationships between socioeconomic features of modern societies and their material and energy metabolism. For example, many of the products we use, from car parts to computer printers, would be designed to be reused through recycling and remanufacturing.

Beyond the analytic tools, industrial ecology provides a new set of beliefs and norms, also based on ecosystems, at least in a metaphorical sense. Ecosystems are seen as complex, self-

In both human and natural systems, sustainability is an outcome of relationship among the parts.

organizing, open systems out of which integrity, flourishing, resilience, or adaptability emerge as properties of the systems as wholes. In both human and natural systems, sustainability is an outcome of relationships among the parts. However, the notions of interdependence and interconnectedness inherent in natural systems are very different from our current cultural norms. We almost worship independence and autonomy as social norms. The idea of competitive markets implies a predator-prey relationship among producing firms. Ecosystems have predator-prey aspects to be sure, but they also display many forms of mutualism and symbiosis.

Replacing the Old Paradigm

Thinking with a different set of beliefs and norms more aligned with sustainability should bring about new practices over time. A comparison of Gladwin's two tables finds that the concepts of industrial ecology counter many of the unsustainable elements: interconnectedness in opposition to reductionist, complexity in opposition to simplicity, and so on.

Executives often say that they cannot unilaterally embrace sustainable practices, even as they claim that they would like to. Why then not change the rules of the game they play, taking a lesson in cooperation from industrial ecology? Together, powerful forces in industry can change the nature of competitive strategy; in today's political economy, firms create their own groundrules through their influence on governments. Why not change the way profit is calculated at the level of the firm, and how gross domestic product (GDP) is measured at the societal level? For example, an environmental group, Redefining Progress,[11] has developed an alternative to the conventional GDP called the Genuine Progress Indicator (GPI). Rather than add the costs of crime, pollution, family breakdown, and other societal "bads," this metric subtracts those costs from the aggregate index. According to the GPI, aggregate well-being in the U.S. leveled off in the 1970s. Similarly, the social costs of polluting or depleting a natural resource could be treated as a company's internal costs of doing business, rather than allowing firms to externalize these real costs to society.

Businesspeople complain about unpredictability in the regulatory environment, claiming, "just tell us what the rules are and we will learn to play and win in a new game." But when push comes to shove, this claim rings hollow as judged by persistent obstructionism to new forms of environmental and financial regulations designed to promote sustainability. If the world's leading firms would create a coalition to change the formulas used by the financial markets to determine success and to influence government and independent agencies to

change the rules, a new sustainability win-win game is possible. The World Business Council for Sustainable Development (WBCSD)[12] is a coalition of approximately 170 leading international firms dedicated to promoting sustainable development. Imagine the impact if the WBSCD called for such a move – pushing for true sustainability rather than settling for eco-efficiency.

Industrial ecology offers alternatives to many (though by no means all) of the unsustainable elements in the table. In addition, a shift from the so-called "sound science" stance to a more precautionary process would reduce the potential for unintended but unsustainable outcomes. Today, the approach is the opposite of precautionary: businesses claim they should be able to put anything into the market that cannot be *proven* to be harmful, even given the uncertainties of the methods available for such proof. Techno-skepticism – examining innovation with a critical eye – is another form of precaution. This orientation should not be confused with wholesale opposition to technological change. Technology is here to stay, but we need to create procedures to examine its impacts before releasing new technology into the marketplaces of the world.

Dealing with the unsustainable psychological elements of our addiction is very challenging. There are no quick fixes. But it is possible to design the technology of daily living to produce authentic satisfaction – the sort not driven by manufactured wants or needs – and

Table 3: Reframing the Way We Design Our Artifacts	
Current Practice	**Sustainable Design**
Industrial design	Design of functional objects
Product design	Creation of material culture
Specialization	Improvisation
Conventional	Uncertain, uncomfortable
Professional	Amateur, dilettante
Specific	Holistic, integrative
Instrumental	Intrinsic
Problem-solving	Experimenting
Solutions	Possibilities
A priori design	Contingent design

This table was originally titled "Reframing Our Perspective for Sustainable Design" (Walker 2002,9).

consequently reduce the level of existential anxiety. New design philosophies and techniques have great potential to reverse the current trend and begin to produce authenticity and other characteristics of flourishing – beauty and durability, for example. In a recent article, Professor Stuart Walker at the University of Calgary presented an alternate way of designing products for sustainability. Similar to Gladwin's plea for a new set of cultural beliefs, Walker's thesis argues for a new system for sustainable design (see Table 3).[13]

Apart from products that have been designed for remanufacturing and recycling (like Xerox's line of digital office machines), examples of such a new way of designing are virtually absent from the market. That is not to say that such tools do not come into existence. Ivan Illich calls artifacts (and institutions) that produce authentic human satisfaction "convivial

Don't settle for simply reducing unsustainability.

tools." An example he uses is the conventional telephone system, which allows "the user to express his meaning in action."

During a yearlong residency in the Sustainable [Industrial] Design Group at the Technical University of Delft, I was introduced to research (being done in the Netherlands) aimed at designing artifacts that could guide ethical behavior. The core of this work is that humans and artifacts interact in ways unforeseen in typical design procedures. Taking some liberties with their work, I would say that this scheme considers the use of an artifact as a type of conversation between the actor and the object, each with a script telling the other what is expected.

