Reflections

The SoL Journal
on Knowledge, Learning, and Change

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Creating Desired Futures in a Global Economy

By Peter M. Senge

Underlying every significant issue that organizations and societies face is the question: How can we create desired results in an increasingly interdependent world? That question has been the focus of Peter Senge's work for more than 20 years. It also is at the heart of the Society for Organizational Learning's research in innovation, large-systems change, sustainability, the future of education, and leadership development. In June 2003, 335 researchers, consultants and executives from business, government, and civil society gathered at SoL's first Global Forum, in Helsinki, Finland. This article was adapted from Peter's remarks at that forum. — *Paul M. Cohen, Senior Editor*

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There's nothing more elemental to the work of leaders than creating results. But it's no longer possible to create positive results in isolation. With organizations, economies, and entire societies increasingly interconnected, our actions affect (and are affected by) others, often literally a world away. It's impossible, in today's world, to think about how to have an impact in our workplace without also asking ourselves a deeper question: What does it means to live in a global society?

This question was brought home to me by Mieko Nishimizu, one of the most gifted executives at the World Bank. Shortly after attending the SoL Executive Champions' Workshop in August 2002, she addressed business and political leaders observing the 50th anniversary of Japan's membership in the post-World War II Bretton Woods Agreements. Speaking with candor unusual for such an affair, she described what it meant for her, after growing up with many material benefits, to come to grips with poverty. For example, she told of meeting an Indian woman who had to walk four hours each day to gather fresh water. As they walked together, the woman told her, "This is not life. This is only keeping a body alive." For Mieko, such conditions – which are a reality for an increasing number of people in most of the developing world[1] – cannot be separated from the forces shaping an increasingly global society:

The future appears alien to us.

It differs from the past, most notably in that the earth itself is a relevant unit with which to frame and measure that future. Discriminating issues that shape the future are all fundamentally global.

> We belong to one inescapable network of mutuality – mutuality of ecosystems; mutuality of freer movement of information, ideas, people, and goods and services; and mutuality of peace and security.
>
> We are tied, indeed, in a single fabric of destiny on planet earth. Policies and actions that attempt to tear a nation from this cloth will inevitably fail.[2]

Few of our institutions are prepared for a truly global society. Indeed, it appears that much of the preparation nature has invested in us – our physiological, cognitive, psychological, and cultural evolution – is failing us. Our neuroanatomy is tuned to respond to sudden, dramatic changes in our environment: clap your hands loudly and watch it react. We focus on immediate needs and problems, and are trapped by the illusion that what is most tangible is most real. We've been conditioned for thousands of years to identify with our family, our tribe, and our local social structures. A future that asks us to overcome this conditioning and identify with all of humankind looks alien indeed.

The future appears alien to us.

On the other hand, in some ways we've long understood our place in the world. Early in our history, we learned that if we depleted our topsoil or our local fishery, we paid a price. Today, we call it sustainability (see sidebar, "Improving the Triple Bottom Line"). However, we've never before lived in a world in which one's actions, through global business, can have their primary consequence on the other side of the world. Nor have we ever been so dependent on the actions of others. In the late 1980s a US emergency preparedness study estimated that the typical pound of food that an American consumed traveled an average of 1,500 miles, often from outside the US. In the years since, the developed economies' reliance on the developing world for essential goods and services has only increased.

The challenges of living in such an alien, interconnected world are both practical and deeply personal. Ultimately they lead us to reflect on who we are individually, who we are in our local networks of colleagues, and what we're committed to. Such understanding is essential to being effective in our work as managers, teachers, parents, and citizens.

Creating Desired Results

Adam Kahane,[3] a SoL member and gifted facilitator who specializes in cross-sector dialogue and scenario building, says that three types of increasing complexity are at the root of organizations' and societies' toughest problems:

- dynamic complexity: cause and effect distant in time and space
- social complexity: diverse stakeholders with different agendas and worldviews
- generative complexity: emergent realities wherein solutions from the past no longer fit.

In the face of such complexity, the very concept of "problem solving" can be an impediment. It can lead us to think of fixing something that is broken. It can lead to imposing solutions from the past. And, it can lead to seeing reality as the adversary rather than the ally. But, none of these arises necessarily *if* we see problem solving as part of a larger process of creating what we truly want.

Realizing desired results in a global society – or in any context – requires both learning and leadership, but above all it involves collective *creating*. In fact, I see learning, leading, and creating as three ways to talk about the same basic phenomenon. Effective leadership, for instance, draws on the belief that we have positive choices and can overcome fear to bring about a better future together. Learning – whether learning to manage a department, speak

Improving the Triple Bottom Line

There's little you can say with certainty about the future of the global economy. But one thing is certain: it can't continue as it is. The planet's resources, its natural systems, and at least one-third of its population, living in desperate poverty, simply won't allow it.

How can leaders respond to this reality? What can we do to shift from mere regulatory compliance and incremental process improvements to real innovation – to environmentally intelligent products and services, developed and marketed in responsible ways? The SoL Sustainability Consortium, a learning community of organizations, has developed some practical answers to these questions. The consortium applies the disciplines of systems thinking and organizational learning to better understand how companies can be profitable while nurturing local communities and natural systems – the so-called "triple bottom line." Early on, consortium members, including BP, Shell, Ford, Nike, United Technologies, Harley Davidson, and Visteon, decided they needed a simple, operational definition of sustainability. They came up with the following picture that distinguishes present industrial systems from natural systems.[11]

While individual companies can reduce waste, like the Xerox copier team, modern products contain huge amounts of toxic substances that no single company can eliminate entirely. Many believe that this toxic load is the prime source of the rising incidence of cancer and other diseases in industrialized countries, as well as the destruction of ecological systems. To address these problems, environmentalists have advocated "materials pooling" – working collaboratively and systematically across complex value chains to identify and eliminate sources of waste and toxicity.[13] But actually building such cross-organizational learning communities requires trust, shared vision, and shared understanding of larger systems. This is what members of the SoL Sustainability Consortium are attempting to do today, with working groups focused on reducing and, ideally, entirely eliminating toxins and waste in a broad array of industrial and consumer products. But what they really are doing is learning to build sustainability-learning communities.[14]

