The Four Worlds of Sustainability

DRAWING UPON FOUR UNIVERSAL PERSPECTIVES TO SUPPORT SUSTAINABILITY INITIATIVES

Barrett C. Brown

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The quadrants element of the Integral framework developed by Ken Wilber is introduced in the context of sustainability. The quadrants represent lenses with which to better understand any occurrence; they reveal dynamics and forces in the interiors and exteriors of individuals and collectives. Together, they offer a map of psychology, behavior, culture, and systems. After tracing the philosophical lineage of the quadrants, numerous practical examples of a quadrant analysis by sustainability practitioners are offered. The quadrants can be used in three key ways for sustainability: to organize sustainability information, to diagnose the challenges facing a sustainability initiative, and to prescribe an integrated solution that accounts for all the major dynamics at play. The results from recent research—a quadrant analysis—of eight popular sustainability books are shared, quantitatively showing which aspects of reality these books privilege, and discussing the reasons therein. The article ends with guidelines for doing a more complex quadrant analysis, including the introduction of a creative problem solving methodology called Q-DyTS.
Introduction

The real voyage of discovery consists not in seeking new landscapes, but in having new eyes. - Marcel Proust

Over the course of 30+ years of inter- and transdisciplinary research, American theorist and philosopher Ken Wilber has developed the AQAL Integral framework. This comprehensive approach to better understanding the complexity of reality is documented in two dozen books and over 100 articles. The AQAL Integral framework has five key elements: quadrants, developmental levels, developmental lines, states, and types. This article focuses solely on use of the quadrants aspect of the framework as a practical tool for sustainability practitioners to organize information, diagnose problems, and prescribe customized solutions.

In a previous two-part article for this journal, “Theory and Practice of Integral Sustainable Development,” I offer a detailed explanation of the quadrants in the context of sustainability. I also summarize the work of 17 leaders and organizations which have utilized an integral framework for environmental and social change initiatives (ranging from senior United Nations officials addressing HIV/AIDS in 30 countries to companies consulting to corporate leadership development).

This document further explores application of the quadrants for sustainability. In the following pages I first briefly review the quadrants and contextualize them as a viable stand-alone framework amongst a lineage of integral philosophies that stretches back thousands of years. I then offer over two dozen examples of how leaders, change agents, consultants and communities from around the world are using the quadrants to support sustainability initiatives today. I begin this application section with a quadrant analysis of eight popular books concerning corporate sustainability and sustainable development. This research highlights which facets of reality each author tends to privilege (and to what degree). We then review actual quadrant diagrams created by consultants and practitioners from the fields of architecture, ecology, leadership, international development, urban sustainability,
community development, green building, corporate sustainability, and education for sustainability. These show specific examples of the “quadrants-in-action.” The paper closes with an overview of the key steps to analyzing a sustainability initiative through the quadrants and offers a list of questions which may facilitate such an effort.

This article is a reference for using the quadrants to better understand a sustainability issue, organize sustainability knowledge, diagnose challenges, and prescribe appropriate solutions. It doubles as “training wheels” for those new to this type of analysis and “cross-pollination” for those fluent with the methodology but eager to learn how others use it. Robertson Work, Principal Advisor to Development Policy at United Nations Development Programme headquarters, has said that “Use of the Integral framework will only grow. It’s the future of international development. We need to be doing development differently, where we bring in all the dimensions of being human.” I believe that leaders and practitioners from all sectors—industry, civil society, government, and religion—can effectively use the quadrants to clarify the complexity of sustainability and deliver more sophisticated and effective responses to our social and environmental challenges. I hope, and intend, to serve that effort with this writing.

The Quadrants: Four Perspectives for Better Understanding Sustainability

The quadrants are essentially four lenses that, when taken together, help us to comprehensively look at anyone, anything, or any event. By looking at a sustainability initiative through all of the quadrants, we’re able to identify most—if not all—the major forces which influence the success or failure of that initiative. That’s the key advantage of doing a quadrant analysis: you get a very comprehensive picture of all the dynamics at play that will either make or break your project.

Each quadrant represents one of four seemingly universal perspectives. These aren’t the only perspectives available to us, but they do appear to be the perspectives which are most commonly observed and most easily replicable. The bottom line is that the quadrants reveal the interiors and exteriors of individuals and collectives (see figure 1).
Figure 1. The quadrants are four unique, universal lenses with which to look at anything.

Like unique windows on the world, the quadrants offer four unique ways of looking at the same thing, each of which reveals different dimensions or qualities of that thing.
Consider, for example, this artistic rendition below of Water, as seen through the four quadrants. The Upper-Left quadrant (UL) peers into the experience of being with water. The Upper-Right quadrant (UR) offers an empirical perspective on a water crystal, observing its physical details. The Lower-Left quadrant (LL) highlights a relationship between water and humanity, in this case that which involves a daily practice of collecting this life-supporting sustenance. Finally, the Lower-Right quadrant (LR) gives a broad overview of an ecosystem infused by, and supported by flowing water.
As a simple practical example of the quadrants, consider a woman engaged in recycling; let’s look at her actions through the lens of each quadrant. The Upper Left reveals her interior reality while she recycles—her experience—such as what she feels about it (pride, resentment, a sense of duty, etc.). The Upper Right reveals her exterior reality—her behavior—which includes the physical act of placing bottles in a recycling container. The Lower Left brings forth the reality of the collective interior—her culture—such as the shared values that encourage her to recycle (e.g., “we take responsibility for our waste and strive to protect natural resources”). Finally, the Lower Right unveils the exterior aspects of the collective—the systems created by her culture—like the economic and transportation systems which enable recycling to be a financially viable option for a community.

There is only one event we’ve been looking at: a woman recycling. Yet by using each of the quadrants as a lens, we’re able to see four distinct and important perspectives. Again, each quadrant is essentially a window to a different part of the same world. One window reveals
the psychological dimensions, the next the cultural dimensions, the third the behavioral and bodily dimensions, and the final window shows the systems dimensions. An integrally-informed practitioner takes the time to look through each window so as to be able to identify and then effectively respond to the dynamics arising in all the major dimensions affecting his initiative (see figure 2). Subsequent sections of this paper offer real-world examples of how sustainability practitioners are doing this sort of quadrant analysis to help foster social and environmental change.

Figure 2. Using the quadrants to identify the major influences on a sustainability initiative.

Figure 3 further fleshes out quadrants in the context of sustainability. It offers examples of forces which can influence a sustainability initiative in each quadrant and lists some tools which can be used to address and even transform them.
PSYCHOLOGICAL INFLUENCES
Individual-Interior: Self and Consciousness
The subjective, internal reality of an individual

Context: self-identity and consciousness; intentions; personal values; attitude; religious or spiritual beliefs; commitment (e.g., cognitive, emotional, moral; cognitive capacity; depth of responsibility; degree of care for others and the environment; etc.

Examples of areas addressed: psychological health and development; educational level; emotional intelligence; motivation and will; understanding of one’s role in the community and impact on the environment; personal goals; the practitioner’s mental model; self-knowledge; a city-dweller’s disconnection from the natural world.

Tools for transformation: e.g., psychotherapy; religious or spiritual counseling; Hohagam analysis; Myers-Briggs testing; phenomenological research; self-questioning; body scanning; introspection; prayer; meditation; journaling; goal-setting; emotional literacy training; increased exposure to wild nature; vision quest; compassion practices.

CULTURAL INFLUENCES
Collective-Interior: Cultures and Worldviews
The intersubjective, internal realities of groups

Context: shared values and worldviews; shared meaning; mutual resonance; cultural norms, boundaries and mores; language; customs; communication; relationships; symbolism; agreed upon ethics; etc.

Examples of areas addressed: cultural “appropriateness”; collective vision; relationship between practitioners and the community; relationship amongst community/family/organization members; stigmas; language differences; collective interpretation of power, class, race and gender inequities; collective perception of the environment and pollution.

Tools for transformation: e.g., dialogue; community-directed development; inclusive decision making; consensus-based strategic planning; organizational learning; support groups (religious or secular); trust-building exercises; participant-observer techniques; community visioning; cooperative participation; storytelling; collective introspection; group therapy; meme development and propagation; language skills development; communication skills development.

BEHAVIORAL INFLUENCES
Individual-Exterior: Brain and Organism; Actions
The objective, external reality of an individual

Context: biological features; brain chemistry; bodily states; physical health; behaviors; skills; capacities; actions; empirically measurable individual qualities; physical boundaries or surfaces; etc.

Examples of areas addressed: energy level and physical health of a practitioner; nutritional intake; pre- and post-natal care; conduct toward environment or opposite sex; routines; response to rules and regulations; birth control use; money management; computer skills; acidity or toxicity of a water source; metabolic responses to pollutants.

Tools for transformation: e.g., diet; hygiene; medication; exercise; weightlifting; prevention, allopathic, and/or complementary medicine; skill-building; clear rules, regulations, and guidance from a respected authority; use of sustainability technologies such as pollution filters, drip irrigation, solar panels, or a GPS system; use of litigation to enforce regulations or the Freedom of Information Act (in the USA) to acquire data.

SYSTEMS INFLUENCES
Collective-Exterior: Social Systems & Environments
The interobjective, external realities of groups

Context: visible societal structures; systems and modes of production (economic, political, social, informational, educational, technological); strategies; policies; measures; work processes; technologies; natural systems; processes and interactions in the environment; etc.

Examples of areas addressed: stability and effectiveness of economic and political systems; legal frameworks; strength of technological, educational and healthcare infrastructure; poverty alleviation; actual power, class, race and gender inequities; job creation and trade; corporate regulation; organizational structure; food security; health of local biota or global biosphere; climate change; restoration; protection and sustainable use of natural resources; feedback loop efficiencies; bioaccumulation in food chains.

Tools for transformation: e.g., policy-making; organized protest; shareholder activism; capacity building; systems thinking; complexity; chaos, and cybernetic theories; “upstream” strategies; organizational reengineering; microcredit and micro-enterprise; pollution taxes; subsidies; regulations; natural resource restoration and management systems; geographic information systems; natural environmental changes; population changes.

Figure 3. The territory of sustainability revealed by each quadrant.
From Buddha to Plato to Habermas: The Lineage of the Quadrants

The quadrants are based upon a 2600 year lineage of integral philosophy. Renowned scholars over the ages have proposed some form or another of “the Big Three,” a general division of reality into three worlds: the subjective (the “I” perspective of experience, phenomenology, psychology), the intersubjective (the “We” perspective of cultural studies, hermeneutics, communication, etc.), and the objective (the “It” perspective of empiricism and the “hard sciences”). Wilber was the first person that I am aware of who explicitly divided the objective dimension into a singular and a plural. By including this interobjective realm (the “Its” perspective of dynamic systems theory, for example) in his map, he created four quadrants out of the Big Three. The following offers a brief, and hopefully interesting, overview of philosophical lineage of the quadrants. (At this point, if your eyes have begun to glaze over as I refer to the philosophical lineage of a theoretical framework, feel free to skip to the next section on application.)

The Three Jewels of Buddhism are Buddha, Dharma, and Sangha. Buddha, in the original Pali, literally means “awake.” It is the ultimate, subjective “I” experience of being enlightened. Dharma, from the Sanskrit, literally means “that which supports or upholds” and is often translated as teaching, truth, or reality. Dharma represents the objective “It,” the Truth, the Path, the Way through reality. Sangha is translated as “virtuous community” and represents the spiritual community from which we receive support. It is the ultimate “We.” Together, Buddha, Dharma, and Sangha form the first known philosophical example of the Big Three.