A researcher at the University of Twente, Jaap Jelsma, points to an example found in the Netherlands – a water-conserving toilet using a two-button actuating mechanism.[14] The smaller of the buttons is used after urination and the larger button otherwise. The prescriptive influence comes from the requirement that the user must make a decision every time. If the design is effective, the user will follow the script built into the artifact by the designer; in this case the message is to conserve water. I believe that such new approaches to product design can change the relationship between consumers and product-and-service providers, and, if that process is carefully constructed and open to examination, can strengthen all three points of the new triad. If design is regarded as a long conversation (between the designer, the consumer, and nature) out of which designs evolve, I believe that the objects that emerge will be much more satisfying and induce ethical, reflective interactions between the user and the object. Industrial ecology can supply the voice of nature in the conversation, speaking about closed cycles, avoidance of metabolic poisons, and other features of sustainable ecosystems.

Choosing Sustainability: A New Strategic Framework

The opportunities for business to create sustainability are indeed immense, but so is the possibility of continuing in the same, business-as-usual pattern, even as we apparently make headway with eco-efficiency, lifecycle management, and other strategies arising under the rubric of sustainable development. Each enterprise has a choice about which way to go. This article has presented a strong case for taking up the cause of radical sustainability. It is radical, but not extreme. It brings us back to our roots – the meaning of the very origin of "radical" – and is the natural way to go. If we take that position, we can perhaps begin to see that modernity, with its unsustainable structure, is the extreme paradigm. It has brought us wonders, but wonders that do not treat the heart and soul of our species.

By now many of you must be wondering, "where are the examples of success" that always show up in articles like this. I purposefully have avoided doing this. The basis for the sustainability strategy is that radical new institutions and forms of technology must rise from a new

paradigm. And, although the business literature is full of worthy efforts to improve corporate practices, virtually all have arisen in the context of reducing unsustainability. Efforts to build on these examples continue to be critically important. But the radical, perhaps simple, changes needed are yet to come forth and will not until sustainability is established as a vision.

That vision can become a reality as a result of many steps that we can take together. Six steps, in particular, suggest the outlines for a truly sustainable future:

1. Acknowledge that you and your firm are likely addicted to unsustainable practices, and follow that by accepting the radical definition of sustainability. Don't settle for simply reducing unsustainability.

2. Change your thinking from seeing your enterprise as an independent, autonomous entity to one embedded in a complex living network. We are all interconnected; the idea of an isolated "sustainable firm" found so often in the business strategy world is an oxymoron. Collaboration with your peers and other producers can change the rules of the game you play to a truly win-win context. And changing the design process to involve stakeholders of all sorts expands collaboration to a much wider set of players whose knowledge of the world can greatly enhance the conventional rationality of a firm.

3. Implement the sustainability triad, using the natural, human, and ethical dimensions as the framework for an organizational and technological (products and services) change process. Replace the Brundtland strategy triangle and the triple bottom line.

4. Follow the principles of industrial ecology or other programs built on these principles, such as Natural Capitalism, The Natural Step, Cradle to Cradle, et al.[15] This will lead you toward addressing an important subset of the paradigmatic elements in the tables, all of which are grounded in ecological properties that include, for example, holism and interconnectedness.

5. Start thinking of design as more than a purely technical exercise to find the most efficient way to satisfy two sets of fundamentally contradictory objectives – those of the firm and the financial world, and those of the consumers and other stakeholders. Revise the

concept of design from a technical, analytic process to a dialogic conversation involving all the players. This can refer to design of artifacts and to the design of human structures as well. Get used to the added time and resources that will be needed for this change.

6. Finally, commit to the actions that emerge from the design step and move on.

Industrial societies, and our planet, are at a turning point. Few people believe that what has served as "best practice" for the past 200 years will serve for another 200. The deeply rooted notions of progress that have been with us since Bacon and Descartes have outlived their effectiveness and now are a central part of our addiction to modernity. It is up to us, individually and collectively, to take the first steps to sobriety.

Endnotes

1 Forest Reinhardt, "Market Failure and the Environmental Policies of Firms," *Journal of Industrial Ecology 3*(1) (1999): 9–21.

2 Named for Norwegian Prime Minister Gro Harlem Brundtland, who chaired the U.N.-appointed World Commission on Environment and Development, the report was published commercially as *Our Common Future,* G. Brundtland, ed. (Oxford, UK: Oxford University Press, 1987).

3 John Elkington, *Cannibals with Forks: The Triple Bottom Line of 21st Century Business* (Gabriola Island, BC, Canada: New Society Publishers, Limited, 1998).

4 This assertion is not to dismiss groups that seek rapprochement between science and spirituality as a precondition to sustainability. The key is the word "powerful." Those who stress the criticality of the spiritual are still much in the shadows of mainstream Western society.

5 Peter Senge, Charlotte Roberts, et al. *The Fifth Discipline Handbook* (New York: Doubleday, 1994), 135ff.

6 This model of changing behavior to avoid the traps of the past is fundamental to many schools of organizational and personal transformation and change, for example, see Peter Senge, *The Fifth Discipline* (New York: Doubleday, 1990).

7 Erich Fromm, *To Have or To Be?* (New York: Harper & Row, 1976).

8 Hans Jonas. *The Imperative of Responsibility: In Search of an Ethics for the Technological Age* (Chicago: University of Chicago Press, 1984).

9 See also SoL's Sustainability Consortium at *www.solonline.org/public_pages/comm_Sustainability ConsortiumCore/*.

10 Thomas Gladwin, William E. Newburry, et al., "Why is the Northern Elite Mind Biased Against Community, the Environment, and a Sustainable Future," in *Environment, Ethics, and Behavior: The Psychology of Environmental Valuation and Degradation,* M. H. Bazerman, D. M. Messick, and K. A. Wade-Benzoni (San Francisco: The New Lexington Press, 1997): 234–274.