Figure 1 Why Industry Produces Waste

LIVING SYSTEMS FOLLOW CYCLES

INDUSTRIAL-AGE SYSTEMS DO NOT FOLLOW CYCLES
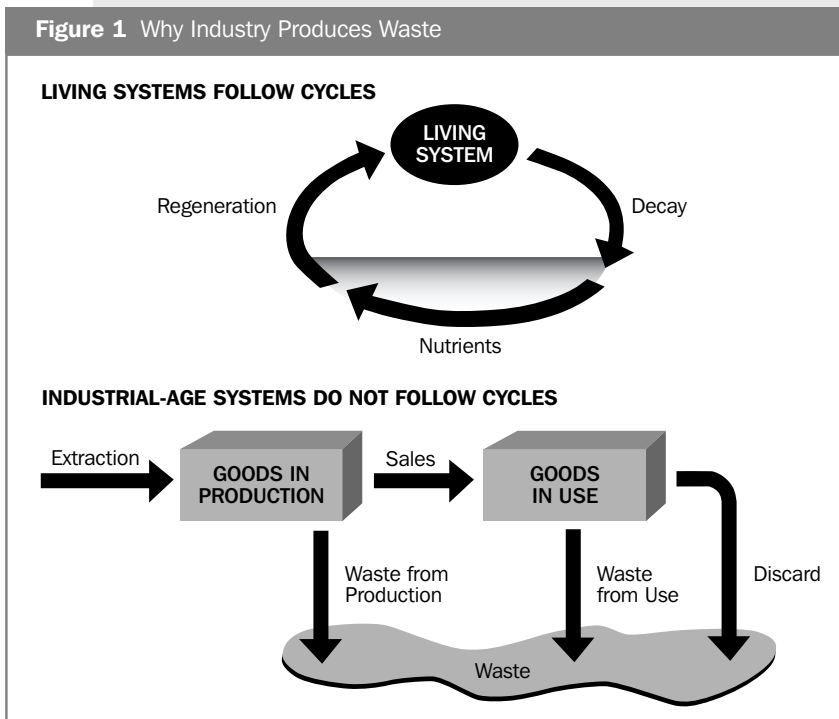
A sustainable industrial system strives to transform all sources of waste and toxicity into "technical" or "biological nutrients" that can be reused indefinitely without harm to living systems.[12]

Figure 2 How Industry Can Reduce Waste: A Cyclic Industrial System that Mimics Nature

1 Resource Productivity
2 Clean Products
3 Remanufacture, Recycle, Compost

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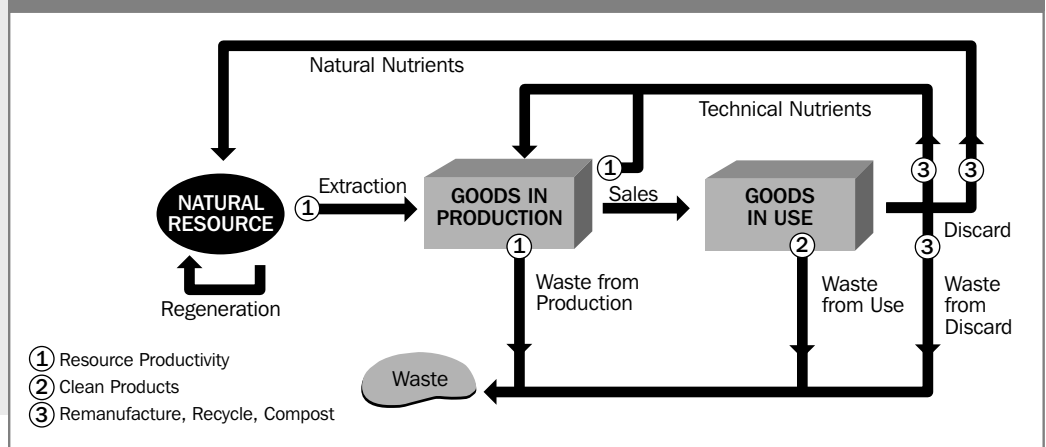
a language, or raise a child – is about creating new capacities to bring new outcomes into reality, especially outcomes we genuinely care about. That is also the root definition of "create" – to bring into existence.

Creating is not a mystical state that we simply fall into; it is a discipline that can be understood and developed. Robert Fritz,[4] a musician, filmmaker, organizational consultant (and in many ways my mentor in the study of creating as a discipline), has articulated three principles that can help leaders of all sorts more effectively create desired outcomes.

If your primary role is to fix problems rather than create something new and meaningful, it's hard to maintain a sense of purpose.

1. Creating is different from problem solving.

The fundamental difference between creating and problem solving is simple. In problem solving we seek to make something we do not like go away. In creating, we seek to make what we truly care about exist. Few distinctions are more basic. Of course, most of us, in both professional and private life, spend far more time problem solving and reacting to circumstances than focusing our energies on creating what we really value. Indeed, we can get so caught up in reacting to problems that it is easy to forget what we actually want.

Organizations must do both – resolve day-to-day problems and generate new results. But if your primary role is to fix problems, individually or collectively, rather than create something new and meaningful, it's hard to maintain a sense of purpose. And without a deep sense of purpose, it's difficult to harness the energy, passion, commitment, and perseverance needed to thrive in challenging times.