Wilber points out that Plato’s “the good, the true, and the beautiful” are another variant on the Big Three; “in the broadest sense this is Plato’s the True (or propositional truth referring to an objective state of affairs, it), the Good (or cultural justice and appropriateness, we), and the Beautiful (or the individual-aesthetic dimension, I).” (See figure 3.)
In the late 18\textsuperscript{th} century, Immanuel Kant published his famous “Three Critiques.” Each addresses a different aspect of the Big Three. The first, \textit{Critique of Pure Reason}, focuses on the realms of empiricism and objective rationality (the “It” dimension). \textit{Critique of Practical Reason} shifts to the field of ethics and moral philosophy (the “We” dimension). And finally, in \textit{Critique of Judgment}, Kant turns his attention to aesthetics (the “I” dimension).\textsuperscript{14}

In the 20\textsuperscript{th} century, at least five leading scholars presented similar maps of reality. John Dewey, one of the founders of the school of Pragmatism, strived to bring together an integrated outlook which suggested that to understand anything, we need to understand it from atomic (UR), biological (UR), sociological (LL and LR), and psychological (UL) perspectives.\textsuperscript{15}

Developmental psychologist and professor Clare Graves, in his model of psychology, identified the dynamics which influence human development from each of the realms of the Big Three:
That the biopsychosocial development of the mature human arises from the interaction of a double-helix complex of two sets of determining forces, the environmentosocial determinants (the Existential Problems of Living) and the neurophysiological equipment of the organism (the Neuropsychological Equipment for Living).”

Karl Popper, one of the most influential philosophers of science in the 20th century, proposed a pluralist view of the universe that consists of three “different but interacting sub-universes” which he calls Worlds. World 1 is the physical world of phenomena and direct experience (the objective “It” dimension). World 2 is the mental, or psychological world, including feelings, thoughts, perceptions, observations (the subjective “I” dimension). World 3 is the realm of products of the human mind, “such as languages; tales and stories and religious myths; scientific conjectures or theories, and mathematical constructions; songs and symphonies; paintings and sculptures. But also aeroplanes and airports and other feats of engineering” (this is the cultural world of “We” as well as its embedded expression in the material realm.)

Over roughly the same time period as Graves and Popper, psychiatrist George L. Engel was devising an alternative model of disease that would challenge the prevailing biomedical model (which focused predominantly on the “It” dimension). In an article for Science in 1977, he proposed a biopsychosocial model which accounts for the social, psychological, and behavioral dimensions of illness. He claimed that “the scientific rational approach should be used to collect and analyze the patient’s biological, psychological, cultural, and social circumstances.” These dimensions correspond to Wilber’s four quadrants.

Finally, German philosopher and sociologist Jürgen Habermas divides reality into three worlds: the objective [“It”] world, the social [“We”] world, and the subjective [“I”] world. Whenever someone says something, for example, Habermas notes that “the speaker takes up a relation to something in the objective world [“It”], something in a common social world [“We”], and something in his own subjective world [“I”].” Habermas suggests that the hearer will accept what has been said as valid according to three “validity claims.” Wilber correlates
these to the quadrants: “Habermas’s three validity claims, for truth (objects), truthfulness or sincerity (subjects), and rightness or justice (intersubjectivity), refer respectively to the Right half, the Upper Left, and the Lower Left.”

Thus, from Buddha to Plato to Habermas, an understanding of the universal dimensions of reality has emerged, and evolved. The quadrants framework stands on the shoulders of many great minds. Given the dialectic of progress, it will likely serve as the foundation for evermore sophisticated and accurate maps of reality to come. For now, though, let’s look at what the heck once can do with this framework to help respond to our environmental and social challenges.

**Three Ways to Use the Quadrants to Serve Sustainability**

There are three principal ways to use the quadrants as an analytical tool. They can be used to organize knowledge, to diagnose a challenge, and to prescribe a solution. The following is an overview of these approaches. After this, we’ll flesh out examples from practitioners in different sectors of sustainability.

1. **Organize Sustainability Knowledge**

   Often in this field we are faced with an insurmountable influx of new information. New research, anecdotes, frameworks, tools, approaches and insights about sustainability appear every day. How do we manage it, how do we recognize what is truly novel, how do we incorporate it into what we already know? There are many ways to organize knowledge; the quadrants (and the larger AQAL integral framework) provide a way of doing so that has proven useful for practitioners.

   The quadrants are scalable; they can organize everything from entire disciplines (see figure 4 below) to the dynamics of a single act of recycling (as we noted above). Here’s how Sean Esbjörn-Hargens, Co-Director of the Integral Ecology Center, has used the quadrants to better understand the field of Ecology. He calls each quadrant a different Terrain of Ecology, and organizes a sampling of different representative approaches to ecology accordingly.
Thus we can loosely categorize the information we have about a sustainability topic according to the quadrants. Of course, rarely does environmental research or a breaking news story on corporate social responsibility only reveal dynamics in one quadrant; often several are visible when we use the quadrants lens. However, I find that by using the quadrants I can better, and more quickly, understand the context of a given piece of information.

For example, say I learn about a new way to do a product Life Cycle Analysis at the same time I read a report about Bhutan’s Gross National Happiness Index. With the quadrants, these are no longer two unorganized pieces of information. The former measures the costs of energy production for a given product—which I would “see” through the lens of the Lower-
Right quadrant. As such, I associate business and economic systems, technology, and environmental impacts with a Life Cycle Analysis. The Gross National Happiness Index, however, strives to measure the overall satisfaction level of an entire society. This is a dynamic best seen through the lens of the Lower-Left quadrant. Therefore, I would associate it with culture, values, communication, shared visions, and so on. As an integrally informed sustainability practitioner, I can build a toolkit of approaches and metrics that is based loosely upon the quadrants. Then, for example, when I want to investigate into the dynamics of the LR, I might do a Life Cycle Analysis, if appropriate. As we’ll see, the quadrants are often used to organize information before diagnosing an issue or prescribing an intervention.

2. Diagnose the Forces Influencing Sustainability

Figure 2, above, visually summarizes this approach. When attempting to identify the most powerful influences on a given situation, the quadrants can serve as a guide, reminding us to check in on all the major dimensions of reality. Did we remember to consider the cultural and psychological dynamics involved here? Are there behavioral or body/brain issues at play? Here’s an example of how Tim Winton, who runs an Integral Sustainability educational center in Australia, uses the quadrants to diagnose the major challenges of adapting to living within ecological limits.33
A diagnosis doesn’t have to be as comprehensive as this. An on-the-fly quadrant analysis of a situation can often reveal that dynamics in one quadrant are a major impediment to the success of a sustainability initiative.

For example, in April of 2006 it was reported that Petrobras, Brazil’s national oil company, would stop trying to build an access road through a UNESCO-designated Biosphere region that is also inhabited by indigenous groups intent upon maintaining their traditional ways. The company will instead begin employing helicopters to access the site. In this case, the collective values (LL) placed upon preserving a diverse bio-region and an indigenous culture
profoundly influenced the outcome of this initiative. If biological diversity and cultural preservation hadn’t been deeply valued by stakeholders (and if those values hadn’t been acted upon), the road would have likely gone through. This is an example of an organization not paying attention to forces in the Lower-Left quadrant and subsequently not achieving their goals as planned. A more sophisticated strategy would have taken into account these dynamics beforehand, and prescribed a solution that addressed them.

3. Prescribe Solutions which Account for all Major Forces

Once the quadrants have been used to identify all of the major psychological, behavioral, cultural, and systemic influences upon any situation, they can then be used to prescribe an integrated response. Here’s an example from Cameron Owens regarding an initiative to foster sustainable consumption and waste reduction in Calgary, Ontario.\textsuperscript{25}

![Quadrants used to prescribe an integrated response to urban waste reduction](image)

Figure 6. The quadrants used to prescribe an integrated response to urban waste reduction
Some practitioners also use the quadrants to envision the outcome they intend to create. The following is from professor—and integrally informed Green Architect—Mark DeKay. In it, he sketches out some of the keys to an Integral approach to Green Architecture.\textsuperscript{26}

![Figure 7. Use of the quadrants to prescribe an Integral approach to Green Architecture.](image-url)

In summary, the quadrants can be applied many ways, under the three general themes of organization, diagnosis, and prescription. It’s important to remember that the quadrants are only lenses through which we can look at an issue. They aren’t boxes that rigidly categorize different parts of reality. All systems don’t “go” in the Lower-Right quadrant, all behavior doesn’t “go” in the Upper-Right quadrant. Anything, any event, can be looked at through the lens of all four quadrants. However, most things tend to be revealed more clearly through one quadrant or another; an economic system and its influences on a sustainability initiative are
more easily seen through the lens of the Lower-Right quadrant than that of the Upper-Left quadrant. (Of course there are psychological, cultural, and behavioral aspects to any economic system as well.)

The next few sections of this paper are dedicated to more examples of how the quadrants have been applied to support sustainability initiatives, from analyzing corporate sustainability communications to designing a response to HIV/AIDS in Africa. The paper concludes with a series of guidelines for how to do a quadrant analysis.

### A Quadrant Analysis of Eight Popular Books on Sustainability

**Overview of Research Questions and Methodology**

For a recent research project, I performed a quadrant analysis of eight popular books about sustainability. I wanted to understand the weight they give to each quadrant. Where do they focus most of their attention? Which aspects of reality do they privilege and what might the consequences be for those who use these books as core text for understanding sustainability? What message has the public received from these books about which dimensions of sustainability are the most important? I wanted to get a quantitative and qualitative sense of where mainstream sustainability books stood with respect to these four universal perspectives.

The eight books I analyzed were broken into five business sustainability books and three books aimed at a multi-sector audience. They were:

- *Cradle to Cradle: Remaking the Way We Make Things* by William McDonough and Michael Braungart
- *Natural Capitalism: Creating the Next Industrial Revolution* by Paul Hawken, Amory Lovins, and Hunter Lovins
- *The Ecology of Commerce: A Declaration of Sustainability* by Paul Hawken
My methodology was straightforward. I analyzed each sentence of every book and documented which quadrant it seemed to focus on. Technically, I looked at the ontological aspect of each statement: the “what” which was being focused on. I avoided trying to interpret the epistemological aspect (“who” was doing the looking: the author’s worldview) and the methodological aspect (“how” sustainability was being perceived: with which methodology).

To determine to which quadrant I would assign any given sentence, I asked, “Is this sentence focusing on the interior or exterior dimensions of reality? And is it focusing on the individual or the collective?” Once I had tabulated the number of lines in a book that focused on each quadrant, I divided that number by the total lines in the book, thus achieving a percentage. Those percentages are graphed in the results below. To understand how I chose the books I did, and why I consider them to be an accurate representation of popular sustainability books, please see this footnote. See the subsequent footnote for all the books on sustainability I considered analyzing. The following diagrams summarize my results, and quite frankly, are much more interesting than those footnotes.
Graphical Results of the Quadrant Analysis of Popular Sustainability Books

**Cradle to Cradle**
by William McDonough & Michael Braungart

- Psychology and Experience: 8%
- Body and Behavior: 10%
- Culture and Worldview: 9%
- Social System and Natural System: 73%

**Natural Capitalism**
by Paul Hawken, Amory Lovins, Hunter Lovins

- Psychology and Experience: 2%
- Body and Behavior: 1% 
- Culture and Worldview: 7%
- Social System and Natural System: 90%
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The Ecology of Commerce
by Paul Hawken

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Culture and Worldview
Social System and Natural System

Walking the Talk
by Charles O. Holliday, Jr., Stephen Schmidheiny, Phillip Watts

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Culture and Worldview
Social System and Natural System
Our Common Future
by The World Commission on Environment and Development

Psychology and Experience

Body and Behavior

Culture and Worldview

Social System and Natural System

Ecovillage Living
Edited by Hildur Jackson and Karen Svensson

Psychology and Experience

Body and Behavior

Culture and Worldview

Social System and Natural System

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Discussion of Results: Why Does the Lower Right Dominate in These Books?

The utter dominance of the Lower-Right quadrant in these diagrams has numerous implications and likely causes. First of all, it suggests that when it comes to looking at sustainability, the authors predominantly focused the attention of their readers on the systems aspects of sustainability. Sentence after sentence, book after book, the authors’ lenses consistently reveal one quarter of reality. Pollution permits, illiteracy rates, economic factors, technological advances, computer modeling to track resource usage, organizational structures, the resource base, and complementary currencies are all examples from the books.