11 See *http://www.rprogress.org*.

12 See *http://www.wbcsd.ch*.

13 Stuart Walker, "A Journey in Design: An Exploration of Perspectives for Sustainability" *Journal of Sustainable Product Design* (2002): 3–10.

14 Jaap Jelsma, "Design of Behaviour Steering Technology" Proceedings of the 2000 International Summer Academy on Technology Studies, Graz, Austria, July 9–14, 2000. Available at *http://www.ifz.tu-graz.ac.at/sumacad/sumacad_proc00.html*.

15 See: *www.natcap.org*; *www.naturalstep.org*; and *www.mbdc.com/c2c_home.htm*.

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Commentary

By Gregory Roscoe

Gregory Roscoe

The title of John Ehrenfeld's paper says it all – "Searching for Sustainability: No Quick Fix"! The take-away for me is that as a society we have continued to focus on emerging and glaring *symptoms* of non-sustainability. To make a societal paradigm shift toward the *aspirations* of sustainability "will require a cultural transformation" – no quick fix.

One revealing point Ehrenfeld made was the contrast between sustainable development and (radical) sustainability. Sustainable development focuses on economic growth with reduction of negative environmental consequences. He characterizes it as a more thoughtful "extrapolation of the past." To be sure, the reduction of negative environmental consequences is not without merit. Having worked for the Environmental Protection Agency (EPA), I have a first-hand appreciation for how problem-mitigation-based strategies can make monumental strides in advancing environmental quality. The U.S. has an outstanding track record of identifying environmental problems and addressing them. Thirty years ago, our rivers were catching fire; that doesn't happen today!

As agency policy became more sophisticated, we even allowed ourselves to think about how to continue to develop economically while minimizing the impacts of that growth (sustainable development). For example, the EPA and its state partners have invested in the development of Environmental Management Systems (EMS), in the promotion of life-cycle analysis in product development, and in environmental leadership programs as adjuncts to their regulatory agendas. Regulators have begun taking broader, sector-

based approaches to environmental issues, and systems thinking is working its way into strategic planning. For example, the EPA New England office has a long history of working with the metal finishing sector. Taking a multi-media and sector-wide view of compliance was a huge strategic step forward. After investing significant energy into its compliance efforts, EPA also incorporated broader, collaborative strategies – most recently encouraging corporate entities to "green their supply chain." As part of this effort, corporate sponsors require commitments from their vendors to adopt EMS and to produce "greener" products.

Nevertheless, Ehrenfeld is right – minimizing non-sustainability is not the flip side of sustainability. As he said: "sustainability – the possibility of flourishing in the future – is aspirational." It will require a cultural shift. This leads to one of the most fundamental questions facing our federal and state environmental agencies: Will they be defined by the statutory and regulatory structures that are their current framework, or will they embrace the need to catalyze and facilitate the cultural change necessary for "radical" sustainability?

The forces shaping the missions of our state and federal environmental agencies are complex, historical, and structural. Unfortunately, there will be an ongoing need for environmental regulation and enforcement. Though now an accepted part of the environmental agenda, the emergence of green performance initiatives like Performance Track and the broader, sector-based strategies such as EPA's College and

University Sector, Hospitals/Health Care and Metal Finishers was a departure from more traditional interpretations of mission. There were no statutory mandates to undertake these initiatives and early on there was internal debate about why these efforts were important and who was asking for them.

As we ponder a more sophisticated and radical notion of sustainability, concrete strategies well suited to regulatory personnel may well be elusive. The finite political lifespans of federal and state leadership present special challenges for long-term agendas like sustainability. Also, that agenda has not been helped by the indiscriminate use and "eye of the beholder" definition of the term. "Sustainability" has come to have little specific meaning and thus is currently limited as a beacon for policy makers. Given their finite resources, how will these agencies evaluate "bang for the buck" when sustainability efforts (however we define them) are compared with more traditional environmental agendas such as permitting or emissions trading?

These strategic conversations are happening in our regulatory agencies, but the expectations and path(s) for sustainability certainly are not clear. What is clear is that there are opportunities for leadership and involvement of these agencies. However, we cannot lay sole responsibility on their doorsteps if a true cultural change is to happen. EPA and state environmental agencies were originally organized to develop and execute crises responses to environmental problems. They have evolved to embrace strategies that promote sustainable development. The remaining challenge of radical sustainability is largely societal and cultural – an agenda larger than that of any government agency. The shift to radical sustainability will require a culture change by business leaders, communities, political leaders, and ourselves. There will be no quick fix.

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Commentary

By Bob Tierney

Bob Tierney

If, as a society, consumption is our problem and technology is our cocaine, then with John Ehrenfeld's analogy taken one step further, I work for one of society's major drug pushers! Pratt & Whitney and its parent company, United Technologies – providers of jet engines, air conditioning systems, and other industrial products and services – account for a full 1% of the world's CO_2 emissions. The current fuel efficiency of air travel is fairly good: at 500 miles per hour, an airline passenger can travel 100 miles on a single gallon of jet fuel, for example. Not bad – but the global demand for air travel is increasing so that, even with improved efficiency, the total amount of CO_2 from aviation is predicted to rise for many years to come. It may well be that "reducing unsustainability" is not enough. But when you're heading in the wrong direction you have to slow down before you can turn around.

It's important to note that Ehrenfeld is not saying that technology is bad. From my 25-year tenure in a large multinational firm, and as a student of sustainability, I see that technology can be a catalyst for unsustainable practices. But it can also be the enabler for achieving sustainability – it depends on how successful we are at integrating natural and human limits into the design equation.

