How Do Societies Learn?
What is the contribution of public interest scenarios?

Barbara Heinzen
barbara@barbaraheinzen.com
Final August 2008, corrected 21 January 2009

Background

In the 1980s, only a few people had heard of scenario planning. It seemed to be just another ephemeral management fad. Since then, its use has spread into more and more organisations, sectors and subjects.

My own practice in scenario thinking began at Shell in 1985 and has continued independently since 1987. Like many others in this field, much of my work has been for private sector companies thinking about their long term strategies. More rarely (but with increasing frequency), my assignments have come from civic groups asking for help in imagining the future of their societies as a whole. These 'public interest' scenario projects have involved self-organising groups addressing issues of common public concern.

Despite the persistence and growth of scenario work, there is little systematic hard evidence that it has influenced decision-making or behaviour. There are some anecdotal reports, but the greatest evidence of impact is in the survival of scenario work itself over so many years. Recently, the James Martin Institute for Science and Civilisation has taken up the challenge of establishing a scholarly home for futures work, with an initial focus on scenarios practices. While a lot has been written about the use of scenarios in the private sector, there has been relatively little on scenario work in the public interest (See Box 1). I was therefore asked by Angela Wilkinson at the James Martin Institute to write a paper that would 'open up' the subject of public interest scenarios. [1]

Box 1
Publications on futures work in the public interest

Written reviews of public interest work are rare and all concern various types of scenario building. Last year, a team led by Edward Parson from the University of Michigan, concluded a study on the use of scenarios in addressing climate change, including case studies of four major projects. At a national level, scenario methods were used on three important occasions in South Africa between the early 1980s and early 1990s. These have been studied by Graham Galer and Nick Segal in recent years and before that described by Adam Kahane and Clem Sunter. In 2004, Adam Kahane wrote more fully about his own public interest work in and beyond South Africa. That same year, 2004, the Society for International Development (SID) published a special issue of its journal **Development** to review the use of scenarios in the public interest, including SID's own initiatives in East Africa. In 2002-3, Steve Carpenter worked with people in the Northern Highland Lake District of Wisconsin using the global scenarios produced by the Millennium Ecosystem Assessment project. This work was reported in **Conservation Biology,** April 2003**.** Much earlier, in 1994, a study was delivered to Scottish Enterprise which covered some of the same ground as the **Development** special issue. This work later appeared as a short article written for Global Business Network's publication, **Deeper News**.

2007 Parson, Edward A. et al. *Global Change Scenarios: their development and use*, Report by U.S. Climate Change Science Program and the Subcommittee on Climate Change Research. (available at http://www.climatescience.gov/Library/sap/sap2-1/finalreport/sap2-1b-final-all.pdf)

2007 Segal, Nick. *Breaking the Mould: the role of scenarios in shaping South Africa's Future,* Sun Press, Stellenbosch, South Africa.

---

[1] Angela Wilkinson is the Director of Scenario Planning and Futures Research, James Martin Institute for Science and Civilisation, Said Business School, Oxford University.   She is combining research, education and practice, with an initial focus on clarifying what works, when and why (and when not) in terms of scenarios practices.

2004 Heinzen, Barbara. guest editor, *Development: surviving uncertainty*, Volume 47, Number 4, December 2004, Society for International Development, Rome, Italy. (Includes article by Graham Galer on South African scenarios.)

2004 Kahane, Adam. *Solving Tough Problems: an open way of talking, listening, and creating new realities*. Berrett-Koehler Publishers, San Francisco, USA.

2003 Peterson, Garry D, Graeme S. Cumming, Stephen R. Carpenter, "Scenario Planning: a Tool for Conservation in an Uncertain World" in *Conservation Biology, Vol. 17, No. 2, April 2003, p. 358-366*

2001 Ilbury, Chantell & Clem Sunter. *The Mind of a Fox: Scenario planning in action*. Human & Rousseau Tafelberg, Cape Town, 2001.

1994 Heinzen, Barbara, Alister Wilson, Campbell Gemmell. *Pioneers of Persuasion: a review of the use of scenarios in the public sector*. Unpublished report for Scottish Enterprise.

1994 Heinzen, Barbara. "Political Experiments of the 1990s" in *Deeper News*. Global Business Network, September, 1994. (a summary of the Scottish Enterprise report, available at www.barbaraheinzen.com)

1993 Kahane, Adam, "Learning from Mont Fleur: Scenarios as a tool for discovering common ground", *Deeper News 7 (1),* Global Business Network, 1993.