Our worldview is largely a product of our habits. How we habitually see the world forges the blinders that ultimately conceal that which is rare to our attention. Were I to only look at sustainability through the Lower-Right weighted lens offered by these books, I would eventually come to understand sustainability as only the forces and elements revealed by that lens. I would create blinders that would keep me habitually unaware of—and inattentive to—the nuances of the other three main dimensions of reality and the impact which they have upon sustainability.

Were I to only see sustainability as presented by many of these authors, one of my “eyes” on the world would bulge out of proportion, yet it would feel natural to me. As I faced our global challenges, I would see LR problems and prescribe LR solutions. And potentially, my interventions would fail, or at least not be as effective as they could, precisely because of my prejudiced focus on the world. There’s a quotation from the Talmud which says, “We do not see things as they are; we see things as we are.” The depth of my vision and understanding of sustainability would only extend as far as my capacity to see the forces, dynamics, and truths revealed by all quadrants. With a LR prejudice, I would be literally crippled as a sustainability practitioner, because the world, while it may appear as I am, it IS NOT as I am. The world is what it is, and it has at least four fundamental dimensions arising at all times, like different faces of the same Divine. By blocking myself off to those other facets of consciousness, of the Divine, of sustainability, I thwart myself and severely limit my capacity to respond effectively to what IS.
Throughout life, as I studied sustainability, had I only read these bestsellers my perspective would have become prejudiced to see but a fraction of reality, to favor but one quarter—at best a half—of the reality of sustainability. And with this perceptive habit, I would have tried to serve the healthy development of society and the environment while utterly limited by that which I couldn’t really see, and thus that which I couldn’t truly know.

This may be a slightly melodramatic rendition of the habits of mind which arise and the dangers of not seeing as much as one possibly can. However, the issue remains that the #1, #2, and #3 selling books concerning sustainability at Amazon.com—Cradle to Cradle, Plan B 2.0, and Natural Capitalism—craft a lens on the world which deeply privileges one dimension of sustainability: the Lower Right (73%, 91%, and 90%, respectively). If the majority of sustainability practitioners draw upon these books (or most of the others I analyzed and potentially the vast majority of all popular sustainability books) as their “guides” through the rapids of social and ecological change, will we find our way to global sustainability? That question remains to be answered. My sense, though, is that while a focus on the LR may have served us well to date, given the increasingly sophisticated, entrenched, and nuanced challenges we face, it is time to reconsider and consciously reform our lenses so that we can better account for more of reality.

It’s important to note that my analysis doesn’t suggest that the authors aren’t aware of all of the major dimensions of reality revealed by the quadrants. Like any human, they can take an “I” perspective on their experience, an “it” perspective on their behavior, a “we” perspective on their relationships and culture, and an “its” perspective on the systems around them. However, these authors chose to focus their studies, and thus the reader’s learning, on the Lower-Right aspects of sustainability.

Why is this? Only the authors themselves can say for sure, but I believe it is because the forces revealed by the Lower-Right quadrant are so vitally important and influential on the planet and were thus appropriately prioritized. Think about it: Economic systems, technological systems, ecosystems, weather systems, educational systems, policies, regulations. These are all...
massive forces driving in some cases—and drowning in others—our quest for sustainability. My individual experience of sustainability (UL) does not have as large an effect on our future as the fact that the US dollar is backed by oil, a non-renewable resource. Likely the authors chose strategically, focusing where there is easily accessible data to draw from and where the major levers for change reside.

Wilber argues that “the Lower-Right quadrant, in other words the techno-economic mode of production, is the single strongest determinant of the average mode of consciousness in a culture. It’s not the only determinant, but it’s the single strongest.” What he’s suggesting is that if you can influence the Lower Right, you influence the strongest lever on the average level of development in a culture. The more developed the Lower Right structures are—such as sustainability policy mainstreamed into all corporate and governmental legal structures—the more they will serve to “pull” people “up” to that level of development. Thus, if you have to choose to focus only on one quadrant, the Lower Right is the most powerful. However, we know that the Lower Right quadrant is influenced by the other quadrants as well, because they co-arise, or “tetra-evolve”, thus it is useful and powerful to utilize an integral approach which leverages forces in all quadrants as they will all work to help develop the others.

Another potential reason for the heavy focus on the Lower Right is the context and “language” of the audience to whom these books are speaking. Our Common Future by the World Commission on Sustainable Development, focuses 94% on the Lower Right: Lack of access to resources, inequitable land ownership structures, institutional mandates, technology-transfer agreements, intergovernmental policy, political processes, transfrontier pollution standards, etc. Yet who is their audience? International policy makers, lawyers, administrators of intergovernmental agencies, and politicians. The World Commission needed to focus on the aspects of sustainability that were most relevant and accepted by its audience. While they do a solid job of laying out policy recommendations and framing the crucial issues from a LR perspective, they fundamentally privilege the LR. While this is appropriate to its audience, the challenge is that such an approach only serves to reinforce a lopsided view of sustainability. Any newcomer to the field might even take away the
impression that that’s what sustainability is: merely all of those aspects seen through the LR lens.

The LR is a vitally important aspect of sustainability; we must pay attention to it or we will fail. Yet, again, I feel we are called to consider more than those dynamics as the social and environmental complexities we face only deepen. We are finding that partial, piecemeal solutions to our sustainability challenges, those which only focus on the Right-Hand quadrants, simply aren’t sufficient anymore.

Some books, notably The Natural Step for Business and Ecovillage Living had strong Lower-Left representation (22% and 19% respectively). Those two books also had the strongest Upper-Left focus out of the sample (11% each). Why is this? In the case of the Natural Step book, their methodology is largely based in the notion of organizational learning and the power of “metaphor-frames that provide us with a context to interpret reality.” The authors inquire into the cultural and communication dynamics that influence sustainability, as well as those of human psychology and experience. It’s interesting to note that the Natural Step has gone on to become, arguably, the most successful and popular sustainability framework used worldwide. I contend that one reason for this is because it helps practitioners to achieve traction against complex issues by accounting for psychological, cultural, and systemic issues.

Ecovillage Living has an explicit integral framework that is at the heart of their approach to sustainability. The authors quote from Ken Wilber and recommend his books in their list of resources. Figure 8 below lays out their integral approach, which, in their own way, addresses the Big Three. It focuses on individual spiritual development, cultural sensitivity, and many social factors.
All of the sustainability books I analyzed did shift their focus periodically to each of the quadrants, although not in equal amounts as we have seen. In Appendix A I’ve compiled many examples of sustainability aspects and dynamics from seven of the eight books, organized into the quadrants. I hope that this compilation helps to hone the lenses of new Integral Sustainability practitioners as to which sustainability factors are revealed by each quadrant. Seasoned practitioners may also find that Appendix A shows subtle facets of sustainability that they normally wouldn’t consider in a quadrant analysis.
There are many sustainability books that focus specifically on different aspects of the Lower-Left or Upper-Left quadrants. To learn more about how to work with these dimensions of sustainability, consider the following resources.

<table>
<thead>
<tr>
<th>Sustainability Books which Focus on the UL</th>
<th>Sustainability Books which Focus on the LL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safeguarding our Common Future: Rethinking Sustainable Development (About the phenomenology of sustainability)</td>
<td>Global Sustainability: The Impact of Local Cultures, A New Perspective for Science and Engineering, Economics and Politics</td>
</tr>
<tr>
<td>The Self and the Other: Sustainability and Self-Empowerment</td>
<td>The Fourth Pillar of Sustainability: Culture's Essential Role in Public Planning</td>
</tr>
<tr>
<td>Fostering Sustainable Behavior: An Introduction to Community-Based Social Marketing (Based in social psychology)</td>
<td>Urban Crisis: Culture and the Sustainability of Cities</td>
</tr>
<tr>
<td>Psychology of Sustainable Development</td>
<td>Culture, Environmental Action and Sustainability</td>
</tr>
<tr>
<td>Psychology and Environmental Change</td>
<td>Tourism, Recreation, and Sustainability: Linking Culture and the Environment</td>
</tr>
<tr>
<td>The Psychology of Environmental Problems</td>
<td>Cultural and Spiritual Values of Biodiversity</td>
</tr>
<tr>
<td>A Spiritual Audit of Corporate America: A Hard Look at Spirituality, Religion, and Values in the Workplace</td>
<td>The Sustainability Effect: Rethinking Corporate Reputation in the 21st Century</td>
</tr>
</tbody>
</table>

In the following section, we’ll look at examples of how the quadrants are currently being used for the organization of sustainability knowledge, diagnosis of social and ecological challenges, and the design of integrated solutions. This will be followed by insights and guidelines into actually doing a quadrant analysis of a sustainability issue.
Quadrant Diagram Examples from Integral Sustainability Practitioners

This section offers 18 quadrant diagrams covering four different areas of sustainability:

- Leadership for Sustainability
- Urban and Community Sustainable Development
- International Sustainable Development
- Corporate Sustainability.

I will only describe the context of each diagram, without discussion; I merely want to show the many ways that this framework is being used by Integral Sustainability practitioners. For several of the areas, there are examples of each of the three main ways to use the quadrants: to organize information, diagnose an issue, or prescribe a solution.

Please understand that these quadrant diagrams are completely taken out of context. The diagrams should *not* be considered as a comprehensive representation of the author’s understanding about the issue. In most cases the diagrams serve to capture the big ideas and the major forces in each quadrant as the practitioner sees them. In all cases, these diagrams are part of a much larger, more complex analysis, which often also involve other elements of the Integral framework, especially developmental levels. For further details, please read the associated papers, or contact the authors directly.

**Quadrant Diagrams: Leadership for Sustainability**

This first example is from a paper by Gail Hochachka, Co-Director of the Integral International Development Center. In this quadrant diagram she identifies some of the different questions that are asked by different types of leadership. All of these questions, she states, offer important knowledge for finding a resolution or taking action.33
<table>
<thead>
<tr>
<th>UL:</th>
<th>UR:</th>
</tr>
</thead>
<tbody>
<tr>
<td>What do people believe about this issue?</td>
<td>What are the basic statistics of this issue?</td>
</tr>
<tr>
<td>How are people understanding or making-meaning of this issue?</td>
<td>What must people do to effectively address this issue?</td>
</tr>
<tr>
<td>How important is this issue to people (and to me)?</td>
<td>What needs to change in my behaviours and/or the behaviours of other individuals?</td>
</tr>
<tr>
<td>Is resolving the issue consistent with or counter to the values of the individuals directly affected?</td>
<td>What impact will the changed behaviour have on the issue?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LL:</th>
<th>LR:</th>
</tr>
</thead>
<tbody>
<tr>
<td>What group values are at play that impact this issue?</td>
<td>What structures need to be in place to problem solve and enhance effectiveness?</td>
</tr>
<tr>
<td>Does the culture support the resolution of this issue?</td>
<td>How do our current legal, financial, and human resources other system affect by the resolution of this issue?</td>
</tr>
<tr>
<td>Are communication channels present to assure that all view are aired?</td>
<td></td>
</tr>
</tbody>
</table>

Figure 9. Different types of leadership questions.