If you wonder which is primary in your work, simply ask yourself or your team, "What are we trying to accomplish today?" Usually teams will describe a set of problems they're trying to manage. Then, ask what they could accomplish by eliminating those problems. Typically, they'll describe yet another set of problems that could then be tackled – for instance, preventing a service breakdown if only they first could solve their interpersonal conflicts. What often is forgotten is the more basic question: What are we trying to create? Without a compelling answer to this question, it is hard to know why all the problem solving actually matters. Problem solving becomes the busywork of organizations in which people have forgotten their purpose and vision. Reconnecting with that purpose always starts with asking questions like: Why are we here? What are we trying to create that will make the world a better place? And, who would miss us if we were gone? (By the way, if you are in a business, "our investors" is never an answer to the last question – investors will always find another company where they can earn an adequate return on their capital.)

2. The creative process is animated by the gap between vision and reality.

When we picture something we want to create, we're imaging a vision of the future, which also evokes the implicit difference from what currently exists. Every creative artist understands this principle. Fritz calls it "structural tension," and says it can be resolved by taking action to achieve our vision. Closing the gap between vision and reality is the essence of the creative arts. Artists get no credit for brilliant ideas unless they can bring them into reality. This "bringing of vision to reality" is also the essence of great social, political, or business leadership.

However, because this tension between vision and reality can be uncomfortable, creative tension becomes emotional tension and we often seek ways around it. One way to lessen the emotional tension is simply to reduce our true vision, to give up our dreams and aim for only "realistic goals." While this might reduce our discomfort, it also reduces creative energy. The second way is even more troubling: we do not tell the truth about current reality. Just as the dynamics of compromise – lowering our vision – are common in human affairs, so too are the dynamics of denial. But to the extent that we misrepresent current reality, we lose the capacity to change that reality. The energy of the creative process is released not just by holding true to a vision, but also by telling the truth about what is.

3. Understanding your constraints frees you to create.

One thing that distinguishes the master from the novice is an appreciation of the constraints of his or her medium. Or, as Fritz put it, "No painter paints on an infinite canvas."

John Elter, a former vice president at Xerox, used this principle to great effect. Early in a multiyear, product-development process to create the company's first fully digital copiers, Elter took his team on a two-day wilderness

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expedition in the New Mexico desert.[5] On the way back, they happened to walk by a dump – at the bottom of which they discovered a Xerox copier. It was a revelation. They returned to work with a new vision for the product and their entire enterprise: "Zero to landfill, for our children."

Says Elter, "Most of the constraints engineering teams deal with are management claptrap. All the managers make them up: *The product has got to grow revenue by this amount. It's got to achieve these cost targets.*" However, says Elter, after their epiphany in the desert, "We discovered our real constraint – that nothing from this product should ever go into a landfill." The product they designed was ultimately 94 percent re-manufacturable and 98 percent recyclable, and met or exceeded all its sales targets. The team created a great product – perhaps saving the company from bankruptcy or takeover – by redefining the constraints they worked against.

As Elter and his team showed, as we go forward, the constraints that can enable creativity will come from appreciating the environmental and social realities of an increasingly interdependent world. Nature produces no waste. Why should business be different? But, by and
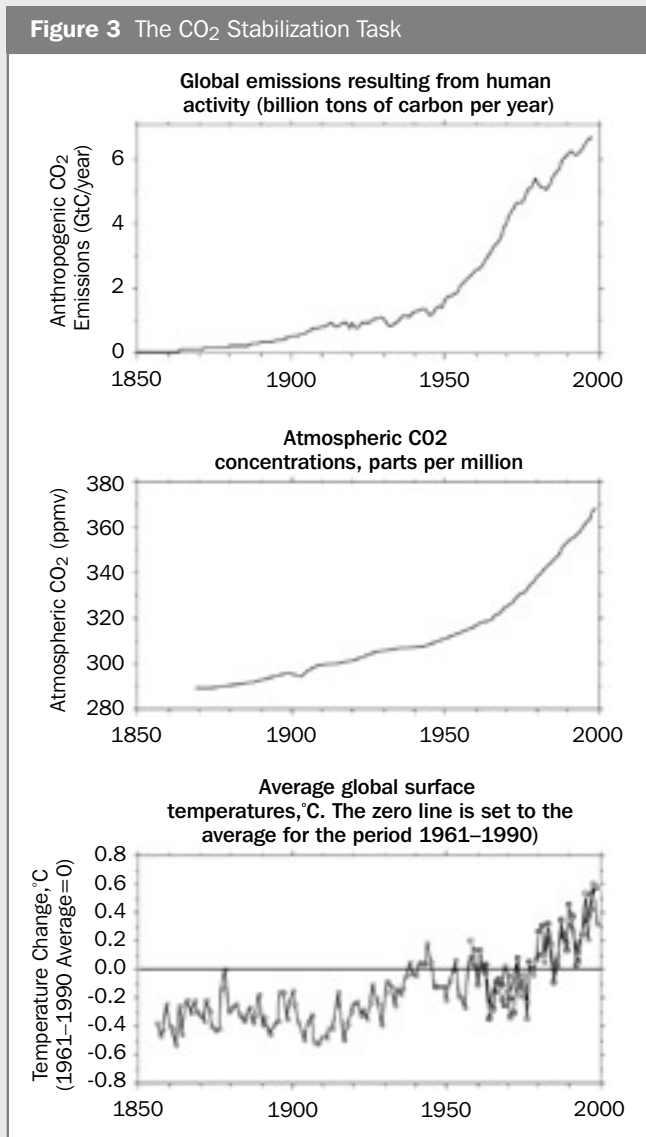
Feeling the Heat

Researchers John Sterman and Linda Booth Sweeney wondered why, despite overwhelming scientific evidence, so many Americans are complacent about the threat of global warming. Their study points up the trouble people have seeing connections among related forces, and thus framing good solutions.[15]

Sterman and Booth Sweeney described the dynamics of global warming to MBA students at Harvard, Stanford, and MIT, using data from the 2001 report of the UN's Intergovernmental Panel on Climate Change (IPCC).[16] The findings themselves are not in dispute. As shown in Figure 1, the flow of CO_2 emissions resulting from human activity increased steadily from 1850–1950, and precipitously since 1950. As a result, the total concentration of CO_2 has increased some 30 percent in the last 150 years – to the highest concentrations of the last 420,000 years (see Figure 2). Average global temperatures are trending in the same direction, as shown in Figure 3. IPCC concludes that "most of the warming observed over the last 50 years is attributable to human activities."