This is easier said than done. Our company has been pursuing eco-efficiency since the early 1990s with much success. We have been rewarded for our successes with lower cost of goods sold and positive acknowledgments from government. Moving away from what has worked in the past and starting to recognize business and environmental costs that traditionally have been borne by society is a very difficult conversation to have with the CFO of any company. It happens only when people in an organization care enough about the future to take risks and find opportunities to apply their intentions. For instance, Pratt & Whitney's internal effort to develop more eco-friendly solutions took root as a marketable service only after the 9/11 attacks crippled our commercial aviation business.

The fact is, business practitioners must make the financial as well as the environmental and social case for change. For example, most of the products we make either consume fossil fuel directly or cause it to be consumed. Being eco-efficient with energy inputs reduces customer operating costs, and therefore, where development costs can be repaid with sufficient increased sales, investments will be made to improve this measure.

The internal conversation we are beginning to have now, with a focus on sustainability, is about the development of alternative fuels and the use of emission offsets. We also have analyzed the potential external costs with one of our products that has a design-to-retire lifetime of 50+ years. We have examined, for example, the impact that a carbon tax or more stringent regulation might have on our future business. We have not made the business case for the kinds of product design methods that Ehrenfeld describes, but we are beginning the conversations that will lead to this.

One method we have used to increase awareness is to focus on "unsustainable"

practices. With the burning of fossil fuels, we can speak about the limits of natural resources and the real impact of those limits on our businesses. For example, our jet engines are designed to last 50 years – but it is not at all certain that the fuel to run them will still be available in 2054. People in our company, and in many others, are now questioning their assumptions and beginning to design products for a very different world we see emerging in the future.

Has there been a great "Aha!" across the company? No. But there have been more conversations this year than last about what is the problem and what are the ranges of solutions. I put these conversations in the category of building capacity, and John Ehrenfeld's article provides a good framework for them. To be sure, some business practitioners will reject his argument out of hand. But in raising difficult questions and offering a framework for discussion, he is doing us a great service.

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Reflections

The SoL Journal
on Knowledge, Learning, and Change

Emerging Knowledge Forum

Adventures on the Way to Investing for a Triple Bottom Line

By Joan Bavaria

Socially Responsible Investing and Trillium Asset Management

By Bill Torbert

Adventures on the Way to Investing for a Triple Bottom Line

By Joan Bavaria

F or all its current cachet, socially responsible investing has been part of the business landscape for many years. As early as the nineteenth century, churches or individuals of conscience decided that it was neither responsible nor consistent to invest their assets in the vehicle that promised the highest financial return without considering the negative impacts that the investment could have on the way to delivering that profit. "Screening" out investments considered unethical was in part a form of protest and in part the way things worked for Quakers, Catholics, and many others when I began managing accounts for Old Colony Trust Company in Boston, Massachusetts in 1969. In the past 20 years, though, socially responsible investing has spread exponentially and become very sophisticated.

There are many stories that could be told about how socially responsible investing (SRI) has grown and changed. This is my story, and the story of a company dedicated to making a difference.

In the late 1970s, responding to client questions about what their money did on the way to investment returns, Elliott Sclar (who later served as board chair for 20 years and continues on the board to this day) and other friends worked with me to help build a company that would invest money and service clients, but most important, would make a positive difference to society. We believed that capitalism was the best economic model yet conceived but that it lacked the "rudder" to steer it away from negative impacts such as a ravaged environment or abused sectors of society. We believed that investors have the power to provide at least part of the rudder. Wallowing in megalomania, we set about the difficult task of incorporating an S.E.C.-regulated investment advisor in Massachusetts, inventing a mission statement, and setting our first strategic goals. We opened in 1983 as Franklin Research & Development. Our first mission statement has been rewritten only minimally in spite of several serious tests by our board and employees.

Trillium Mission (UPDATED 2000)

- Meet the financial, social and ecological goals of individuals and institutions

- Find all possible means of social progress in capital markets and educate in their use

- Maintain a work environment in which ownership, responsibilities and rewards are broadly shared

- Support those working to build a just and better world.

Three strategic goals flowing from this mission framed our work for two decades and are still framing much of what we do. Those goals were:

1. Build a company that walks the talk of social responsibility.
2. Create an information system and/or publication to encourage other investment professionals to consider social goals when making decisions.
3. Build networks to bring together diverse entities that are working toward the same goals.

Although quantification of success within our mission and strategy is elusive at times (what is a "just" and "better" world?), these goals have proved to be enduring and worthy. In 1983 we began publishing *Insight*, a newsletter that analyzes investment opportunities through both a financial and a social lens. For almost 20 years we have published and mailed this newsletter to subscribers for the cost of printing. In the process, we have empowered our competition by demonstrating that socially responsible investing can be profitable. This was part of the strategy – to build an industry. Although we certainly did not build the industry all by ourselves, one of our challenges in the company now is to differentiate ourselves from the many other SRI managers. Thus, we work well beyond simply screening out offensive investments; we also engage as shareholders with companies on behalf of clients as part of a small handful of managers with similar commitments.

Getting Started

In 1979, we sent a questionnaire to about 50 researchers, friends, investors, and investment professionals who we knew were interested in socially responsible investing, and about 30 were returned. At the time, two issues predominated – South Africa divestiture and the coziness of the "big 10" accounting firms with the companies they audited. Now auditing in North America is dominated by just four big firms! And sadly, because of changes in the law, the South Africa divestiture movement that was so powerful in bringing the issue into the public realm could not happen today

We met in 1981 with friends, advisors, and constituents to explore ways to create a network of people and organizations concerned with the *process* of making money (as opposed to just the *end result*). Although some attendees from community loan funds or research organizations did not initially understand what they could have in common with Wall Street types, it soon became apparent that we shared similar goals and another meeting was planned. We hosted those meetings until the group formalized into a nonprofit called the Social Investment Forum. That organization is still active today, providing networking for all professionals in and around socially responsible investing. An estimated $2.16 trillion is now invested in professionally managed portfolios using one or more of the three core SRI strategies – screening, shareholder advocacy, and community investing.