This next diagram is a classic example of using the quadrants to organize knowledge; in this case, past and current approaches to leadership.34
Marilyn Hamilton, founder of IntegralCity.com uses the quadrants in this diagram to organize different research methodologies which are available to the Integral Sustainability practitioner.35

---

**Figure 10. Different types of leadership approaches.**

<table>
<thead>
<tr>
<th>Upper Left—Intention</th>
<th>Upper Right—Behaviour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Includes the following aspects of leadership:</td>
<td>Includes the following aspects of leadership:</td>
</tr>
<tr>
<td>Emotional intelligence</td>
<td>Products</td>
</tr>
<tr>
<td>Motivation</td>
<td>Services</td>
</tr>
<tr>
<td>Intellect</td>
<td>Individual performance</td>
</tr>
<tr>
<td>Life experience</td>
<td>Peak performance</td>
</tr>
<tr>
<td>Intent</td>
<td>Competencies</td>
</tr>
<tr>
<td>Attitude</td>
<td>Personal capabilities</td>
</tr>
<tr>
<td>Commitment</td>
<td></td>
</tr>
</tbody>
</table>

**Examples of Leadership Approaches:**
- Theory Y
- Presenting
- "Full range of leadership" model

<table>
<thead>
<tr>
<th>Lower Left—Culture</th>
<th>Lower Right—Systems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Includes the following aspects of leadership:</td>
<td>Includes the following aspects of leadership:</td>
</tr>
<tr>
<td>Collective values and beliefs</td>
<td>Strategy and design</td>
</tr>
<tr>
<td>Ethics/integrity</td>
<td>Organizational design</td>
</tr>
<tr>
<td>Shared values</td>
<td>Decision-making systems</td>
</tr>
<tr>
<td>Morale and energy</td>
<td>Policies and procedures</td>
</tr>
<tr>
<td>Shared history, or shared experiences</td>
<td>Performance measures</td>
</tr>
<tr>
<td>“What really matters in this organization”</td>
<td>Networking</td>
</tr>
</tbody>
</table>

**Examples of Leadership Approaches:**
- Participatory leadership
- Adaptive leadership
- Learning organizations
- Leadership tools for dialogue and group work (such as compassionate listening, non-violent communication, among others)

**Examples of Leadership Approaches:**
- Systems Theory
- Team-Net
- Balanced Scorecard

---

The Four Worlds of Sustainability Draft September 3, 2006
<table>
<thead>
<tr>
<th><strong>Internal</strong></th>
<th><strong>External</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>I = Subjective / Intentional</td>
<td>IT = Objective / Bio-Physical</td>
</tr>
<tr>
<td>Mapping Lifelines</td>
<td>Air Pollution Analysis</td>
</tr>
<tr>
<td>Meditation</td>
<td>Water Purity Analysis</td>
</tr>
<tr>
<td>Reflection</td>
<td>Soil Analysis</td>
</tr>
<tr>
<td>Journaling Life History</td>
<td>Census Demographics</td>
</tr>
<tr>
<td>Awareness Practices</td>
<td>Literacy Levels</td>
</tr>
<tr>
<td>Intelligence Training</td>
<td>Performance Management</td>
</tr>
<tr>
<td>Emotional Intelligence</td>
<td>Regression Analysis</td>
</tr>
<tr>
<td>Multiple Intelligence Mapping</td>
<td>Biopsies</td>
</tr>
<tr>
<td><strong>Story Telling</strong></td>
<td><strong>School Grading</strong></td>
</tr>
<tr>
<td>Appreciative Inquiry</td>
<td>Hospital Accrediting</td>
</tr>
<tr>
<td>Focus Groups</td>
<td>Economic Measurement</td>
</tr>
<tr>
<td>Interviews</td>
<td>Employment Analysis</td>
</tr>
<tr>
<td>Dialogue</td>
<td>Asset Usage Analysis</td>
</tr>
<tr>
<td>Professional Reflective Practice</td>
<td>Industry Standardizing</td>
</tr>
<tr>
<td>Action Research</td>
<td>Empirical Research</td>
</tr>
<tr>
<td>Shamanic Journeying</td>
<td>Statistical Analysis</td>
</tr>
<tr>
<td>Social Service Evaluation</td>
<td>Engineering Standards</td>
</tr>
<tr>
<td>WE = Intersubjective / Cultural</td>
<td>ITS = Interobjective / Social</td>
</tr>
</tbody>
</table>

Figure 11. Examples of research methodologies in the Integral framework

Tam Lundy, a specialist in an Integral approach to community development, uses the quadrants here to organize different types of transformational and educational tools which one can use to help effect social and environmental change.\textsuperscript{36}
In this example, Hochachka uses the quadrants to categorize the different methodologies her consulting group used to do an integrally-informed organizational assessment of One Sky – Canadian Institute for Sustainable Living.³⁷
Experience

The ownership, commitment and motivations of the individuals involved

We sought to create time and space (through the interviews and workshops) for individuals to reflect on their work.

We inquired into what brings people joy/challenge, what is their motivation for this work, what in their jobs would they like to see fostered or promoted, and what areas need attention and further improvement?

We also did our own reflective practices of connecting with our intuition and “gut feelings”, checked our own biases, and carried out “grounding” practices.1

<table>
<thead>
<tr>
<th>Culture</th>
<th>Systems</th>
</tr>
</thead>
<tbody>
<tr>
<td>The culture and processes of decision-making, visioning, sharing information and communications</td>
<td>The organizational structure and outcomes</td>
</tr>
<tr>
<td>We sought to provide a creative and reflective space during the AGA workshops (see LR) to encourage reflection and new perspectives on some more implicit aspects to the organization (i.e. values) and also link those to their own individual/shared experiences of change.</td>
<td>We reviewed One Sky’s documentation (Annual Reports, strategic plans, etc.).</td>
</tr>
<tr>
<td>We reflected back some of our preliminary findings, including concerns/issues with respect to progressive thought, to One Sky’s team of employees, coordinators, board and ED during the AGA, which stimulated dialogue on some of these (discussed in Part Two, below).</td>
<td>We observed how One Sky works together, how staff communicate and arrive at outcomes.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Behaviour</th>
</tr>
</thead>
</table>

The capacities and skills of individuals

We conducted personal interviews with staff, managers, coordinators, board members, northern partners, and volunteers to hear what people do with the organization and what skills they bring.

Figure 13. Methodologies used as part of an Integrally informed organizational assessment.
The following is a guided meditation through the quadrants, originally developed by Joseph Friedman. It has been used by Negash Shiferaw in Ethiopia as part of his Integrally informed international development consulting practice.  

<table>
<thead>
<tr>
<th>INTERIOR: Individual (I)</th>
<th>EXTERIOR: Individual (IT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Regarding this program please notice your intentions, your commitments, your beliefs, your attitudes, your feelings. PAUSE 1 MINUTE OR SO . . . Thank you.</td>
<td>- Notice your breathing. Just notice the breath going in and out. Pause 30 seconds. If you want to close your eyes that is ok, if not that is ok. - Notice the sensations in your body. Start with your toes and notice any feelings or sensations in your toes, good, just notice anything that is there to feel Thank you... [NOTE TO LEADER: GO SLOWLY UP THE BODY WITH THE SAME INSTRUCTIONS. THE INTENTION IS JUST TO BRING AWARENESS TO THEIR EXPERIENCE ]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>INTERIOR: Collective (WE)</th>
<th>EXTERIOR: Collective (ITS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Regarding this program please notice the values, beliefs, agreements, attitudes you and others share. What can you say about how WE are (whoever WE is for you) PAUSE 1 MINUTE OR SO. . . Thank you.</td>
<td>- Regarding this program please notice how we are behaving what we are doing, please notice also any sets or systems of things that are involved in this program – the transportation networks, the institutions, the hotels etc. PAUSE 1 MINUTE OR SO</td>
</tr>
</tbody>
</table>

Figure 14. A guided meditation through the quadrants.

Quadrant Diagrams: Sustainable Urban and Community Development

Within the realm of urban and community development, a superb quadrant example, which also includes developmental levels, has been created by Marilyn Hamilton. Called the “Spiral Flower Values Map of Abbotsford”, it is a detailed diagram of research results from a community survey in which Hamilton maps out the values of a community. The diagram is too large to be inserted here, but can be found at:
This next example comes from Bettina Geiken. It is part of Project Shams: Sustainable Human Activities in Mediterranean Urban Systems. In this quadrant diagram she organizes a list of possible progress indicators for the project, as part of an internal evaluation.\(^\text{39}\)

<table>
<thead>
<tr>
<th>Subproject 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elaborate a sustainable development strategy, in particular the cultural, touristic and socio-economic valorisation of the historical and cultural heritage. [Partner cities: Rome (Italy) and Bosra (Syria), with the support of Maldia (Tunisia)]</td>
</tr>
</tbody>
</table>

| Perception that qualification has been improved through training |
| The individual scores in the self-evaluation |
| Ability to transform information into a finished and/or professional product. |

| Office set up |
| No and nature of involved stakeholders |
| No of trained personnel |
| No of training sessions |
| No of field visits |
| No of consultation meetings |
| No of expert visits and meetings |

| Satisfaction of the stakeholders with the Strategic Environmental Assessment (SEA) process. |
| Satisfaction of the citizens with the initiatives of the municipality |
| The existence of internal meeting in the municipality to prepare all the personnel for the implementation of the strategic plan |
| Types of trainings used (how far do they stretch level/v-meme of the participants) |
| Level of cooperation between the different departments and/or administrative levels |

| Stakeholder process has taken place |
| New models for public-private partnership discussed or under discussion |
| New development plan approved |
| Change in the information flow in the stakeholder and municipal system |

![Figure 15. Possible progress indicators for an urban sustainability project in the Mediterranean.](http://www.integralcity.com/Maple%20Leaf%20Meme%20Proj/Spiral.flower.icity.pdf)

Continuing in the Mediterranean, the following comes from Anne Caspari at the University of Rome. It shows how the quadrants can be used to help diagnose sustainability challenges. In this case, issues around rehabilitating a waterway in the Roman metropolitan area. This is a European Union funded project.\(^\text{40}\)
**“Ripples in the Pond”: Problem Solving with Secondary Water Course Rehabilitation in Rome Metropolitan Area**

**Integral planning (Ken Wilber): AQAL All Quadrants All Levels**

<table>
<thead>
<tr>
<th>Upper left (individual interiority)</th>
<th>Upper right - (individual behavior)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal responsibility of users and leaders: single persons, private initiative (green)</td>
<td>Water quality: extremely bad, IV, V</td>
</tr>
<tr>
<td>Environmental awareness: beginning with new generations</td>
<td>quantity: 1000 mm/a, distribution winter month</td>
</tr>
<tr>
<td>Personal Integrity: abusive system</td>
<td>Soil bio engineering methods: limited, presence of sewage collector, solid rock, lack of water, lack of maintenance</td>
</tr>
<tr>
<td>Value Meme (spiral dynamics): blue, red</td>
<td>user habits: violence, destruction, little problem awareness</td>
</tr>
<tr>
<td>Information and education: beginning</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lower left (collective culture)</th>
<th>Lower right (collective systems)</th>
</tr>
</thead>
<tbody>
<tr>
<td>water traditionally abused</td>
<td>Law and regulations not comprehensive, not implemented, habit rights</td>
</tr>
<tr>
<td>little respect of laws and regulations</td>
<td>Polluter pays principle: not applied</td>
</tr>
<tr>
<td>low environmental awareness, cultural approach to nature: abusive</td>
<td>Strategic spatial planning: crisis management</td>
</tr>
<tr>
<td>v-meme structure: blue, red in periphery</td>
<td>Urban systems: planning by doing, social problems in periphery, violence</td>
</tr>
<tr>
<td>little openness to innovation, participation</td>
<td>Provision of basic infrastructure: crisis management</td>
</tr>
<tr>
<td>Administrative habits: inertia, little problem awareness</td>
<td>Administrative system: competition</td>
</tr>
<tr>
<td>Openness to sustainable uses: beginning</td>
<td></td>
</tr>
</tbody>
</table>

**Figure 16. Use of the quadrants to diagnose challenges to Roman waterway rehabilitation.**

The following diagram shows how the quadrants can be used to prescribe a solution, or specifically in this case, to envision an ideal future. This was developed by Tam Lundy as part of her Integral community development work in British Columbia. 41
Figure 17. Use of the quadrants to envision the potential of a community.