Not shown is the rate at which CO_2 is *removed* from the atmosphere – which happens, of course, when green plants consume CO_2 and return oxygen. This is vital information for projecting future CO_2 levels. By best estimates today, the outflow of CO_2, which has declined due to deforestation, is about one-half the emissions. Therefore, emissions would have to decline by 50 percent just to stabilize the current stock of CO_2 in the atmosphere – well beyond what the Kyoto protocols would accomplish, even if all countries of the world adopted them. So, anything less than a 50-percent decline in emissions will result in a continuing rise in CO_2 levels for many years. Furthermore, the effects of CO_2 in the atmosphere are long lasting – temperatures would continue to rise for years even if the CO_2 concentration leveled off today. Yet, presented with two scenarios based on these data, no more than 38 percent of the students correctly predicted what would happen.

The principles at work, say Sterman and Booth Sweeney, are "as simple as filling a bathtub: humanity is injecting CO_2 into the atmosphere at about twice the rate it is drained out. Stabilizing the concentration of CO_2 requires substantial cuts in emissions." The authors call for better science reporting, noting that "even the simplest systems concepts help." They conclude, "The sooner people understand these dynamics, the sooner they will call for leaders who reject do-nothing, wait-and-see policies and who will turn down the tap – before the tub overflows."

Figure 3 The CO_2 Stabilization Task

Global emissions resulting from human activity (billion tons of carbon per year)

Atmospheric C02 concentrations, parts per million

Average global surface temperatures,°C. The zero line is set to the average for the period 1961–1990)

large, we fail to see these constraints because we fail to see the interdependence out of which they arise.

Missing the Connections

To redress the imbalances in our global society, whether of income distribution, development of civil society, or destruction of living systems, we must see the connections that permeate natural and social systems. But for most of us, the noise of modern societies obscures those connections and thus inhibits action – starting with our own thinking. For example, recent research by MIT's John Sterman shows why vague concerns about global warming don't necessarily translate into political action (see sidebar, "Feeling the Heat").

Sterman was struck by a curious disconnect in public opinion: polls show that while most Americans believe global warming is real, they feel little sense of urgency to do anything about it. To test his hypothesis that "much of this complacency arises from poor systems thinking skills," Sterman and his colleague Linda Booth Sweeney designed a thought experiment. They created two different scenarios, based on the known stock of CO_2 in the atmosphere and the flow of new CO_2 emissions, and asked graduate students from three elite universities to predict the likely outcome of each scenario. Nearly two-thirds of these students failed to recognize the logically correct trend (which is continued global warming). Their poor performance was based not on a lack of technical understanding, but on the failure to see the relationships between stocks (the current level of CO_2) and flows (the rate of new CO_2 emissions). If the rate of new CO_2 emissions is higher than the rate at which CO_2 is removed from the atmosphere, the overall level of CO_2 will continue to increase, and with it, the likelihood of global warming.

If people are confused by such basic interrelationships, it is little wonder that it becomes easy for politicians and citizens alike to pretend either that such problems do not exist or that someone else will deal with them. Sterman, Booth Sweeney and a growing number of educators around the world believe these failings reflect a massive neglect of systems education. An increasingly interdependent world means that systems thinking must become an educational priority. Ted Sizer, former dean of the Harvard School of Education and founder of the Coalition of Essential Schools, writes, "It is not hyperbole to say that the growing gap between the complexities we face and our capacity to come to a shared understanding of that complexity poses an unprecedented challenge to our future.... Even older students have little...understanding of the world's undeniable complexity."[6]

But the motivation for radical innovation in education will remain limited so long as the urgency of issues like global warming remains limited or absent. We are stuck in a "Catch

This is the natural state of the human world, separation without separateness.

22": systemic imbalances fail to compel our attention because we simply do not *see* them in the same way we see more immediate and local problems. And, we fail to see the systemic issues because we define urgency by what is immediate. We are victims of a self-reinforcing crisis of perception – a crisis of our own making. If it persists, we doom ourselves to continued passivity. Only catastrophe will compel action, which, given the growing social divide that distributes problems like global warming unevenly between rich and poor, is likely to manifest as social and political disruption – not unlike what we are already seeing around the world.

My view is that nothing short of a profound shift in the Western, materialistic worldview is likely to dislodge this crisis of perception. How can diverse people from around the world come to a fuller sense of the whole – that is, the social, economic, and ecological systems we share? Perhaps that will begin when, together, we start to appreciate the exquisite web of interconnectedness that enables life in the universe, wherever we stand, and the role of our own consciousness in that web.

While most Americans believe global warming is real, they feel little sense of urgency to do anything about it.

Making the Connections

In recent years, thought leaders from many scientific disciplines have begun to construct a picture of an interdependent universe far richer than almost any of us might imagine, catalyzed initially by findings in quantum physics. In his 1951 book, *Quantum Theory*, physicist David Bohm proposed a hypothesis based on the mathematics of quantum theory: if you separate an atomic particle and the two elements of the particle go to opposite ends of the universe, then altering the spin of one element will change *instantaneously* the spin of the other. Bohm posed this conceptual challenge because he believed that quantum theory revealed the "unbroken wholeness of the universe," contradicting our culture's dominant Newtonian view of separation and causality arising from one thing acting on another.

