EDITORIAL

John R. Ehrenfeld
International Society for Industrial Ecology

Sustainability needs to be attained, not managed

In preparing for this editorial, I read through several recent issues of *Sustainability: Science, Practice, & Policy* to get a sense of the way in which this concept appears. I was not surprised that sustainability showed up in many shapes and flavors, reflecting the diverse ways this term appears in conversations today. Early in the history of any new normative concept, one can find similar, but perhaps not so widely varying, views on the subject at hand.

Sustainability and its derivatives fall into the same class as a few of the key concepts underlying liberal democracies everywhere—like equality, freedom, and liberty—that are explicitly written into the founding documents of the United States. Such terms have been called "essentially contested concepts" (ECCs), signifying that there is an ongoing, never-ending dispute about both the meaning and the degree to which one can attain whatever is named by the concept (Gallie, 1956). I recall a recent allusion to some 300 or more definitions regarding sustainability. Sustainability is confused or conflated with "green" in many places. It is used more-or-less interchangeably in this publication and others focused on the notion of "sustainable development."

The title of a recent article in this journal, "Sustainable development: how to manage something that is subjective and never can be achieved?" exemplifies the point (Kemp & Martens, 2007). I will try to answer the question that the authors raise. But first, it is critical to explore the idea of ECC. I have not done a careful analysis or literature search on ECC, but I do find something that all of the instances of this phenomena I have encountered have in common. All ECCs are emergent properties of complex systems, and are subjective in the sense that they arise through an assessment by some observer looking on the whole system. ECCs are unquantifiable, but can be described via qualities coming from the observer's assessment.

One famous such assessment is the way a United States Supreme Court Justice defined "obscenity." In a case deciding whether a movie was obscene, or more precisely contained "hard-core pornography," Justice Potter Stewart wrote, "I shall not today attempt further to define the kinds of material I understand to be embraced within that shorthand description; and perhaps I could never succeed in intelligibly doing so. *But I know it when I see it*, and the motion picture involved in this case is not that" (emphasis added).

The second point about ECCs is that they cannot be managed in the deterministic sense that "management" implies: that a manager operates according to some set of rules describing the behavior of the system being managed, and further that the outcome can be measured according to some quantifiable metric. So goes one of the most famous of management mantras, "You can't manage what you don't measure." If I push a little here, the system will move to the place I want it to be. This apparent limitation is just that, apparent. The biggest challenge to those who construct or oversee human-made complex systems or oversee natural systems is to make sure that they are producing the desirable properties that make them special.

And I disagree with Kemp & Martens that whatever is being sought, like freedom or beauty, cannot be achieved. There is general agreement that da Vinci's Mona Lisa is beautiful. Not everyone agrees, however, because the assessment is subjective, as Kemp & Martens' title says. "Subjective" in this case is the opposite of "objective," which refers to phenomena that have been scientifically measured and described via some sort of theory, law, or rule. But behind all such objective findings lurk subjective hypotheses, values, and so on. But even more important to my argument, the dichotomy between objective and subjective presumes a Cartesian world that separates the observer from the observed.

Sustainability is a much more general concept than is implied in its adjectival use in sustainable development. It is better defined as the possibility that some system that is now producing, or soon will produce, one of these desirable emergent properties will continue to produce it indefinitely. The Mona Lisa exhibits sustainability regarding its beauty, which it will bring into the views of those who gaze upon it as long as it hangs in the Louvre. The folly of attempt-

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ing to quantify and mechanize beauty is quite clear if one looks at an animated video, touting Microsoft's MS Paint program, a very fancy paint-by-numbers kit, showing how one can paint the Mona Lisa in just a few minutes.[1]

But sustainability, as contrasted with "sustainable development" or any phrase using the adjective sustainable, is very different. Sustainable development is, indeed, all about managing the technocratic process of economic development so that the Earth will continue to support future generations in the same way it has for us. Development is certainly not the objective. But what is? Even the conventional triad—environment, economy, and equity—that accompanies the standard Brundtland definition does not help much. Further, since sustainable development is categorically a continuing process, it cannot, by definition, ever be achieved. Words can, and do, really get in the way of actions.

To avoid this, again, apparent dilemma, I begin with a very different way to define and construe sustainability. In a recent book, I define sustainability as "the possibility that human and other life will flourish on the Earth forever" (Ehrenfeld, 2008). Here "flourishing" is the emergent property and the system producing flourishing is the Earth. I chose flourishing as the quality that encompasses all three legs of sustainable development because it conjures up a vision of a desirable future state and, thus, can be assessed as being present or not. It is certainly not going to be easy to get there, but it is not something "that never can be achieved."

Flourishing is a metaphor for many things, but always connotes aliveness, joy, health and many other qualities related to being. The challenges we face today, as portrayed in the volumes of this journal, are different from those related to managing sustainable development. Our goal should be to attain sustainability because it exists now only in tiny bits and patches, if at all. Even if we continue to disagree on the meaning of sustainability, we are largely in agreement that the present state of the Earth is unsustainable. We can come to terms here because we do define unsustainability in quantitative measures and rules.

Further, virtually everything that has been done in the name of sustainability is rather an attempt to reduce unsustainability. This may sound like a tautology, but it is not. Sustainability is a mere possibility; flourishing is the normative vision. Unsustainability is palpable and can be measured and reduced to the result of calculations. The dominant sustainable development framework, employed by virtually all countries, is some form of technology to improve efficiency.