Wilber has often noted that it's hard to create an Integral person, but easy to create an Integral team. In this piece, Marilyn Hamilton develops an integrated community emergency response team for complex adaptive bio-threats (like Avian flu). Collectively, this team would be able to respond to the full spectrum of needs of a community in a major crisis.⁴²
<table>
<thead>
<tr>
<th>Needs</th>
<th>Examples</th>
<th>Organizations on ER Team</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subjective needs</td>
<td>emotional, mental, spiritual</td>
<td>Trauma specialists</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Grief Counselors</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Learning &amp; Education Institutions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Spiritual &amp; Religious Orgs.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Arts &amp; Culture Orgs.</td>
</tr>
<tr>
<td>Objective needs</td>
<td>food, shelter, clothing, medical</td>
<td>Emergency Response Teams (fire, medical, police)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Salvation Army</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Red Cross</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Food, energy, water producers, processors, suppliers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hospitals, Doctors, Nurses</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Healers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Health &amp; Wellness Experts</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Academic and Private Scientists</td>
</tr>
<tr>
<td>Intersubjective needs</td>
<td>belonging, beliefs, relationships</td>
<td>Change Facilitators</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Spiritual &amp; Religious Orgs.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Arts &amp; Culture Orgs.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Team Building Orgs (Trainers, Facilitators)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Law &amp; Order</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Justice &amp; Governance specialists</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lawyers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Communications &amp; Media specialists</td>
</tr>
<tr>
<td>Interobjective needs</td>
<td>food preparation, clothing</td>
<td>3 Levels of Government</td>
</tr>
<tr>
<td></td>
<td>distribution, shelter systems,</td>
<td>City Infrastructure</td>
</tr>
<tr>
<td></td>
<td>engineering, communication</td>
<td>Telecommunications</td>
</tr>
<tr>
<td></td>
<td>technology</td>
<td>Chamber of Commerce</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Economic Developers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Business Leaders</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Science &amp; Technology leaders</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Environment &amp; Ecology specialist</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Infrastructure Specialist: Heat, Light, Power</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Transportation Orgs</td>
</tr>
</tbody>
</table>

Figure 18. Designing an integrated community emergency response team.
For the final example concerning urban and community sustainability, we zero in on a specific application of the quadrants by architect and professor Mark DeKay. In this piece, he organizes many of the dimensions and aspects of an integral approach to daylighting (creating built environments which use natural daylight).^43

![Figure 19. Exploring a model for Integral Sustainable Design through daylighting.](image-url)
Quadrant Diagrams: International Development

My experience suggests that integral approaches are used more often in international development than in any other discipline to date. Two of the key reasons for this are as follows. First, the field is incredibly complex—incorporating factors from dozens of other disciplines, ranging from medicine to politics to education to satellite imaging—and as such it demands complex and advanced thinking to generate sustainable results. Secondly, a number of leaders within the United Nations system started drawing from Wilber’s writing and that of other integral theorists in the late 1980s and early 1990s. Nearly 30 years later, considerable field experience with integral approaches has been documented, although much remains to be learned and tested. In recent papers, both Gail Hochachka and I have documented and studied how some leaders within the United Nations Development Programme (UNDP) and United Nations Children’s Fund (UNICEF) are currently using integral approaches in over 30 countries to reverse the spread of HIV/AIDS. Most of the following examples are drawn from the work being done by these UNDP leaders and by those whom they have trained in the methodology.

This first example comes from Negash Shiferaw. It is a diagnosis of some of the major forces contributing to charcoal production and the ensuing deforestation near Lake Zeway in Ethiopia.
As part of a UNDP leadership development program, the quadrants were used by participants in Swaziland to map the epidemic. They completed the following example.\(^4^6\)

---

<table>
<thead>
<tr>
<th>INTERIOR: Individual (I)</th>
<th>EXTERIOR: Individual (IT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual commitments to get money for:</td>
<td>The following visible actions:</td>
</tr>
<tr>
<td>- food</td>
<td>- a person cutting trees</td>
</tr>
<tr>
<td>- clothing</td>
<td>- a person making charcoal</td>
</tr>
<tr>
<td>- medication</td>
<td>- soil erosion and land degradation</td>
</tr>
<tr>
<td>- chewing chat (a local drug leaf like mariwana)</td>
<td>- reduced tree density</td>
</tr>
<tr>
<td>- to go to cities to have drinks and go out with women</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>INTERIOR: Collective (WE)</th>
<th>EXTERIOR: Collective (ITS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The norms and values of the community:</td>
<td>Issues of:</td>
</tr>
<tr>
<td>- it is acceptable to make money from trees</td>
<td>- non existence or low enforcement of law</td>
</tr>
<tr>
<td>- community value towards trees is indifferent</td>
<td>- existence of markets for charcoal</td>
</tr>
<tr>
<td></td>
<td>- lack of support for alternative energy sources</td>
</tr>
</tbody>
</table>

Figure 20. Quadrants used to diagnose major dynamics contributing to charcoal production in Ethiopia.
The following diagnosis of the multiple dimensions of HIV/AIDS comes from Hochachka. She developed this after interviewing people that helped to create the UNDP HIV/AIDS Group’s leadership development program that draws upon integral approaches.⁴⁷
**Figure 22. Understanding the multiple dimensions of HIV/AIDS**

This is a prescriptive quadrant diagram which aims to help find a response to HIV/AIDS that incorporates dynamics from each of the quadrants. This also comes from Hochachka.  

<table>
<thead>
<tr>
<th>INTERIOR: Individual (I)</th>
<th>EXTERIOR: Individual (IT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual attitudes and beliefs about one's self in relation to this virus.</td>
<td>Spread of a virus in the body.</td>
</tr>
<tr>
<td>Individual values that support behaviors (which contract or not the virus)</td>
<td>Behaviors and actions taken to contract or not the virus.</td>
</tr>
<tr>
<td>Individual perspectives of the infection/virus.</td>
<td>Education around what HIV/AIDS actually is.</td>
</tr>
<tr>
<td>Ways of thinking that inform and form concepts of the virus.</td>
<td></td>
</tr>
<tr>
<td>Spirituality/religion that influences all other quadrants in relation to virus.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>INTERIOR: Collective (WE)</th>
<th>EXTERIOR: Collective (ITS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cultural worldviews of the virus, which form a basis for its spread or decrease.</td>
<td>A societal system that does/doesn’t legislate against behaviors that increase infection.</td>
</tr>
<tr>
<td>Traditional norms that feed or starve the virus’ spread.</td>
<td>A societal system that needs policies to support those who contract it.</td>
</tr>
<tr>
<td></td>
<td>A solid economy and political will to educate, provide services and stop the spread.</td>
</tr>
</tbody>
</table>
We now shift from HIV/AIDS in Africa to use of the quadrants to support communications around climate change issues in Australia. Chris Riedy, from the Institute for Sustainable Futures, based his Ph.D. thesis in Integral Sustainability. As part of his research he has developed a proposal for a nation-wide climate change communication project, under the working title of National Conversation on Climate Change (NCCC). He notes that

The NCCC aims to stimulate public debate on Australia’s response to climate change by undertaking a series of high-profile citizen forums in all Australian states and developing an associated website and other media outputs. In addition to the Integral framework, the NCCC is inspired by theorists of deliberative and discursive democracy, who emphasize the role of discursive contestation, deliberation and communication in an authentic democracy.
The following diagram shows some of the ways that the design of the NCCC seeks to address all quadrants.  

![Diagram showing the use of quadrants](image)

**Figure 24. Use of the quadrants to design a national conversation on climate change in Australia.**

**Quadrant Diagram: Corporate Sustainability**

The following analysis of Interface’s corporate sustainability initiatives was done by Cynthia McEwen of Avastone Consulting. It was part of a larger proposal to improve their overall corporate sustainability program. For further examples of corporate sustainability issues as seen through the quadrants, please see Appendix A.
<table>
<thead>
<tr>
<th>Individual – Interior</th>
<th>Individual – Exterior</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Intrapersonal consciousness, intentions, personal values, attitude, commitment (cognitive, emotional, spiritual)</strong></td>
<td><strong>Behavioral, skills, performance, capabilities</strong></td>
</tr>
<tr>
<td>Playing to Win (1993-94) (mindsets, sharing emotions)</td>
<td>Playing to Win (1993-94) (productive team member/interpersonal behavior, communication skills)</td>
</tr>
<tr>
<td></td>
<td>Sustainability Training/Leaning (2000-)</td>
</tr>
<tr>
<td></td>
<td>SocioMetrics (2001-)</td>
</tr>
<tr>
<td></td>
<td>QS 9000/ISO 9001/ISO 14001</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Collective – Interior</th>
<th>Collective – Exterior</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Worldviews, culture, vision, values, stories, ethics</strong></td>
<td><strong>Strategies, systems, policies, measures, work processes, technologies</strong></td>
</tr>
</tbody>
</table>

Figure 25. Use of the quadrants to analyze Interface’s corporate sustainability initiatives.
Guidelines for Doing a Quadrant Analysis

There are many ways to use the quadrants to reveal useful information and aid in the design of integrated solutions to environmental, social, and economic challenges. As we’ve seen in the many examples above, it can be as simple as jotting down the influences which are most obvious in each quadrant.

The key is to try it yourself, to gain fluency, to find your own effective style. As Bettina Geiken notes, “There is no ‘right’ way to build the matrix. It’s experiential; the more you use it, the easier it becomes to see/sense the interconnections between quadrants and access knowledge in the individual or the group.” In this section we’ll visit two similar—yet more sophisticated—approaches to doing a quadrant analysis, as well as a useful twist called a “multi-layer AQ scan.”

One Integral Sustainability practitioner, Cameron Owens, has developed a sophisticated approach to identifying forces that inhibit or enable sustainable behavior. He refers to it as identifying the “I”, “We”, and “It” barriers and supports. His approach is encapsulated in figure 26.
Building upon Owen’s work is a similar approach I developed called the Q-DyTS problem solving process. (Q-DyTS stands for Quadrant Dynamics: Thwarting or Supporting.) The entire process is documented in Appendix B, with a brief overview offered here.

1. Clarify the initiative or central issue to be addressed.
2. Identify the forces revealed by each quadrant which might support the initiative or help resolve the issue.
3. Identify the forces revealed by each quadrant which might thwart the initiative or hinder resolution of the problematic issue.

4. Choose the thwarting and supporting forces which seem likely to have the greatest influence on the ultimate success or failure of your efforts.

5. Design an integrated response which addresses the major thwarting forces and builds off of the most influential supporting forces. Use tools and methodologies appropriate to each quadrant to respond to forces in that quadrant.

6. Implement the response.

7. Measure results to the greatest degree possible. Gather feedback.

8. Repeat process and design a more tailored response, based upon previous results and feedback.

Figure 27 is a chart developed by Gil Friend which organizes the key information gathered in the first few steps of the Q-DyTS process. An example of a completed Q-DyTS chart is in Figure 28. For this piece, Friend analyzed an initiative to help a major US city become more sustainable. He specifically identified the key supporting and thwarting influences upon the group which leads the initiative.
Figure 28. The key supporting and thwarting influences upon the group which leads a major city's initiative to become more sustainable.
A final insight into how to analyze a sustainability initiative using the quadrants comes from developmental psychologist Susanne Cook-Greuter. She calls it a “multi-layer AQ scan,” where AQ stands for “All Quadrants.” This is how it works. Anything can be looked at through the four quadrants. Therefore, any force which influences a sustainability initiative and is “placed” in a quadrant during an analysis, can in turn be pulled out and itself viewed through the quadrants. Figure 29 visually explains this.

For example, drawing from Figure 28, “fatigue” is a thwarting force identified in the Upper Right; it adversely affecting the city sustainability working group. To respond to the issue of fatigue, a quadrant analysis of “workgroup fatigue” could be done which identifies the

Figure 29. Multiple layers of quadrant analyses can uncover additional leverage points and influences.
influences from each quadrant upon an individual’s fatigue. Leverage points may be identified by doing this sort of analysis that were not seen before.

This practice is particularly useful for analyzing the “uncontrollable” forces identified when doing a quadrant analysis of an issue. By engaging in a multi-layer scan, it may be possible to eventually identify controllable levers that can influence a previously-considered uncontrollable force.

**Conclusion**

This paper is an attempt at an introductory guide for sustainability practitioners who want to use and benefit from the Integral framework. Specifically, I have focused on the quadrants element, and have left the other elements—levels, lines, states, and types—for future inquiry. My intention has been to show, through numerous real-life examples, the tremendous practicality of a quadrant analysis, and to make the analytical process itself less daunting and more user-friendly. Along the way, I also detailed the philosophical lineage of the quadrants, shared some initial research concerning popular sustainability books as seen through the quadrants, and outlined a nine-step problem solving methodology for sustainability initiatives.