Most of these publications advocate public interest scenarios as a useful tool for engaging people on public issues of serious complexity. They describe the merits and uses of scenarios and scenarios processes and occasionally include some discussion of lessons learned. Many are written by practitioners who implicitly accept that scenarios are an effective tool for addressing a society's complex issues.

However, this very valuable body of work rarely addresses three underlying questions:
1. How do societies learn?
2. Do public interest scenarios contribute to the ability of societies to learn?
3. If so, how?

Before answering these questions, however, I conducted a census of public interest futures work in order to see where such work is taking place or had been done.

A Census of Public Interest Futures Work

This census was put together in late 2007 and early 2008 by combining an internet search of public interest futures work with requests to my professional networks for any other examples. These two sources generated a list of recent efforts in public interest futures work, as well as a few examples of other kinds of collaborative social learning.[2]

The results were instructive. In the early 1990s, Scottish Enterprise had asked, "Who in the public sector has done scenario work concerning economic development? And what can be learned from their experience?" At that time, the researchers spoke with 107 people, but found only eight useful examples of collaborative social learning, very few of which used scenarios. The search undertaken in late 2007, on the other hand, uncovered about 150 futures projects in Europe, Africa and the Middle East, North and South America and Asia.

Unlike fifteen years earlier, in 2007 there were both more projects and more organisations which regularly used collaborative scenario projects or other futures techniques to address issues of common concern:

- African Futures Institute
- African Leadership Institute
- CSIRO, Australia
- DEMOS, UK
- Forum for the Future, UK

---

[2] This census should soon be available on the James Martin Institute website: http://www.martininstitute.ox.ac.uk/jmi/ .

- IIASA – International Institute of Applied Systems Analysis
- IPCC – Inter-governmental Panel on Climate Change
- Landcare Research, New Zealand
- Millennium Ecosystem Assessment
- Millennium Project
- Nautilus Institute, USA
- OECD International Futures Programme
- Scottish Enterprise, UK
- Society for International Development
- UK Government Foresight Project
- UNDP – United Nations Development Program
- World Business Council for Sustainable Development
- World Economic Forum

It has been harder to establish what methods were being used in individual projects or by organisations, whether it was forecasting, collaborative creation of scenario narratives, or computer modelling. Scenarios were, however, the most frequently mentioned tool. Similarly, it was not at all clear how these different efforts were financed. Nor was it obvious who had been involved, in what fashion, with what result.

The issues being addressed by these processes existed at a variety of geographical scales. One took place in the small city of Montpelier, Vermont; others were tackling global issues like climate change or global finance. About a third of the projects focused on places: the future of a city, a region or a nation. Many involved societies in conflict, while economic issues (technology, economic development, intellectual property or global finance) appeared less frequently in public interest work, although it often dominates private sector scenario thinking.

The largest number of public interest exercises addressed issues around 'life and life support': agriculture and food, climate change and air pollution, the assessment of ecosystems, biodiversity and sustainability, nutrition, health and disease, energy and water. Over half of all the projects on the list were in these areas.

This 'census' cannot be considered as authoritative because it contains too many biases. To name just a few: projects may not be reported on the Internet due to lack of internet access; non-English language reports may not be appearing through an English-language search engine; any individual's professional networks have their own boundaries of subjects and geography and miss out other areas of work. That said, this tabulation has offered a broad idea of the work being done. What is particularly striking is the number of projects concerned with environmental issues and the futures of particular places. Together they suggest that existing institutions are not meeting peoples' desire to address exceptionally complex problems in their immediate societies.

Don Michael and the 'Societal Morass'

If existing institutions are failing (or are perceived as failing), it is a major change. For many decades, our societies have assumed that large-scale problems were most effectively addressed by governments and other formal institutions, often at increasingly larger scale. Calls for global government to address global problems is a good example of this assumption. However, if government institutions are failing in the face of growing complexity, what is the alternative?

The alternative could reside in the ability of societies as a whole to learn. Such learning would integrate individual and institutional learning. It would involve the leadership of a society and its wider population working together across boundaries of power, belief and class. It would harness everyone's ability to accept and respond to the highly unpredictable and complex issues facing humankind today. Finally, it would be grounded in the creation or discovery of shared values that can guide the learning process itself.