In June of 1988, the board of the Social Investment Forum reached past the trade organization model to network with likeminded individuals and institutions. Pollution, dirty beaches, the lingering aftermath of the 1984 Bhopal tragedy, and the Chernobyl nuclear accident had caused the environment to be one of the top concerns of socially responsible investors. Given the dearth of good information or clear strategies for investors, we decided to reach out directly to those working for the global environment. Slowly we found those who understood the connection of the environment with investors and put together the network that became CERES (Coalition for Environmentally Responsible Economies) in 1989.

The CERES principles were seen as an environmental management mission statement for companies or any business entity. The last two principles introduced ideas that were then revolutionary: accountability through transparency and governance consistent with environmental goals. Only amended once, the principles have been endorsed by many large and small companies and copied by countless others around the globe.

The CERES Principles

Protection of the Biosphere

We will reduce and make continual progress toward eliminating the release of any substance that may cause environmental damage to the air, water, or the earth or its inhabitants. We will safeguard all habitats affected by our operations and will protect open spaces and wilderness, while preserving biodiversity.

Sustainable Use of Natural Resources

We will make sustainable use of renewable natural resources, such as water, soils and forests. We will conserve non-renewable natural resources through efficient use and careful planning.

Reduction and Disposal of Wastes

We will reduce and where possible eliminate waste through source reduction and recycling. All waste will be handled and disposed of through safe and responsible methods.

Energy Conservation

We will conserve energy and improve the energy efficiency of our internal operations and of the goods and services we sell. We will make every effort to use environmentally safe and sustainable energy sources.

Risk Reduction

We will strive to minimize the environmental, health and safety risks to our employees and the communities in which we operate through safe technologies, facilities and operating procedures, and by being prepared for emergencies.

Safe Products and Services

We will reduce and where possible eliminate the use, manufacture or sale of products and services that cause environmental damage or health or safety hazards. We will inform our customers of the environmental impacts of our products or services and try to correct unsafe use.

Environmental Restoration

We will promptly and responsibly correct conditions we have caused that endanger health, safety or the environment. To the extent feasible, we will redress injuries we have caused to persons or damage we have caused to the environment and will restore the environment.

Informing the Public

We will inform in a timely manner everyone who may be affected by conditions caused by our company that might endanger health, safety or the environment. We will regularly seek advice and counsel through dialogue with persons in communities near our facilities. We will not take any action against employees for reporting dangerous incidents or conditions to management or to appropriate authorities.

Management Commitment

We will implement these Principles and sustain a process that ensures that the Board of Directors and Chief Executive Officer are fully informed about pertinent environmental issues and are fully responsible for environmental policy. In selecting our Board of Directors, we will consider demonstrated environmental commitment as a factor.

Audits and Reports

We will conduct an annual self-evaluation of our progress in implementing these Principles. We will support the timely creation of generally accepted environmental audit procedures. We will annually complete the CERES Report, which will be made available to the public.

Acting on Principle

The CERES story is a long one and hard to summarize. It includes, for instance, a 1990 trip to Japan, where I spoke with eager, diligent businesspeople who at least *pretended* to be riveted to the simultaneous translator next to me for three hours as the CERES story of mission statement and reporting was told. There was no tradition of reporting in any form in Japan when the idea of an environmental report was introduced to them. For me, the saga includes tours of a steel plant, a lumber processing plant, and several automobile assembly plants. It includes many meetings between companies whose stock is owned by public and private investors and activists.

With the United Nations, CERES has in recent years spawned the Global Reporting Initiative (GRI), promoting transparency and accountability around the world. Japan, where reporting was once an alien concept, leads the world with more than 60 companies reporting on sustainability practices and results on the GRI format. Moving further across industries and the globe, CERES has initiated a sustainable governance project, convening large-scale pension and money managers around the issue of global warming and their fiduciary duties.

The CERES story is part of our company's story because we incubated CERES as we had incubated the Social Investment Forum earlier. We donated countless work hours, provided office space, paid employee benefits, and loaned them money. The creation of the Social Investment Forum and of CERES was part of our original strategy of building networks to help social change.

The company clearly has been true to its goals around networking, supporting others, and finding ways to distribute research so more investment professionals will employ social screens and tactics. But what about the goal of building itself?

Building a company that walks its talk has been perhaps the most difficult of the three strategic goals or the four elements of the mission statement. We have been through all the normal stages of corporate organizational development (see accompanying article by Bill Torbert for one version of these "normal" stages) and some stages that we may have invented as an employee-owned, regulated financial services company. We changed our name to Trillium Asset Management because of trademark issues, changed our bylaws at least five times, changed our capital structure several times, and worked constantly to improve customer service and our investment results. We have run into adversaries who think we're evil or communist, and have dealt with the competition we helped create – sometimes well and sometimes not so well. We have successfully defended ourselves in lawsuits by former managers over ownership, control, and account solicitation. We have had fun and we have had trying times – the market from 2000 to 2003 was no picnic. Soon we will have to deal with the issue of entrepreneur succession.