Bohm's supposition was later taken up by physicist J. S. Bell. Bell further developed the theory and demonstrated empirically that Bohm was right: a change in spin of a single particle could be observed immediately, across a very large distance, in a separate particle previously connected to the first. Physicists call it "Bell's Theorem" or the "Principle of Non-Locality," and its repeated empirical corroboration has been called "one of the most shocking events in twentieth-century science."[7] Physicists are quick to caution that, while non-locality operates at the subatomic scale, whether such interdependence exists at more "macro" scales remains to be demonstrated – leaving many questions regarding the relevance of this phenomenon for humans and the social world. An astonishing recent project, in a different context, suggests that new answers may be coming.

A team of engineers, physicists, and psychologists has been studying the output of 37 random-number generators in 17 countries, to see whether there is a level of connectedness operating at the human level, and not just at the subatomic level of Bohm's prediction. These machines, used for scientific research, are isolated from every known form of human or natural interference, such as electromagnetic or telecommunications waves. Yet, on the morning of September 11, 2001 the random-number generators behaved in very nonrandom ways, inexplicably showing the influence of some non-ordinary disturbance, presumably human in origin (see sidebar, "A Non-Random Occurrence").

Interestingly, pioneers like Bohm and Albert Einstein never had much doubt that the implications of quantum theory extended into the domain of human awareness and social harmony. "The most important thing going forward," said Bohm in 1980, "is to break the boundaries between people so we can operate as a single intelligence. Bell's theorem implies that this is the natural state of the human world, separation without separateness. The task is to find ways to break these boundaries, so we can be in our natural state."[8] Einstein, Bohm's colleague at Princeton, spoke of a similar aspiration:

> "The human being experiences himself, his thoughts and feelings as something separate from the rest. A kind of optical delusion of our consciousness. This delusion is a kind of prison for us, restricting us to our personal desires, and to our affection for a few persons nearest to us. Our task must be to free ourselves from this prison by widening our circle of compassion to embrace all living creatures and the whole of nature in its beauty."

What does this mean practically? For Bohm, it meant dedicating much of the last 10 years of his life to understanding the potential of dialogue to foster deep personal and collective awareness of connectedness. Sadly, he did not live to see the growing evidence of its application.
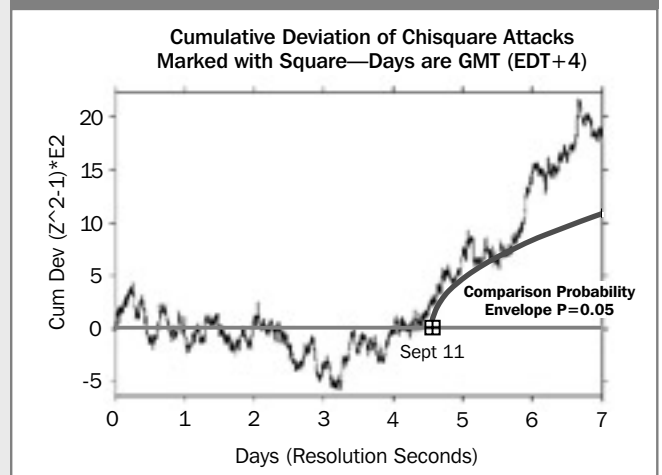
A Non-Random Occurrence

Random-number generators – devices used to generate sequences of random numbers used in scientific and industrial research – must be insulated from external forces, such as electromagnetic radiation, telecommunication signals, and every known form of human or physical interference, or they cannot perform their function.

Since 1998, within the Global Consciousness Project (a social version of J. S. Bell's quantum physics experiment), an interdisciplinary team of scientists has been monitoring more than three dozen random-number generators around the world to track possible effects from unexpected sources.[17] What they found on September 11, 2001 was unexpected indeed.

Something went amiss with the random-number generators in the world, individually and collectively, at exactly the time of the terrorist attacks. Beginning a few hours before and continuing for two days after the attack, the data showed unexpected deviations in the output of individual devices, and an unprecedented correlation among different devices across the network. The researchers estimate the probability of what was observed at less than one in one thousand. They conclude that

Figure 4 Terrorist Attacks Context, Sept. 7–13, 2001

Cumulative Deviation of Chisquare Attacks Marked with Square—Days are GMT (EDT+4)

Cum Dev $(Z^2-1)*E2$

Days (Resolution Seconds)

Comparison Probability Envelope P=0.05

Sept 11

"it is unlikely that (known) environmental factors could cause the correlations we observe…." Barring demonstration to the contrary, "we are obliged to confront the possibility that the measured correlations may be directly associated with some (as yet poorly understood) aspect of consciousness attendant to global events."[18]

Kahane talks about one such application in South Africa in the early 1990s. With the apartheid regime coming to an end, people who had been killing one another were struggling to form a democratic government. Says Kahane, "A popular joke at the time said that, faced with the country's daunting challenges, South Africans had two options: a practical option and a miraculous option." The practical option was that everyone would "go down on their knees and pray for a band of angels to come down from heaven and fix things for us." The miraculous option was that people would "talk with one another until we found a way forward together."[9] Fortunately, South Africans opted for the miraculous option – talking with one another and discovering their interconnectedness to their common homeland, to their future, and to one another.

Many businesses are recognizing that traditional, top-down control becomes less viable as interdependence grows.

Applying Wisdom of the Past

The challenges we face can seem overwhelming. But humans have innate capacities, beyond our social conditioning, to develop a more holistic awareness of our relationship to the world. The connection between human consciousness and the material world has been a foundational idea in many of the oldest societies in history. It is now reentering the mainstream of Western culture due, in part, to new scientific theories that are more holistic. After all, science is the religion of this age, and the source to which we look for the most authoritative interpretations of reality.