Yet fundamentally, I have only focused on the tool—a quadrant analysis. I have not focused on the tool user. The more conscious the tool user, the better the tool can be wielded. A basic quadrant analysis can be accomplished by anyone who can understand systems; typically this capacity arises with formal operational cognition. Yet increasingly sophisticated quadrant analyses become possible as someone gains the capacity to understand systems of systems, or even systems of systems of systems. With each leap in our cognitive awareness, we find increasingly sophisticated and nuanced dynamics within, and between the quadrants. One of the most advanced Integral Sustainability practitioners I know doesn’t even do this sort of quadrant analysis anymore; he focuses nearly entirely upon the dynamics between the quadrants. And of course, there are four other key elements of the Integral framework one
could take into consideration when doing an analysis of a sustainability issue and designing an intervention.

Integral analysis can become quite complex very fast. Yet I want to end by sharing a key insight I have learned from working alongside veteran Integral practitioners. A good Integral response tends to be simple. It represents the simplicity on the other side of complexity. Integral responses don’t need to be, and really shouldn’t be, incredibly complex whole-systems interventions that simultaneously address all dynamics in all quadrants, in all levels, in all states, in all types. It’s exhausting just thinking about trying to create something like that, much less implementing it and trying to develop metrics to monitor it. Rather, a good Integral response is based upon an analysis which uses the Integral framework to help identify the key leverage points which will have the greatest positive influence upon the initiative. For the actual intervention, the practitioner consciously pushes on the few key levers and observes the ripples as they spread through the rest of the quadrants and how the whole system changes.

Do I have any examples I can point to where this has been done and comprehensively documented? No. Do I know that it is possible, that people are doing it, and that you can do it? Yes. While we have come a long way in our understanding and application of Integral Theory in the field, there is still considerable distance to travel to truly understand how to do sophisticated, effective, sustainable, and simple systemic interventions that serve the long-term health and well-being of humanity, all life, and all of consciousness. I invite you to actively join us on this quest for understanding. As you practice with this methodology in the field, relay to us your successes and challenges. Step by step, brick by brick, insight by insight, we will build a collective intelligence and an institutional knowledge that will make this work far easier for our children and grandchildren to come.
Appendix A: Specific Examples of Sustainability Issues and Dynamics from Seven Popular Sustainability Books

Psychological and Experiential Aspects of Sustainability: Upper-Left Quadrant Examples

- Internal dedication to transforming commerce to a restorative undertaking.  
- Logic of argumentation  
- Faith in technology  
- The reason why a farmer becomes involved in the production of biofuels  
- The aesthetics (or lack thereof) of suburban sprawl and strip malls  
- Food worry. For some, it’s about whether they will eat at all today; for others it concerns whether they will eat too much and gain weight  
- A mother’s better understanding of nutrition (which leads to her child being well nourished)  
- An individual’s choice to oppose or to champion a sustainability initiative  
- The aura of contentment from working in the garden  
- The improvement of mental health and psychological well-being from gardening  
- The feeding of people’s souls by the bountiful and beautiful gardens of Urban Agriculture  
- Ecopsychology  
- The effects of the Exxon-Valdez oil spill on the emotional health of a fisherman  
- Enjoyment and delight sapped away by today’s industrial infrastructure  
- A designer’s decision to leave behind a positive design legacy  
- The spiritual and imaginative depth that nature can inspire  
- Wisdom that allows one to “see the hollowness and fundamental unsatisfactoriness of a life devoted primarily to the pursuit of material ends”

1 The biophilia hypothesis “argues that those who are deprived of contact with nature suffer psychologically and that this deprivation leads to a measurable decline in well-being.” [Brown, p. 221]. The “asphalt complex” is a result of this deprivation.

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The beauty, creativity, fantasy, enjoyment, and inspiration that falls by the wayside with a focus purely on eco-efficiency.  
One’s love of the outdoors  
Fun and pleasure derived from the use of, and even discarding of, a well-designed product  
The “design filter” – a filter that is in the designer’s head, instead of at the end of a pipe  
The intellectual framework of The Natural Step  
The power of taking a stand for what you passionately believe  
The use of metaphors to understand reality. Our metaphor-frames that provide us with a context to interpret reality, yet also create blind spots—where we don’t see things that are out of our frame.  
Our own self-deception, where most of us don’t really know the net effect on the planet of how we live  
The belief that we are separate from nature, exempt from natural constraints, or too small relative to natural systems to make a difference  
The human ingenuity and humility required to bring about sustainability  
System thinking, thinking in wholes, being able to see the whole picture  
The need for meaningful work  
A perceptual breakthrough, understanding the new paradigm that true ecological sustainability is not a cost to the company, it is a source of profits and competitive advantage  
The vision of a leader (like Interface’s Ray Anderson)  
Engaging in psychotherapy to support an organization’s change process  
One’s sense of “personal sustainability” and the philosophy behind it  
A proactive attitude toward positive change  
One’s sense of purpose—feeling that the work you do and what the organization does collectively truly does make a difference  
Being unable to read or write
The broader perspective required to deal with environmental problems that encompasses the factors underlying world poverty and international inequality.

Enjoying natural beauty for its own sake.

Ignorance of the distant consequences of today’s decisions.

Personal attitudes to health, nutrition, and child-bearing.

Greater awareness of everyday environmental factors.

The basing of understanding of environmental processes and development on traditional beliefs or information from a conventional education.

The increasingly impersonal relationship between farmers and the soil.

The priorities of resource-poor farmers.

A farmer deciding when to plant, water, fertilize, and harvest crops.

A feeling of unity with Nature.

Personal creativity and unfolding.

Dreaming and imagining how things can be better.

Selfishness and greed.

The quality of love one brings to ecological restoration work.

Self-esteem.

Personal transformation.

Meditation as an interior discipline.

Mental balance achieved as a result of spiritual development.

 Consciousness in which Nature becomes an abstraction, something ‘out there’ to be viewed through a window or on a video screen.

Personal integrity.

Recognition that anything I see outside myself—any criticisms, irritations or appreciations—may also be reflections of what is inside me.

Recognition that there may be wider perspectives than my own and deeper issues than those that immediately concern me.

The transformation of motivation from anger/fear/despair to compassion/love/purpose.

Non-attachment to outcome.

Opening oneself to the pain of the world.

A happy employee.

Poisoning the soul with artificiality.

Spiritual challenge.

How a designer thinks, the design mentality.

Mental spectacles that reveal the previously invisible waste all around us.

“a highly satisfying psychological condition of flow” resulting from when people have a clear objective, intense concentration, no distractions, immediate feedback on their progress, and a sense of challenge.

Philosophical framework.

A genuine understanding of what a resource really is (the word comes from the Latin resurge, to rise again).

A true resource is something that returns over and over again, because it is part of a cyclical process.

To think in terms of the integrity of systems.

Ecological thinking.

A framework for both understanding and action.

Realization and insight.

The satisfaction from meeting objectives, achieving goals, acting with integrity.

The cost-consciousness of an informed farmer.

Knowing that something is actually possible so you can choose to do it.

The exploiting of a people’s willingness to let markets work.

An understanding of what not to do.

The fundamental concern of where one’s next meal comes from.

A recognition of how much is enough.

Behavioral and Bodily Aspects of Sustainability: Upper-Right Quadrant Examples

An individual’s embodiment of the strains and demands we collectively place upon the environment.

The act of testing soil quality.

Toxin level in the blood of a newborn.

An individual’s use of throwaway products.

The use of condoms to prevent the spread of HIV.

Strong personal leadership by President Museveni of Uganda to stem the spread of HIV/AIDS.

The use of more water-efficient irrigation technologies.

“Moving down the food chain” by reducing the consumption of foods that require large amounts of grains and water to produce.

Replacing inefficient refrigerators, switching to high-efficiency light bulbs, and insulating roofs.

Bicycling to work and its advantages to one’s health.
Composting
Signing up to pay for green power from a local utility
Employee and management competence and skills relating to sustainability
Whether or not political leaders respond to the great issues of our time
Lobbying for an increase in funding to international assistance programs and a cut in military appropriations
To educate oneself on social and environmental issues
To reduce individual consumption
Industrial chemicals in some plastics that are endocrine disrupters, mimicking hormones
Lung damage caused by particulate pollution from incineration and combustion processes
Translation of a mental model of sustainability into daily work practices
A plant’s ability to photosynthesize
Getting all employees to try to apply sustainability concepts

Feeling hungry
Exposure to nuclear radiation resulting in cancer or the alteration of genetic material and hereditary defects
The handling of potentially hazardous chemicals with appropriate care by workers and users
Where someone chooses to live (city, suburbs, country, squatter settlement)
Local leadership
Integral transformative practice
Observation of the natural world to identify patterns and qualities
Service to others and the planet
Play, to stimulate the creativity required for new solutions
Lobbying for support, paying for favors
Thermal, visual, and acoustic comfort resulting from good design; the ability to physically alter the environment to be more comfortable
Jaime Lerner as a charismatic, compassionate, and visionary leader as mayor of Curitiba, Brazil

Cultural and Communications Aspects of Sustainability: Lower-Left Quadrant Examples

Interpretation of Book of Genesis to justify human dominion over the planet
Purpose of a corporation
Cultural impact of American marketing on traditional cultures
Cynicism and distrust toward big business
Mutual understanding (or lack thereof)
A corporation’s public image
How a culture’s concept of time is reflected in their social and environmental attitudes
The allure, ease, wonder, and convenience of materialism which tempts a culture
Traditional methods of healing and nourishment, rites and oral histories
Public understanding of the purpose of green taxes
A population’s allegiance to warlords, tribal chieftains, or religious leaders
Appropriate role models for youth
Rumors that vaccinations can render people sterile or cause AIDS
A stigma associated with AIDS
The “throwaway mentality” that evolved during the last century
Concerns about climate change which drive the push to develop wind power in Europe

The emotional health of a city, enhanced by parks
Frustration within the sustainable development community about how to mobilize the support necessary to effect wide-scale social and environmental change
Public stigmatization toward a company due to unethical ecological and/or social behavior
A corporation’s understanding and commitment to the organizational learning disciplines as a prerequisite to a successful transformation to sustainability
The vocabulary and meaning behind the “less bad approach” – reduce, avoid, minimize, sustain, limit, halt
Moral proscriptions
An inspiring and exciting vision of change
Guiding principles which support an eco-effective vision
The regional and cultural relevanc of Nike’s product take-back programs
The need to develop a more precise definition of sustainability
A corporation’s overall attitude toward the environment

The Four Worlds of Sustainability
Draft September 3, 2006
A vision of what corporations can become—and need to become—in order to contribute to the healthy continuation of the communities of which they are a vital part.