The good news is, we are alive and very well, we have a great team of dedicated and empowered employees with very low turnover, we have grown to occupy four sites, and we continue challenging the outer reaches of SRI thinking. The trillium, the three-petaled flower in our new name, stands for the three kinds of return on investment we and our clients seek: good economic returns, increasing social equity, and disciplined attention to ecological sustainability. There are many more "bottom lines" we could insert around, between, or under those three. Today we work to find new ways to define, measure, and report our successes

and failures beyond our steady financial growth. We work on new social issues not envisioned in 1979 when the first questionnaire was mailed: media consolidation, water scarcity, land use issues, health care around the world, and more transparency.

ABOUT THE AUTHOR

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Socially Responsible Investing and Trillium Asset Management

By Bill Torbert

As Joan Bavaria has described in the foregoing article, she founded Trillium Asset Management in the early 1980s by conducting a series of rather difficult conversations with players who held quite different goals and perspectives – so different, in fact, that some of them initially couldn't figure out why they should be in the same conversation. The conversations attempted to respond to requests by a few clients to screen their investments somehow, not only for optimal short-term financial gains, but also for companies' longer-term impacts on social equity and environmental sustainability. These clients had evidently made clear to themselves through some sort of first-person research that they wanted a product/service that did not yet exist. The conversations that Joan instigated were, in effect, second-person research processes about the future – about whether investing advice could be reconceived, researched, and marketed as including desired outcomes over and above the financial return to the investor. The Socially Responsible Investing sub-industry that emerged during the subsequent 20 years is the ongoing third-person research and practice outcome from those early first- and second-person types of research (see sidebar, "Three Kinds of Research We Can Conduct During Our Practice").

Profitability and growth in market share have long been primary forms of assessment for companies in market economies. An unanticipated and unplanned loss of profitability or a decline in market share are types of "negative" feedback that, in a relatively healthy company, may lead to a "single-loop" change in operations, such as raising the advertising budget for the next quarter and cutting R&D. But sometimes a single-loop change is not sufficient

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Three Kinds of Research We Can Conduct During Our Practice: Definitions

First-Person Research During Practice: research that we do by ourselves on ourselves, e.g., assessing the effects of our actions by inquiring or by meditating on our feelings and primary values as we make an important decision.

Second-Person Research During Practice: research we do together, at various points, in a particular conversation, or as part of an ongoing work team or voluntary community of inquiry, on how we are performing, what vision and norms we share, and whether we wish to transform them.

Third-Person Research During Practice: research done by public institutions that research, analyze, and publish the results of data generated by the actions of many people who may be strangers to one another, e.g., the stock market, electoral systems, or the publications of professional, scholarly associations.

and what is really called for is a more demanding, double-loop change in strategy (such as creating a new strategic alliance or outsourcing a certain function). And sometimes the negative feedback of loss of profitability seems to call for a triple-loop change in an organization's vision or mission, though this is the rarest and most difficult sort of change to sustain.

As suggested in Figure 1, single-, double-, and triple-loop changes may occur at the first- and second-person scales as well as at the third-person scale. One of the things that makes Joan Bavaria's story so remarkable is that she and her colleagues seem to have had the capacity, repeatedly, to create triple-loop conversations that threw into question one another's ways of framing knowledge and practice, and led to new shared visions (the vision of socially responsible investing in the first place, the vision for Trillium as a company, the vision for the Social Investing Forum, the vision of the CERES Principles, and the vision for the Global Reporting Initiative).

Figure 1: Single-, Double-, and Triple-loop Feedback Across Four Territories of Personal and Social Experience		
First-Person:	**Second-Person:**	**Third-Person:**
Attending	Speaking & Listening	Organizing
Attending/Intending	Framing	Visioning
Feeling/Thinking	Advocating	Strategizing
Sensing/Acting	Illustrating	Performing
Perceiving/Effecting	Inquiring	Assessing

How Markets Learn

Before returning to Joan's story, let us gain a little more familiarity with the ideas in Figure 1 by exploring briefly how the stock market as a whole reflects the four territories of experience and opportunities for single-, double-, and triple-loop learning and change. We can immediately grasp that the minute-by-minute changes in stock prices represent the aggregate assessment, by all stockholders who are buying or selling particular stocks at that time, of the effects and implications for them of all current business and political conditions and actions of which they are aware. Most lay investors focus the research that guides their choices of when to buy or sell which stock primarily, or only, on the *Assessing* territory of experience. They base their decisions on today's headlines, yesterday's price changes, or companies' most recent quarterly results. Also, their research is often not disciplined, cumulative, or self-referential (that is, they don't look at how they may improve their investing success by changes in themselves).

However, such self-referential "action inquiry" in the *Performing*, *Strategizing*, and *Mission re-visioning* territories of experience is possible in relation to stock buying and selling decisions. Professional investment managers (as well as some savvy lay investors) engage in action inquiry in both the *Performing* and *Strategizing* territories of experience about how to time and direct their buying and selling decisions. In the *Performing* territory, for example, one can adopt as a self-referential performance discipline the rule: "Sell any stock that loses 8% of its value." In the *Strategizing* territory, investment professionals can and do offer their clients choices among different investing strategies (i.e., large-cap growth, mid-cap value, bonds, etc.).

In the *Mission re-visioning* territory, Socially Responsible Investing (SRI) has, for the past 20 years, been offering an alternative vision of the very purpose and process of investing. The aim in SRI is not just to maximize the investor's financial bottom line by choosing relatively reliably high-profit-margin companies. In SRI, the aim is to optimize a triple bottom line that includes social equity and environmental sustainability as well as financial profit by investing in companies that give broader attention to all three (Waddock, 2001).