Business leaders, teachers, and other professionals also are drawing from the wisdom of the past, and from their own experience, to create more inclusive and integrated ways of living and working. This encompasses diverse global movements, from holistic health, to restorative justice, to learner-centered learning in schools. Many businesses are recognizing that traditional, top-down control becomes less viable as interdependence grows. Increasingly, businesses are striving for fewer layers of management and encouraging more "self-organizing" – operating with minimum imposition from the top, and continually bringing change from the periphery to the center. But we are at the very outset of this journey, and the immense stresses on traditional institutions of all sorts are causing some institutions to become more hierarchical and rigid. While it is fashionable to claim the spread of democracy around the world as a victory of Western ideals, in fact, many experience the opposite: the imposition of a new world order, driven predominantly by authoritarian institutions unresponsive to broad constituencies whose lives they are altering. Yet, older notions of self-organizing and self-governing exist throughout the world – in native and indigenous cultures, for example – wherever human beings have tried to understand nature deeply enough to live according to its guidelines.

Perhaps the scientific era is about to move to another phase – and the democratic era, as well. I suggest that we don't understand democracy well. Like Western reductionistic science, the present "Washington consensus" view of democracy is but one prototype, with great strengths but also great limitations. Most people in the US think of democracy as a kind of bequest, like an old suit of clothes. But what if it is actually something we're still learning and creating? What if, to create a more desirable global future, we must rediscover and more effectively apply the lessons we claim to know so well?

In his 1871 essay "Democratic Vistas," Walt Whitman wrote:

> We have frequently printed the word democracy. Yet I cannot too often repeat that this is a word the real gist of which still sleeps quite un-awakened.... It is a great word whose history, I suppose, remains unwritten because that history has yet to be enacted. It is, in some sort, younger brother of another great, and often used word, "nature," whose history also waits unwritten.

Were he alive today, I believe Whitman would be writing not about American democracy, but about global society, and its as-yet-unwritten links to nature. When executives in global companies talk candidly, their real concern usually is not the cost of capital or return on sales; it is the social and political stability of the world they will leave behind.[10] They, too, see the future as an alien place. If it is to become more hospitable, it is up to us to create it so.

Endnotes

1. Despite pledges by the G7 nations to cut the incidence of global poverty by half, the only region to see significant decline is East Asia, with a 12-percent reduction since 1990. In Africa, South Asia, and Latin America the number of people living on less than $1 per day grew by about 80 million from 1990–1998. Worldwide, the number of people living on less than $1 per day remained static at about 2.7 billion throughout the 1990s, and the number living on less than $2 per day grew from 2.7 billion to 2.8 billion, according to Oxfam. http://www.oxfam.org/eng/pdfs/pp000721_G7_missing_the_target.pdf.

2. For the full text of Mieko Nishimizu's address, see "Looking Back, Leaping Forward," *Reflections*, Vol. 4, No. 4. http://www.reflections.solonline.org.

3. Adam Kahane's new book, *The Victory of the Open Heart: Solving Tough Problems Through Talking and Listening*, will be available in 2004. His work in developing capacity for groups to function in the midst of this complexity appears in "How to Change the World: Lessons for Entrepreneurs from Activists," *Reflections*, Vol. 2, No. 3. An earlier discussion of the first two types of complexity can be found in G. Roth and P. Senge, "From Theory to Practice: Research Territory, Processes and Structure at an Organizational Learning Center," *Journal of Organizational Change Management*, Vol. 9, No. 1 (1996).

4. For more on the work of Robert Fritz, see http://www.robertfritz.com. See also "A Lesson From the Arts," *Reflections*, Vol. 2, No. 4. http://www.reflections.solonline.org. See also *Your Life As Art* (Newfane, VT: Newfane Press, 2002).

5. See John Elter, et al. "The LAKES Story," *Reflections*, Vol. 1, No. 4. http://www.reflections.solonline.org.

6. T. Sizer, P. Senge, and L. Booth Sweeney. "Systems Schooling for School Systems," working paper, Harvard Graduate School of Education, 2003. See also, P. Senge, et al. *Schools That Learn: A Fifth Discipline Fieldbook for Educators, Parents, and Everyone Who Cares About Education* (New York: Doubleday/Currency, 2001).

7. D. Radin. *The Conscious Universe* (San Francisco: Harper, 1997): 278.

8. J. Jaworski. Personal communication, 1980. See also J. Jaworski. *Synchronicity: The Inner Path of Leadership* (San Francisco: Berrett-Koehler Publishers, 1996).

9. A. Kahane. *The Victory of the Open Heart: Solving Tough Problems Through Talking and Listening* (San Francisco, Forthcoming 2004).

10. SoL provides opportunities for executives to engage in this type of frank conversation. As a specific illustration, please refer to an invitation from a group of SoL executive members to the larger community called "the Marblehead letter." For the full text of "the Marblehead letter," see http://www.solonline.org/repository/item?item_id=163561. The initial economic sponsors of the global SoL network met in June 2001 to review the results of the first three years of organizing work and to provide input on SoL's potential contribution to issues of importance for firms and societies. The group, meeting in Marblehead, Massachusetts, identified a small set of issues fundamental to creating positive futures in an interdependent world, and invites the SoL community into ongoing dialogue on these topics:

    The social divide: the ever-widening gap between those who participate in the increasingly interdependent global economy and those who do not.

    Redefining growth: economic growth based on ever-increasing material use and discard is inconsistent with a finite world.

    Variety and inclusiveness: developing inclusion as a core competence in increasingly multicultural organizations.

    Attracting talented people and realizing their potential: developing commitment in a world of "free agents" and "volunteer" talent.

    The role of the corporation: extending the traditional role of the corporation, especially the global corporation, to be more commensurate with its impact.

    The system seeing itself: the challenges of coordination and coherence in social systems.

11. P. Senge and G. Carstedt. "Innovating Our Way to the Next Industrial Revolution: Building Sustainable Enterprises," *Sloan Management Review*, Winter 2001, Volume 42, Number 2, pp. 24–38. http://mit-smr.com/past/2001/smr4222.html.

12. W. McDonough and M. Braungart. *Cradle to Cradle: Remaking the Way We Make Things* (New York: North Point Press, 2002).