A company taking on a higher purpose to their business mission

Organizational and social blind spots caused by the metaphor-frames we use to interpret reality

An organization’s operating norms and assumptions

The expanded definition of a business’s environment and stakeholders, to include a sense of evolutionary responsibility

The creation of a shared mental framework concerning sustainability

The operating principles of a sustainable society

Collective recognition that the environment and economy are integrally linked

Customer pressure from more environmentally concerned citizens, boycotts, and bad publicity

Credibility in the employee’s eyes about company environmental policy

Employee sense of purpose and mission

Interface’s powerful esprit de corps, loyalty, and commitment among associates

Dialogue about sustainability and how to put it into practice

A shift in the dominant paradigm, overarching mental model, of an organization’s culture

The sustainability goals of an organization

A collective refocusing on what is most important throughout the corporation to accelerate involvement and innovation

Feedback at every level of the change process to reinforce learning and involvement and help move ideas into action

Top management group support for sustainability

Communication to suppliers about the company’s new expectations concerning sustainability

The rules of conduct and moral framework that guide a company’s decisions and actions

Business ethics - because sustainability is “the right thing to do”

Our cultural and spiritual heritage

Collective commitment required by organizations, businesses, institutes and governments to bring about sustainable development globally

Collective confidence (or lack thereof) in international organizations

The basic human right of self determination

Controversy and consensus over global environmental and social data

Our collective understanding of security, and the shift from seeing it just in terms of political and military threats to also the growing impacts of environmental stress

Blind faith in science’s ability to find solutions

Social and civic responsibility

The ecological awareness and adaptive capacities of isolated indigenous or tribal peoples

Social discrimination and cultural barriers

A careful and sensitive consideration of the interests and rights of others as the touchstone of sustainable development policy

The ethical problems posed by the development of some new technologies

The development of consumer awareness about sustainability issues

Ensuring that clear directions for the use of potentially hazardous chemicals are provided in common local languages

A commitment to the fullest possible disclosure of information about the properties and production processes of chemical substances and their risks

The gross ignorance of a firm’s labor of the destructive effect on the environment by that organization

The views of non-governmental organizations and the local community about the planning of new industrial facilities

The disclosing of potential risks of new industrial facilities to nearby residents in an easily understandable manner

The lack of expertise, authority, and credibility of local governments to deal with local problems

The differences in how varying societies view private land ownership and land use rights

A new ethos for building an understanding among people, countries, and regions

Political tension which causes and effects environmental stress

The elevation of sustainable development to a global ethic, resulting in greater willingness and cooperation to combat international poverty, maintain peace, and manage the global commons

The moral support necessary for NGOs in developing countries to carry out their role effectively

The will of the people, their legitimate aspiration

A high level of commitment by all countries to the satisfactory working of multilateral institutions
Creating the optimal learning environment in a community to release human genius and deepen mutual support.

Fostering a sense of joy and belonging through rituals and celebrations following natural cycles.

Storytelling.

A women’s movement which is based upon cooperation with men and solidarity between women.

The use of Buddhist principles such as loving-kindness, compassion, equanimity, truth, non-violence, and self-denial to support community development activities.

The psychological infrastructure in the community, built by bringing villagers together through voluntary community action.

Idealized images of western consumer culture which undermine the local economy and erode cultural self-esteem.

Integrating a hotel into its place and its peoples.

How the sense of community is affected by the placement of structures on the land.

A cultural framework for eliminating waste.

Opposing interests of different parties.

The level on which discourse about sustainability should take place.

Gap in understanding between two parties.

Calling the whole concept of sewage into question.

The misinterpretation of regulations and standards. Standards meant to establish a “floor” have with time come to be interpreted as a ceiling or as an economic optimum.

A “North Star” for an organization to steer by.

A clear destination that our society wants to reach and a plan for how we will get there.

Unsound methods of exploiting human resources that destroy the social integrity of a culture so that it can no longer support the happiness and improvement of its members.

Cultural creativity to find worthier ways of employing people that also protect and enhance ecosystem and social-system services.

An undervalued workforce that fears layoffs, thus corroding community and undermining civil society.

The better levels of community spirit that Curitiba has over its neighboring cities.

Curitiba’s widely shared public vision that transcends partisanship.

Honoring and preserving Curitiba’s rich ethnic heritage.

The emerging attitudes about the purpose of the city (Curitiba) and its inhabitants.

City Hall’s credibility, public expectations, and the granting of broad-based legitimacy to the city’s interventions.

A community’s solidarity.

The user-friendly customer-service orientation of all municipal services in Curitiba.

The central political principle of Curitiba: to respect the citizen/owner of all public assets and services because people deserve respect and if they feel respected, they will assume responsibility to help solve other problems.

The environmental debate and its different sides.

A positive bias toward the future based upon technological optimism.

Common framework of understanding about the functions of earth itself and the dynamics of society.

The interpretation of data is subject to culture, education, and outlook, but the basic principles that govern the earth are well established and commonly agreed upon by all scientists.

A fundamental reevaluation of business’s roles and responsibilities.

The kind of future people envision for their children and grandchildren; their shared wants.

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Systemic and Structural Aspects of Sustainability: Lower-Right Quadrant Examples

Pollution permits.

“Products of service” model (to pay for just the service, such as floor-covering, not to own the product).

Reality that markets don’t convey the true cost of a purchase.

System to educate consumers about the whole story, giving them full information, about the true cost of any item.

Government policy, such as cost/price integration, to set market conditions to enforce payment of all true costs.
The lack of impact on a company's stock market shares or bonds if they damage a culture with their practices. Physical representation (or lack thereof) of small businesses, farms, churches, environmental organizations, or unions in the GATT/World Trade Organization talks. Conservation "feebeates". Value of environmental services in the market. Illiteracy rate of women. Level of mercury in a lake. Social, economic, political, and military indicators used to identify "failed states". The planned Great Green Wall of Trees stretching 7,000 kilometers across Africa to help halt desertification. The elimination of water subsidies and energy subsidies. Higher water prices. A personal transportation system which includes plug-in cars powered by wind-generated electricity. The lack of small-scale credit programs to finance the spread of solar cell use in villages. All types of energy: geothermal, solar, wind, coal, oil, biofuels, nuclear. The taxing of carbon emissions, the generation of garbage, and the excessive use of cars in cities. The environmental effects of gold mining. Restructuring of the economy. Eco-efficiency and eco-effectiveness. Government regulations. Improved retention rates and productivity gains from green building design. Traditional, modern, and leading-edge sewage treatment systems. Distributed power production systems. The design of systems so that they regulate themselves. Phytoremediation (with plants) and mycoremediation (with fungi) of contaminated soil by Ford at an old plant site. Biological and technical nutrient cycles. Jaime Lerner's urban acupuncture in the city of Curitiba, Brazil. A gathering of people to discuss sustainability.

Improved competitiveness, lowered costs, enhanced profits, greater resource productivity, enhanced new product innovation, reduced staff turnover, lower environmental impact, and greater market share – all benefits of integrating The Natural Step framework into corporate strategy and operations. Producer responsibility legislation: regulation that makes producers liable for taking back products at the end of their lifecycle. Minimum environmental standards for all of an organization's operations. Computer modeling to track resource usage. A program to provide free psychotherapy for Interface associates, to support change processes. Interface's "Dream Team" of sustainability advisors. The surveying of employee awareness and perceptions about sustainability. Independent certification of Collins Pine Company by the Forest Stewardship Council. Keeping ahead of the curve with environmental and social regulations, rather than being in the trap of catch-up. Environmental management systems (EMS), life-cycle analyses (LCA), resource inventories, environmental audits or assessments (EA), industry-specific metrics, environmental performance indicators (EPI) and design for environment practices (DfE). Training, education, and coaching programs to help embed principles into practice. Documentation of experiments and learning around sustainability to improve an organization's knowledge base. Communication of results and recognition through newsletters and websites. Workshops for suppliers on the framework for sustainability the company's new requirements. Partnerships with scientific groups, academia, environmental groups, etc. to accelerate the move toward sustainability. Integrating sustainability into all business functions (category for next four). Embedding sustainability initiatives and progress into all regular business meetings. Including sustainability criteria into financial reporting requirements, capital requests, purchasing decisions. Including sustainability achievements in performance evaluation and bonus structures. Incorporating sustainability goals into the business plan.

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2 These give incentive to consumers to purchase high-mileage vehicles by levying additional taxes on low-mileage vehicle purchases and using that money as a rebate for the high-mileage vehicles.
A group’s lack of access to safe water, safe homes, and enough wood fuel with which to cook and warm themselves. The role of a multinational company in sustainable development, especially in developing countries. Changing organizational structure, such as who has responsibility for decision-making. Inequitable land ownership structure. Monopolistic control over natural resources, leading to excessive exploitation of marginal resources by those who don’t share control. Building sustainable development objectives into the mandates of institutions that work in environmentally sensitive areas. International exchange of technology, technology-transfer agreements. The “health status” of a society, and its measurement. Education policy to make literacy universal and to close the gaps between male and female enrolment rates. The exclusion of indigenous peoples from national political processes. Degradation of the resource base. The pollution risks of gas, oil, and coal. Guidelines and voluntary codes of practice published by national and international industry associations. Criteria for the selection of sites for new hazardous facilities. Standards for the liability and compensation for any damage caused by transfrontier pollution. A national urban strategy for the development of a nation’s urban system. A program to strengthen local authorities. The use of satellites to track droughts and solve forestry problems. Institutional and legal change to support sustainability. The professional and financial support needed by NGOs in developing countries to carry out their roles effectively. NGOs working to develop basic codes of conduct for sustainable development. Sacred design systems like Feng Shui and the Vastu Sastra principles (Indian architecture) which are used for many spiritual villages. Preventative healthcare and complementary and allopathic medical systems. Complementary currencies. Ecological building. Protecting biodiversity and safeguarding wilderness areas. Local organic food production, consumption and recirculation systems. Permaculture design. The central, critical role which keystone species play in an ecosystem. Ecotourism programs with local communities. Zero-waste farming systems. Integrated renewable energy systems for villages. The use of Living Machines for local water treatment. Microcredit programs to provide financial and business services to the very poor. Democratic and legal structures. The social and economic infrastructure of a community. Natural disasters. Cooperation and involvement with the United Nations to help achieve the Millennium Development Goals. Natural capital, manufactured capital, financial capital. Factor 10, Factor 100 resource efficiency. Conflict resolution training. Full disclosure of government subsidies for energy, food, the automobile industry. Customer education programs about resource use. Multimedia campaigns, teacher training, and new school curricula promoting water saving measures in Boston.
Appendix B

Q-DyTS Problem Solving Process for Sustainability Initiatives

There are many problem solving methodologies available. This is an introductory methodology which works with the quadrants element of Integral theory. (Q-DyTS = Quadrant Dynamics: Thwarting or Supporting.) This methodology is based upon the work of Cameron Owens and Sean Esbjörn-Hargens. The final section offers an advanced approach.

9 steps to an Integral response to the 20 most influential forces in a sustainability initiative

1. Draw a large quadrant diagram, similar to figure 30, with a specific sustainability initiative in the middle. The diagram should be big enough to write 4-6 items in each quadrant.

2. In a separate place, respond to the questions on page three, brainstorming as many answers as possible. Essentially, for each of the quadrants, you’ll attempt to list all of the major forces and dynamics that are currently influencing—or may influence—your initiative. See figure 31.

3. Code the forces you’ve identified when answering these questions according to whether:
   a. You have total or near total control over it. (Code: C)
   b. You can influence it. (Code: I)
   c. You seem to have no control whatsoever over it. (Code: NC)

4. Of the supporting forces that you can either control (C) or have influence over (I), choose the two most influential from each quadrant.
5. Repeat for the thwarting forces. You should now have 16 forces identified at this point, 8 which support, 8 which thwart, and all of which you can either control or have some influence over.

6. Do a final scan of all the forces you’ve identified over which you have no control (NC). Identify the two most influential supporting forces and the two most influential thwarting forces. These can come from any quadrant. You should now have a total of four major uncontrollable influences on your sustainability initiative.

7. The grand total of identified key influences on your initiative should now be 20. 16 from steps four and five (over which you have at least some control), and four from step six (which are out of your control). Return to your original quadrant diagram from the first step. Write those 20 forces into the diagram in their associated quadrants. Be sure to keep the codes (C, I, NC) with them as you make this transfer.

8. You have now mapped the 20 most influential forces upon your sustainability initiative from a four quadrant perspective. Take a moment and breathe deeply, releasing yourself from the exercise. Get up and move around if needed. Upon returning, look at the map and allow yourself to free associate for solutions. Allow yourself to draw from your rational mind and from beyond the rational mind (intuition, “gut” feelings, divine insight, etc.). Take note of any ideas or insights which arise.

9. Design an action plan to advance your sustainability initiative which builds upon those forces which support the initiative and which responds to the forces which thwart it. Use tools and methodologies that are appropriate to each quadrant. Ideally, your solution will be more simple than complex; one which pushes on just a few key levers for optimum positive influence. Most importantly, allow this creative process to unfold in its own time.
The Four Worlds of Sustainability

Figure 30

Figure 31. Some of the most important aspects of each quadrant. Each of the major levels of reality (matter, life, mind, spirit) has these aspects.
Upper Left Questions

Intelligence

Mental model, worldview, cognitive intelligence, emotional intelligence, psychological dynamics like shadow issues, general knowledge about any topic, capabilities of any type, needs, values, morals, level of ego-development, level of emotional development, aesthetic development, etc.