During its first 15 years, this approach to investing was treated as a laughable proposition by the big, traditional investment advising corporations, mutual funds, and mainstream economists and finance professors. Why? Because, according to short-term rational choice criteria, narrowing one's investment portfolio on criteria other than shareholder wealth maximization would reduce one's financial return. No one except the small constituency rich enough and sentimental enough to afford making relatively less money on their investments would so invest their money, it was argued. (The work of 1998 Nobel Laureate in Economics, Amartya Sen [1982, 1987; Klamer, 1989], is rare in recognizing that this isn't necessarily so, though today a whole new vision of economic theory that interweaves sustainability, equity, and profitability is being developed [e.g., Robertson, 1989].) In short, institutional forces reinforcing the "conventional wisdom" or "status quo frame" (not only in the financial industry, but in the reigning academic economic paradigm) acted strongly to maintain isomorphism within the financial industry during this period, with only a few boutique SRI firms managing to surface. This is why a triple-loop change in vision is difficult to sustain.

Nevertheless, during the late 1990s, two-thirds of the socially screened equity funds outperformed the average equity mutual fund over a three-year period, and major investment houses were suddenly advertising "social" funds as quickly as they could mount any facsimile of one (Becker, 1999; Torbert, 1999). What had happened? The Chernobyl incident, the Valdez oil spill, global warming research, the transition of South Africa from apartheid and of Eastern Europe from Communism, and many other events increased awareness of the need to integrate profitability, equity, and sustainability. At the same time, socially screened equity funds had proved they could match or exceed the financial returns of traditional funds and could find a growing "green," "cultural creatives" market segment that gained utility not just from its financial returns on investments. This market segment also gains utility (or pleasure) from supporting companies that address social equity and ecological sustainability concerns in relatively positive ways, and from supporting dialogue and shareholder initiatives with companies that may be influenced to increase their concern with equity and sustainability, and not just with profitability.

Roots of Success

But how did this sub-industry that aims to transform our very way of envisioning company success and personal utility arise in the first place and persist long enough to develop to the point of generating such positive data? My answer is that through her first- and second-person research, Joan Bavaria made herself the kind of CEO who could support and sustain such a profound change, and that the kind of institutions of collaborative inquiry into which she and her colleagues made Trillium, the Social Investing Forum, CERES, and the Global Reporting Initiative (GRI) are the kinds of institutions that can best support and sustain such a profound change. Let me explain what I mean by this and what data support this conclusion.

I have spent the past 40 years of my career as a social scientist, social entrepreneur, and consultant trying to understand why it is that certain leaders, certain kinds of organizations, and certain kinds of social science reliably learn and change based on single-, double-, or triple-loop feedback – and why others just as reliably don't. I have found that developmental theory describes a process of repeated transformations that an individual, an organization, or a wider institution (such as the stock market or social science) can go through over long periods of time. These transformations of our own or our organization's action-logics gradually enable us reliably to make, first, single-loop changes in performance when warranted; then, double-loop transformations of strategy; and finally, triple-loop changes in vision.

Table 1 very briefly describes this series of possible changes in action-logics. As the characterizations of Action-Logics V, VI, and VII indicate, persons, organizations, and scientific paradigms that develop to the levels of these later action-logics engage in increasingly intensive first-, second-, and third-person research. They thereby gain increasing contact with the four territories of experience posited in Figure 1, and increasingly commit to interweaving single-loop, double-loop, and triple-loop changes that sustainably align visions, strategies, operations, and assessed outcomes.

My own and others' empirical research (Cook-Greuter, 1999; Kegan, 1994; Torbert, 1991) shows that only a very small percentage of CEOs and other leaders today develop themselves to Action-Logic VI, the Strategist action-logic, where we theoretically become capable of supporting double-loop change (see Table 1). Further research has offered empirical confirmation that CEOs measured as Strategists uniformly succeed in supporting constructive organizational transformation when they intend to, whereas CEOs measured at earlier action-logics do not (Rooke & Torbert, 1998; Torbert & Associates, 2004). Joan Bavaria was measured by the Leadership Development Profile (Cook-Greuter, 1999) in the 1980s as a rare Strategist action-logic leader. So, my first explanation of the gradual rise of SRI as a legitimate vision of investing, in spite of industry and scholarly resistance, is the quality of first-person research and leadership exercised by an early and continuing champion of SRI.

My second explanation for the gradual rise of SRI is that, from the outset, Bavaria envisioned and sought to establish Trillium as an Action-Logic VI Collaborative Inquiry organization (again see Table 1, showing Collaborative Inquiry as the organizational analogue of the Strategist leadership action-logic). Trillium created a unique market niche, becoming the first company solely dedicated to defining and practicing socially responsible, triple-bottom-line investment advising, research, and advocacy. It remains the largest independent such company to this day, having been consistently profitable and having grown modestly but steadily over a 20-year span – expanding to four branches, with more than $700 million under investment in 2003. Thus, it has steadily proven itself in first-order change terms: finding and growing a market. (These and the following facts and inferences about Trillium derive from Brown, 1987, a doctoral dissertation on the earliest years of the company, and from this author's 15-year association with the company as a board member.)

To some degree, Trillium enacted the Collaborative Inquiry action-logic from the outset by incorporating itself as a worker-owned cooperative, with women and minorities constituting a majority of the employee-owners. But the company also had to face a variety of daunting challenges in order to transform, gradually and successfully, through the early organizational action-logics. During the first decade of developing Trillium Asset Management, Bavaria gradually attracted a board of directors with similar ideals and action-logics and, with their support, overcame a potentially crippling lawsuit from a disgruntled board member and

venture capitalist operating at an earlier action-logic. Bavaria also initiated and participated in company-wide learning throughout the subsequent 20 years, seeking out a variety of consultants who helped the organization gradually transform through the Experiments and Systematic Productivity action-logics toward the full daily practice of the Collaborative Inquiry action-logic. The company has transformed its financial/ownership structure twice during this period, but still remains majority-employee-owned. The sense of mutuality and equity within the company is suggested by the fact that employee retention and longevity are far better at Trillium than is the industry norm. The few employees who have gradually "moved on" through processes of performance reviews, personal choice, and company discipline have largely been those who have not been able to manage the paradoxes of competition and collaboration, and of economics and politics, in the company's strategies and daily activities. Thus have Bavaria and her colleagues created an ongoing, second-person research process within the company that has made it capable of repeated double-loop learning and self-transformation.