Ecoefficiency is the rubric applied to new consumer products and commodities: more value for less environmental impact. Energy efficiency aims at providing ever-increasing demands for energy via technology that reduces carbon emissions and preserves the finite supply of fossil fuels.

Few of these references to efficiency account for the rebound effect (also known as the Jevons Paradox) (Alcott, 2005) that states that growth in demand will negate the gains of efficiency improvement. This last sentence is not a criticism of efficiency or any other efforts to stem the tide of unsustainability; it simply points to its limitations. Anything done today that will slow down the potential collapse of the planetary and socioeconomic systems that nourish us is important.

However, we cannot confuse these efforts with creating sustainability. Nor can we allow the complacency that is created by continuing to attack the symptoms with technology, rather than attacking the underlying causes. Systems dynamics calls such defocusing on the real problems, instead of addressing the underlying causes, "shifting the burden."

Unsustainability is an unintended consequence of modernity. It has arisen in the normal course of societal activities. The underlying structure of modern cultures fuels the pump of consumption. Unsustainability will not disappear and make room for sustainability to emerge until the beliefs and norms that drive industrialized economies are exchanged for new ones aligned with sustainability. Cartesianism and the idea of an objective reality, accessing that reality through reductionist science, the standard model of the human as a machine driven to fulfill an insatiable set of needs, plus a presumption that technology will solve virtually all of our problems, are a few key beliefs that are implicated.

The Cartesian way of grasping (objective) reality leads to the notion of absolute truth and thence to domination. Humberto Maturana (1988), a Chilean biologist, says that in the system of objective reality, "a claim of knowledge is a demand for obedience." Reductionist science places humans outside of nature via the metaphorical microscope with a human eye at one end and the world at the other. Early modernist beliefs about the liberating power of this newly found knowledge and its technological applications saw nature as harsh and alien and sought to establish dominion over it for the perfection of humanity.

The standard rational model of cognition and action leads to a model of humans as possessing a mysterious set of insatiable needs that individuals continually strive to satisfy by basing actions on a maximizing calculus programmed into a computer in

[1] Available at http://www.youtube.com/watch?v=uk2sPl_Z7ZU.

our minds. Couple this to a neoclassical, capitalist political economy that must grow or die, and you have a formula for trouble. Finally, the shifting-the-burden propensity to use technology to solve every problem leads us to see the whole world as little more than raw materials for more and newer tools. Humans are transformed from something special to mere potential components for a tightly bound-up system of production and consumption. In the unending quest for tools to satisfy us, we have turned from our flourishing, or being, mode to one of having (Fromm, 1976).

If we are to see the possibility of flourishing realized, we must transform the cultural system at its roots. We can start by exchanging our model of determinate objective reality for one of complexity, accepting that the world and its subsystems cannot be reduced to a set of mathematical or analytic rules. The financial system, a good example of complexity, has been modeled by economists and bankers as a money machine, but what we really strive for is not money, but security and the means to enable us to care for the world, others, and ourselves. The recent collapse of the system did make a lot of money disappear, but what was really lost was confidence, trust, and security.

Complexity brings us a different set of beliefs that should line up better with sustainability: interdependent and communitarian instead of independent and individualist; and organic and holistic instead of mechanistic and atomistic. Seeing us as caring rather than needing creatures brings us other directedness instead of narcissism and concern for fairness instead of drive for efficiency. Beauty is not something that can be bought in a bottle, even though advertisements incessantly bombard us with exactly that message. Philosophers such as Martin Heidegger and psychologists like Erich Fromm recall our origins as being creatures. Being is a holistic concept that emerges when the whole body is working in harmony with all the interconnected links with the Earth and with other people. The sense of responsibility necessary to maintain taking care of the Earth, which has been lost, returns to one's consciousness.

We slowly become our stories and our actions play out the plot they weave. Vice versa, we create our stories from our actions. We can build these new kinds of models for the world and human life into the tools we use every day and into the social processes we use to make collective decisions. Tools that talk and guide our actions are one way to move. Simple artifacts, for example speed bumps, two-button toilets, or seat-belt alarms, speak to us with messages like: be careful, someone might be crossing; use only as much water as is necessary; or do not gamble with your life. Governance frameworks such as the Precautionary Principle reflect the indeterminacy of the complex worlds on which we depend for flourishing. Accepting that we cannot know how to predict their future states, especially when we suspect the possibility of collapse, of shift to an unfriendly regime, leads to prudence.

This editorial has been written to pique your curiosity and to start up the motor of critical and systems thinking. There is a lot more to say, but for that you will have to read my book.

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About the Author

John Ehrenfeld is Executive Director of the International Society for Industrial Ecology and his research focuses on sustainability and culture change. He is the author of *Sustainability by Design: A Subversive Strategy for Transforming our Consumer Culture*. John currently serves on the Council of the Society for Organizational Learning, having retired in 2000 as the Director of the MIT Program on Technology, Business, and Environment. In 1999, the World Resources Institute honored him with a lifetime achievement award. He holds B.S. and Sc.D. degrees in chemical engineering from MIT, and is author or coauthor of over 200 journal articles and other publications. Contact him at john.ehrenfeld@alum.mit.edu and visit his website at http://johnehrenfeld.com.