13. Ibid.

14. For more information on the Sustainability Consortium, see http://www.solonline.org/public_pages/comm_SustainabilityConsortiumCore/

15. See Sterman, John D. and Booth Sweeney, Linda. "Cloudy Skies: Assessing Public Understanding of Global Warming," *System Dynamics Review*, Vol. 18, No. 2, 2002. http://web.mit.edu/jsterman/www/cloudy_skies.html. See also the presentation at SoL Research Greenhouse III in 2002, at http://www.solonline.org/repository/download/Sterman_Greenhouse3.pdf_1.pdf?item_id=364437.

16. See http://www.ipcc.ch.

17. Radin, D. "Global Consciousness Project Analysis for September 11, 2001," at http://noosphere.princeton.edu.

18. R.D. Nelson, D. Radin, R. Shoup, and P.A. Bancel. "Correlations of Continuous Random Data with Major World Events," p. 10, article (currently in review) available at http://noosphere.princeton.edu.

The Power of Learning Communities

By C. Sherry Immediato

(circa 1978)

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When someone unable to attend SoL's first Global Forum in Finland asked me to share the highlights, one I described was the overwhelming success of a co-created meeting that allowed more than 300 participants to experience SoL as a tangible global community – an encounter previously virtual, and largely abstract, for many people. I also mentioned that in this process, we had managed to recreate in microcosm a surprising number of the world's struggles and misunderstandings.

For example, we have SoL communities in a number of countries in the Middle East. Some individuals were unable to participate due to visa difficulties, a first hurdle to simply being together. One country's group decided at the last minute to stay home, puzzling and disappointing others who had planned to use the neutral ground of Finland to further their relationship. Others from the Gulf States did report that the remarks of a few participants were something short of welcoming. There were examples of our not always bridging the north/south and east/west divides particularly well. And of course those of us from the U.S. did tend to take matters unilaterally into our own hands on occasion, when other solutions jointly reached might have been better. My questioner then asked whether I found this depressing, since a gathering of people committed to vision, productive conversation, reflection, inclusivity, and learning should be relatively free of the typical social, economic, and political conflicts the rest of humanity experiences. If there was no hope for this group, she implied, was there hope for any of us?

In fact, participants at the Helsinki meeting talked about just this subject. It seemed to most that learning communities such as SoL are the *ideal* practice fields for us to confront the mental frameworks and bad habits that keep us stuck in short-term, self-interested, and ultimately self-defeating patterns, and to begin developing the capacity to think and act differently. What better company for such difficult tasks than a willing set of fellow learners?

One thing seems certain – the shifts we are talking about cannot be accomplished alone. We need the support of communities in which our commitments and lives are seen and held – especially when we find ourselves losing heart.[1] Remaining present to the most challenging situations, rather than ignoring or attacking them, requires reliance more on the energy of clarity and courage than of adrenalin. These choices and capabilities that Peter talks about crystallized for me many years ago. The following experience helps explain why I see SoL as such a valuable resource for us in dealing collectively with complexity we simply cannot address alone.

In 1978, my public policy classmates and I made our way into the world, full of youthful idealism, confidence, and fearlessness. I had been an intern, and was then an employee, of the City of Boston's Employment and Economic Policy Administration, supporting a special project on business (and job) retention and attraction.[2] In this capacity, I had the opportunity to speak at length with many Boston business leaders, as well as with the chronically unemployed.

I was not surprised by the deep suffering of those unable to make a living – in either an emotional or economic sense – and I had probably accepted that even with the best policy "safety nets" some would not be reached. But I was unprepared to learn that some of our well-intended policies actually contributed to the problems these people experienced. The reality sank in as I talked with people who came to our office to apply for training or other job assistance. Too often, they were ineligible for programs because they had participated in a previous program, though the reason they needed to apply for a new program or service was because the previous one had failed in some way. The "fixes that backfire" system structure became real for me when we were forced to turn away some of the people who needed us most. The recognition that, without significant personal and organizational change, I was destined to perpetuate this system was sobering indeed. Worse yet, those working with me seemed cloaked in resignation or denial about this reality. And we were the good guys.

At the other end of the economic spectrum, my visceral sense of the dilemmas of those in positions of power was a type of pain I had not anticipated. For example, the chairman of one of the city's largest banks unexpectedly invited himself to an interview I was conducting

with another corporate officer. He voiced his dismay about the city's failure to work with, or even to acknowledge, business leadership in Boston as a partner for change. Here was a man who seemed to want to do the right thing and certainly had a great deal vested in a healthy local economy, who had every conceivable resource at hand (including an office bigger than my apartment), and who did not know what to do! I became confused about who the good guys were, and began to question whether there even were good guys and bad guys. This was truly an alien world to me – one without sides and, suddenly, with more possibilities. My mind was blown and my heart was broken open.

There were things about this time in my life that made learning a little more likely. As someone new to the system, it was possible to see it with fresh eyes. I also had enormous freedom in structuring my work – the result of wise, amused, or exhausted supervisors. During the initial internship, I also had the counsel of Francis Bator, a great political economist and fine man. Even so, I do not think I would have had enough courage to continue to keep an open mind and heart without the support of what I would now call a learning community.

A group of my classmates had remained in the Boston area, and for many months, we met at least once a week for beer and camaraderie, exchanging political gossip and venting about life in large, and usually bureaucratic, systems. But before long the talk turned to the larger realities we were confronting in a variety of jobs and policy areas. What would really make the city diverse and livable for all its citizens? How might we ensure the protection of children, usually by removal from their homes, while also encouraging the stability of families? Should optimal environmental policies be determined in part by economic conditions? What were we really trying to accomplish in the face of disturbing symptoms of systemic dysfunction? And what would we actually do when we went back to work in the morning? Along with what most of us would now see as fairly deep dialogue, we also had a space in which to laugh and cry about this world that was not what we expected, but about which we cared deeply. This process helped me recognize that I cared more about the process of collective inquiry and change than its content, leading me to learn the language and practice of business and organizational behavior. More than 25 years later, a number of lasting friendships survive from this group, often around a shared commitment to community service.