The third reason for Trillium's success dates to the early 1980s, when Bavaria applied the same Strategist/Collaborative Inquiry action-logic to the development of the wider Socially Responsible Investing sub-industry. She became one of the leading cofounders of the Social Investing Forum, served as its chairperson for a time, and created an inter-organizational network that could sustain the integrity of the new subfield. In 1989, Bavaria coauthored the Valdez Environmental Principles (soon after renamed the CERES Environmental Principles), became the founding chair of CERES, and played a key role in attracting signatories such as

Table 1: Analogies Among Personal, Organizational, and Social Scientific Developmental Action-Logics		
Personal Development	**Organizational Development**	**Social Scientific Development**
I. Birth-Impulsive	I. Conception	I. Anarchism (Feyerabend, 1975)
(multiple, distinctive impulses gradually resolve into characteristic approach [e.g., many fantasies into a particular dream for a new organization])		
II. Opportunist	II. Investments	II. Behaviorism
(dominant task: gain power [e.g., bike riding skill] to have desired effects on outside world)		
III. Diplomat	III. Incorporation	III. Gestalt Sociologism
(looking-glass self: understanding others'/markets' expectations and molding own action to succeed in those terms)		
IV. Expert	IV. Experiments	IV. Empirical Positivism
(intellectual mastery of outside-self systems such that actions = experiments that confirm or disconfirm hypotheses and lead toward valid certainty)		
V. Achiever	V. Systematic Productivity	V. Multi-Method Eclecticism
(pragmatic triangulation among plan/theory, operation/ implementation, and outcome/assessment in incompletely pre-defined environment; regularly acts on single-loop feedback to achieve incremental change)		
VI. Strategist	VI. Collaborative Inquiry	VI. Postmodern Interpretivism
(self-conscious mission/philosophy, sense of timing/historicity, invitation to conversation among multiple voices and to mutual reframing of boundaries – hence, double-loop, transformational feedback occasionally acted upon)		
VII. Alchemist	VII. Foundational Community of Inquiry	VII. Ecological, Cooperative Inquiry
(life/science = a mind/matter, love/death/transformation praxis among others, cultivating interplay and reattunement among inquiry, friendship, work, and material goods – continual triple-loop feedback sought among intent, strategy, action, and effects)		

General Motors to the Principles. By 1999, CERES had organized 19 institutional investment groups, representing $195 billion, for a year-long drive to dialogue with leading companies about endorsing the code of conduct on corporate accountability.

As the decade drew to a close, the CERES Coalition launched the Global Reporting Initiative – guidelines focused on sustainability metrics and supported by corporate, NGO (nongovernmental organization), and government partners, with a $3-million grant from the United Nations Foundation. "We're moving beyond the concept stage and into the implementation stage," she said. "Our goal is simply to make environmental reporting standard procedure for public companies around the world" (Bavaria, 2000). In short, the third reason that Bavaria and Trillium succeeded in re-visioning investing is that she and her colleagues created third-person research processes through which firms can measure, critique, and improve their performance on all three bottom lines.

By co-creating Trillium Asset Management, the Social Investing Forum, CERES, and GRI, Bavaria participated in creating entirely new standards of legitimacy, not just within the field of investing itself, but among business corporations nationally and globally. Recent recognitions she has received symbolize this new legitimacy. In 1999, Bavaria was chosen as a Time.com "Hero for the Planet." In 2000, she was honored by Global Green USA and Green Cross International president Mikhail Gorbachev with the Millennium Award for Corporate Environmental Leadership. In 2002, she was named by Scientific American magazine as one of the "Scientific American 50" for her positive impact on the environment as a business leader.

The Challenge of Socially Responsible Investing

In this case, we see an entrepreneur capable of focusing simultaneously, from the start, on first-order economic success in the market (profitability), on second-order, transformational change within her own company, and on a new, third-order vision for the field of investing which we today call the triple bottom line. At the same time, she created a succession of ever-wider new institutions that support transformation in financial advising, in corporate reporting, and in economic theorizing.

The vision, means, and assessment procedures for triple-bottom-line investing may take generations to embody fully. Indeed, the recent popularity of social investing, based on its single-loop financial returns, threatens to erode its triple-loop principles and practices, as more large investment houses mount superficial social screens for the sole purposes of short-term sales, and more companies tout themselves as "sustainable" when they have in fact made little more than an espoused commitment in that direction (Torbert, 1999). Furthermore, because SRI funds tend to eschew big oil companies, they also tend toward high-tech companies. As a result, the combination of war and recession in 2001–2002 reduced SRI financial returns (with a rebound in 2003). Moreover, the entire SRI movement is still in its infancy, including all its methods of assessment. (Even "straight" financial accountants have been having a good deal of trouble cranking out the true numbers in the late 1990s and early 2000s!) Therefore, there is appropriate, continuing controversy about all the claims made in these paragraphs on behalf of Socially Responsible Investing, and the reader is invited to inquire further (e.g., Entine, 2003; Waddock 2003).

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