- Among the key stakeholders involved in this initiative (including yourself), what aspects of their intelligence seem to support the ultimate success of this initiative?
- Among the key stakeholders involved in this initiative (including yourself), what aspects of their intelligence seem to thwart, or work against, the ultimate success of this initiative?

Experience

Thoughts, beliefs, emotions, sense of aesthetics, sense of place, spiritual experience, etc.

- With respect to experience, what are the supporting forces amongst key stakeholders?
- What are the thwarting forces amongst key stakeholders?
Upper Right Questions

Body

Physical body – its health, strength, energy level, and overall functioning.

- With respect to the status of the physical body, what are the supporting forces amongst key stakeholders?
- What are the thwarting forces amongst key stakeholders?

Behavior

Movements, actions, skillful means; what an individual actually does, skillfully or not.

- With respect to behavior, what are the supporting forces amongst key stakeholders?
- What are the thwarting forces amongst key stakeholders?
Lower Left Questions

Culture

Family, organizational, regional, or larger social culture; approximate level of shared worldview (i.e., magic, mythic, rational or traditional, modern, postmodern); cultural norms and mores; shared vision; relationships between people; relationship between an individual and an organization or place; etc.

- With respect to culture, what are the supporting forces amongst key groups involved in this initiative?
- What are the thwarting forces amongst key groups?

Communication

Language; stories; symbolism; degree of mutual understanding; type of communication used (auditory, visual, kinesthetic, multi-media based, developmentally-appropriate, etc.)

- With respect to communication, what are the supporting forces amongst key groups?
- What are the thwarting forces amongst key groups?
Lower Right Questions

*Systems and Structures*

Ecosystems, social systems and their infrastructures in general; economic systems, governance systems, technological systems, political systems, transportation systems, manufacturing systems, information systems; incentive and pay systems; strategies; policies; work processes, etc.

- With respect to systems and structures, what are the supporting forces amongst key groups?
- What are the thwarting forces amongst key groups?

*Shared Actions*

What groups do together, collectively, such as voting for a particular candidate, consuming a certain item (during a fad, for example), migrate, recreate at the beach or mountains, etc.

- With respect to shared actions, what are the supporting forces amongst key groups?
- What are the thwarting forces amongst key groups?
An Integrally informed creative problem solving process for sustainability initiatives

Based upon: Creative Problem Solving and Opportunity Finding

Explore the Situation

- Divergent phase: Using the Integral framework as a guide, search a sustainability initiative for problems and opportunities.
- Convergent phase: Identify an important challenge and commit to undertaking systematic efforts to respond to it.

Search for Information

- Divergent phase: Gather data, impressions, feelings, observations; examine the situation from many different viewpoints. Use the Integral framework to ensure that you are touching on all the bases.
- Convergent phase: Identify the most important information, using an Integral lens.

Clearly Identify the Problem

- Divergent phase: Generate many different potential problem statements. Utilize the Integral framework to look at the problem from multiple perspectives.
- Convergent phase: Choose a working problem statement.
Identify the Major Forces Influencing the Problem

- Divergent phase: Using the Integral framework as a lens, generate many possible forces that either support a solution or thwart resolution of the problem.
- Convergent phase: Choose the most powerful forces working for, and working against, the situation, and identify which of those you can influence.

Search for Solutions

- Divergent phase: Develop many alternatives and possibilities for solutions. Build off the major supporting forces and respond to the thwarting forces.
- Convergent phase: Select one or a few ideas that seem most promising.

Evaluate Solutions

- Divergent phase: Formulate criteria for reviewing and evaluating ideas.
- Convergent phase: Select the most important criteria. Use the criteria to evaluate, strengthen, and refine ideas.

Implement a Solution

- Divergent phase: Consider possible sources of assistance and resistance to the proposed solution, using the Integral framework as a guide. Identify metrics for determining its success or failure. Identify implementation steps and request resources.
• Convergent phase: Prepare the most promising solution for implementation. Implement it. Measure results against the pre-established metrics. Use single, double, and triple-loop learning to refine your approach as needed. Repeat this process as necessary.


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DeKay, Mark (2005 forthcoming). Beyond the ecological design flatland: Integral architecture and human development. [citation style]


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AQAL, pronounced “ah-kwul,” is short for “all-quadrants, all-levels, all-lines, all-states, and all-types.” An introductory article which explains all of the elements of the AQAL Integral framework is Wilber, “Introduction to Integral theory and practice: IOS Basic and the AQAL map,” 2005.


Technically, in AQAL Integral Theory, the quadrants are the four basic dimensions that any sentient being possesses. So each sentient being has an individual interior (i.e., consciousness), an individual exterior (i.e., brain and organism), a collective interior (i.e., culture and worldview), and a collective exterior (i.e., social system and environment). All of these dimensions arise together and are distinct, yet inseparable. However, the existence of these dimensions give way to perspectives with which to look at the world. Technically, when we shift to perspectives, the terminology changes and the perspectives are called quadrivium (not quadrants), which is Latin for “four ways.” That is, the quadrivium represent the first-person, subjective perspective (I), second-person plural, intersubjective perspective (We), third-person singular, objective perspective (It), and third-person plural, interobjective perspective (Its) which anyone can take. This is important because things which don’t have sentence (like a river, a transportation system, or an economic recession) don’t possess the four quadrants; they don’t have interior and exterior dimensions of sentence like consciousness, a brain, a worldview, or a social system. A river or economic depression cannot take perspectives like sentient beings can. However, those non-sentient things or events, can be looked at through the perspectives we have available to us. These perspectives are called quadrivia in the singular, quadrivium when taken together. In summary, the interior and exterior dimensions of the individual and collective which are known by any sentient being are called quadrants. The perspectives with which one looks out at the world at anything else from those dimensions are called quadrivium. Now, for the sake of simplicity in the wild and rapid world of application in the “real world”, we are going to drop the term “quadrivium” and just use the term quadrants. So, even though it’s technically incorrect (but a practical advantage), we’ll call the process of looking through the different perspectives “looking through the quadrants.” There is an entire integral calculus of perspectives which Wilber has delineated, using quadrants and quadrivium, but as far as I can tell, it’s not very useful for moving sustainability initiatives forward at this point. Readers interested in the calculus should refer to Wilber, “Appendix B: An Integral mathematics of primordial perspectives,” 2004.

There is a more sophisticated approach to understanding the reality of a sustainability initiative (or the reality of anything) that goes beyond the quadrants analysis we’re exploring in this document. This approach is called Integral Methodological Pluralism. This is a “meta-methodology” that utilizes eight major methodologies to reveal valid knowledge about any event. The methodologies are essentially different cultures of inquiry, different ways of accessing knowledge. They are: phenomenology, structuralism, autopoiesis, empiricism, hermeneutics, ethnomethodology, social autopoiesis, and systems theory. For a general explanation of Integral Methodological Pluralism (IMP) in the context of sustainability, see Brown, “Integrating the major research methodologies used in sustainable development.” This document is currently under review at AQAL Journal and available directly from the author. For a real-world application of IMP to sustainability, in which it is used to better understand climate change policy in Australia and prescribe integrally-informed solutions, see Riedy, *The eye of the storm: An integral perspective on sustainable development and climate change response*, 2005.

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Wilber makes the argument that Buddhism, Plato, Kant, Habermas, and Popper all had versions of the Big Three in *Sex, Ecology, Spirituality: The Spirit of Evolution*, pp. 144-145

Das, *Awakening the Buddha within: Tibetan wisdom for the Western world*, pp. 55-56
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15 Thierry Pauchant, personal communication, November, 2005. Searching through Dewey’s writings on psychology, education, and metaphysics, he does loosely address topics from each of these perspectives. I’ve yet to find a passage where he brings them all together, though. Further research required.
23 Courtesy Tim Winton, Permaforest Trust
24 Environmental News Service, “Petrobras abandons plans for oil road in Ecuadorian Amazon park,” 2006
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27 There are ontological, epistemological, and methodological issues with respect to doing an analysis of anything. There is the specific "what" that the written statement about sustainability, in this case, is focused upon (waste reduction, education, etc.). This is the ontological aspect. Yet there is also the "who" and the "how" which are behind the statements. The "who" refers to the specific mental model or worldview that the author of the statement was operating from at the time (i.e., do they see the world through a traditional, a modern, or a postmodern lens, or some other combination of lenses?). This is the epistemological aspect. Finally, there is the methodological aspect, the "how." How the author was looking at the world, using which methodology, will influence the development of his or her statements about sustainability. Methodologies range from phenomenology to hermeneutics to systems theory. Given all of these complex dynamics, and because I chose not to do interviews with—and psychological testing of—all of the authors profiled, I would not be able to accurately determine the epistemological and methodological aspects of the development of their ideas. As such, I chose to focus on the ontological aspect of their statements concerning sustainability: what specific aspect of reality do these statements seem to be focusing on? Therefore, the analysis should not be considered as any definitive statement in any way about the authors, as I have purely focused on the focus of the statements themselves.
28 To determine which books to analyze, I used one internal data source (my intuition) and two external data sources (Amazon.com sales rankings and total number of Google references). I first intuitively chose eight books which I assumed were top sellers, and thus influential in the sustainability field. I chose five books concerning the business aspect of sustainability and three that were written for a multi-sector audience. I then identified the 68 biggest selling books concerning sustainability on Amazon.com, in three genres which I developed: business sustainability, multi-sector, and popular/general public. In addition to the Amazon.com sales ranking for each book, I also collected data on the total number of references to a book on Google. Using these numbers, I determined that the eight books I had originally chosen were, at the time, the #1, #2, #3, #14, and #19 biggest selling books in the business genre, and the #1, #7, and #13 best sellers in the multi-sector genre. I had chosen none from the “popular/general public” genre. When I looked at the rankings from Google, the five business sustainability books were the #1, #2, #3, #4 and #11
most referenced, and the three multi-sector books were the #1, #4, and #16 most referenced. I made the decision at this point that my eight books were an appropriate representation of widely known business and multi-sector sustainability books. See Appendix A for all the sustainability books considered and their respective Amazon.com rankings and Google reference totals.


The sustainability books which appeal to multiple sectors that I considered analyzing are: *Plan B 2.0; Ecological Economics; Biomimicry; Our Common Future; Our Ecological Footprint: Reducing Human Impact on Earth; For the Common Good: Redirecting the Economy Toward Community, the Environment, and a Sustainable Future; Limits to Growth: The 30 Year Update; Beyond the Limits; Eco-Economy: Building an Economy for the Earth; High Noon; Steady State Economics; Beyond Growth: the Economics of Sustainable Development; Limits to Growth; Blueprint for a Green Economy; The Sustainability Revolution; Ecodevelopment: The Chrysalis Economy; The Principles of Sustainability; Building a Sustainable Society; Building Sustainable Societies: A Blueprint for a Post-Industrial World; The Natural Step Story; The Sustainable Society

The sustainability books written for a more popular audience which I considered analyzing are the following (note: none of these were chosen). *Walden; Silent Spring; Small is Beautiful; A Sand County Almanac; Earth in the Balance; The Great Work: Our Way Into the Future; The Population Bomb; The Population Explosion; Red Sky at Morning: America and the Crisis of the Global Environment; The Hidden Connections; The Dream of Earth; The Consumer's Guide to Effective Environmental Choices: Practical Advice from the Union of Concerned Scientists; Restoring the Earth; Living Within Limits; Permaculture: Principles and Pathways Beyond Sustainability; Believing Cassandra: An Optimist Looks at a Pessimist's World; Out of the Labyrinth: Who We Are, How We Go Wrong and What We Can Do About It.

Data as of June 24, 2006. *Cradle to Cradle* was the 850th most popular book sold out of all books at that time, and #1 of sustainability oriented books. *Plan B 2.0* had a ranking of 3,103 out of all books sold, and came in as the #2 book, just above *Natural Capitalism*, with a rank of 3,242.


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45 Shiferaw, personal communication July 18, 2006. This is part of his thesis work.
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