That early conversational container holding our dreams and aspirations, our befuddlement and curiosity, and our frustrations and despair has been an important source of my deep commitment to develop the core idea of SoL – the power of learning communities as a tangible contribution to creating desired futures in a global society.

During the past two years, the founding SoL Council of Trustees has been exploring the practical and conceptual aspects of what it means to create and maintain cross-system learning communities. We believe that three basic processes intertwine to bring SoL to its full potential: applied learning (including an explicit research component), community development and maintenance, and ongoing study in a few focal areas that link our diverse activities. As a number of task groups are exploring what it would mean to organize our community more explicitly around these key processes, it has become increasingly clear that while the implementation details may be

unique to SoL, the core processes are intrinsic to sustained collective reflection and action.

While they might be generic, these processes are not automatic. They require structure. In the case I described, our group understood itself as more of a personal support network than a collaborative work group. We certainly were engaged in applied learning, but as solo practitioners we were without any thought or mechanism to compile our experiments and insights. As a consequence, our capacity to develop was fragmented, and we had no way to share what we learned beyond the group. By contrast, groups can create amazing results when they rally around a few key focal areas for a short period of time. But Don Tabone, a specialist in crisis intervention, notes that relationships that are tenuous prior to an event usually fall apart after a burst of activity – there is no community, and no more learning together without another crisis.

The implications of trying to hold together these three key elements – community, focused inquiry, and application – are significant for our capacity to create something together. Deep dialogue, engaging projects, or provocative research are not sufficient individually to achieve the results we want, and we should not assume that one will somehow organically cause the emergence of the others. I think this has been the single biggest experiential learning within the SoL community.[3] One of the most significant contributions SoL can make is to advance our understanding of the dynamics of large-scale learning communities. For example, as we go forward, I imagine that an important part of SoL's agenda will be the exploration of the minimal structures and tools that make it possible for us to increase collective intelligence and wisdom.

SoL is a playing field that many of us share, and I trust it will make practical contributions in areas such as innovation, sustainability, collective leadership development, and large-system change. Am I discouraged that, as a community, we mirror the stresses and strains in the world around us? Quite the contrary – and it's not because I enjoy the occasional good argument. Communities such as SoL, as places of respite from less friendly circumstances, can adopt a culture of superficial harmony to offer simple relief to the battle weary and lonely. This tendency teaches us little about how to function well in the realities of daily life. Rather, I am quite encouraged that we care to take on work important enough that all of our energies surface – "the good, the bad and the ugly." If SoL provides a safe space to work productively with all of these energies – in part because we can agree on a larger purpose of creating organizations and communities worthy of the commitment of their members, we will have made an essential contribution to organizational learning. Best of all, we will have developed, in this practice field, our capacity to participate fully in our families, organizations, governments, and societies to create together the future we desire.

Endnotes

1. A number of SoL members participate in ongoing learning circles. Their experience has influenced my language in describing the quality of learning community we are seeking to create. Special thanks go to Beth Jandernoa for sharing her experience as a member of the Circle of Seven. This circle and others are described in Glennifer Gillspie's "Ringing Out into the World: The Transforming Power of Women's Circles" in *Fabric of the Future: Women Visionaries of Today Illuminate the Path to Tomorrow,* M.J. Ryan, ed., (York Beach, Maine: Conari Press, 1998).

2. In the 1970s, most urban centers in the northeastern United States lost population and jobs at a rapid rate in the relocation of business to the "sunbelt" – areas with lower tax rates and labor costs. The area left behind by these fleeing businesses has been referred to as the "rust belt." While Boston had the benefit of a strong high technology and financial services base that remained relatively stable, it still suffered significant loss of jobs for city residents. As a result, business and job retention was an urgent priority.

3. The reasoning behind SoL's design is described by Peter Senge and C. Otto Scharmer in *"Community Action Research,"* published in *Handbook of Action Research,* Peter Reason and Hilary Bradbury, eds., (Thousand Oaks, California: Sage Publications, 2001). This chapter is available in the SoL Knowledge Repository at http://www.solonline.org. In this chapter, Peter and Otto describe the importance of research, practice, and capacity building as interconnected activities present within SoL. I see these as essential to the applied learning process, but not sufficient to achieve the focus or ongoing community development that learning communities require.

From the Editor

By Karen Ayas

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Whether we turn to the scientific evidence or the daily news, there is no escape from economic, ecological, or social imbalances in the world. There is increasing concern about these problems, but we continue to pretend that someone else should deal with them.

Peter Senge reminds us of the responsibility we have as citizens of a global society. The complexity of the challenges we face in our increasingly interdependent world is undeniable. As I read and reflect on the article, I am struck by both our blindness to our own power as individuals, and the potential impact of our seemingly small actions, to create more connected, compassionate ways of living, working, and being.

Creating a positive global future starts with a deep personal commitment to consider who we are in our personal and professional lives, how we see ourselves and our relationships with one another and the world we live in, and what we truly care about. The capacity to create is inherent in us all, not only in the creative artist. The painter has the blank canvas – the space for creativity. We, too, need space for creativity – amid the noise of daily life – to be more effective as leaders and to create what we genuinely desire.

If we can build into our days the reflective space to be in touch with ourselves and dwell on the questions that matter, we may find more answers than we think. It is our hope that *Reflections* will serve as a medium for such reflection, foster dialogue, and increase the collective awareness of our connectedness.

I hope that you will create space for yourself and for others to reflect on the questions Peter raises: What does it mean to live in a global society? What will it take to see the urgency of what is not local and truly begin to think and act in global terms? What is it that we can individually commit to?

I also hope that with *Reflections'* new format – one provocative feature article each month – we can deeply focus on both very practical and personal challenges, and that you will all engage in the exploration of critical issues facing the institutions and social structures that are shaping our global future.

Reflections

The SoL Journal
on Knowledge, Learning, and Change