This understanding of what it means for a society to learn permeates Don Michael's book, ***Learning to Plan and Planning to Learn***.[3] In the 1997 Foreword to the second edition, Don Michael described America's 'societal morass' which made learning so necessary:

> *There is no agreement on basic definitions for describing and interpreting the human condition. There is no agreement on which values take priority under which conditions, or how these values should be expressed in behaviour. Environmental sustainability, how much poverty is acceptable, population stabilization, group rights vs. individual rights, public interests vs. private interest, 'quick fixes' vs. long term prudence, the limits of national sovereignty, and the conduct of the media, are chronic, festering examples of disagreements over what values pertain under what circumstances.*
>
> *…*
>
> *These dismaying and desperate circumstances would surely seem sufficient to turn all parties towards learning how to overcome them …[4]*

How Do Societies Learn? A Few Ideas

My own interest in how societies learn grew out of the first assignment I did for Shell's Group Planning Department in 1984. I was asked to predict, based on their cultural characteristics, which would be the next newly industrialising countries. The resulting paper demonstrated that when the majority of the population in a society was healthy and educated, rapid economic growth often followed. As the head of Shell's planning department, Arie de Geus, said at the time, *"This is what we have all seen in developing countries, but never had so clearly explained."[5]*

Arie de Geus

Arie de Geus still quotes this 1984 paper because he was convinced that the only sustainable advantage a company had was to learn faster than its competitors. He was – and remains – an early advocate of planning as learning and has been a leader in the Society for Organisational Learning since it was founded. He often reminds his listeners of the three ways children – and the rest of us – learn:
- Learning by playing
- Learning by doing
- Learning through dialogue[6].

Cape Town discussion

In early June 2008, the World Economic Forum and the James Martin Institute organised a meeting in Cape Town, South Africa, of African scenarios practitioners. Their assignment was to review and gather lessons from the considerable experience of public interest scenario work in Africa since the early 1980s.

During the second session, while others were discussing techniques and methods used in Africa, five of us took on the question of how societies learn in order to understand whether scenarios work was facilitating that learning. Our discussion postulated several lists of things that inhibit or help individuals and societies to learn.

---

[3] Don Michael was a member of the Club of Rome when it published the influential ***Limits to Growth*** in 1973. This was an early example of public interest futures. The work developed computerised forecasts of human impact on earth's resources and sinks. Through his membership of Global Business Network, Don Michael was an important teacher to many of the people involved in scenario work today. Some of his essays are on the GBN website at: http://www.gbn.com/PersonBioDisplayServlet.srv?pi=24680
[4] Michael, Donald M. ***Learning to Plan and Planning to Learn, second edition with new Forward***. Miles River Press, Alexandria, Virginia, 1997, p. 23. This book is preoccupied by the challenge of how societies learn and has a number of useful lessons.
[5] This paper, which was never published, is available at www.barbaraheinzen.com in the Publications section. It is titled "Social Foundations of Economic Development".
[6] Arie de Geus referred me to the classic education book by John Holt, ***How Children Learn***, 1967, revised edition 1983, Penguin. John Holt also wrote**, *How Children Fail***, 1964, revised edition 1984, Penguin. See also his own book, Arie de Geus, ***The Living Company: growth, learning and longevity in business,*** Nicholas Brealey Publishing Ltd, London, 1999.

Box 2 Cape Town Discussion Postulating How Societies Learn								
LIST ONE **Individual learning**		**LIST TWO** **What inhibits** **society's learning**		**LIST THREE** **How societies learn** *positive drivers*		**LIST FOUR** **How societies learn** *negative drivers*		**LIST FIVE** **"Cheap Talk",** **"Cheap Pain"**
Open mind		Becoming isolated in own opinion: - leaders - communities		People get involved, others provide them with feedback on their own behaviour		From their own mistakes		"Cheap Talk" c.f. Elinor Ostrom: *Managing the Commons*
Being taught, teaching		No feedback, e.g. leaders & their 'yes-men'		Open societies		Crisis & pain		What are the effective boundaries for cheap talk? Must they be small?
Experience		Stigma, e.g. HIV/AIDS		Playing Doing Dialogue		Indoctrination via propaganda, "media crap"		Can societies learn through "cheap pain"?
Sharing		Hunger & want		When culturally resonant & consistent		Fear & intimidation		Can scenarios produce "cheap pain"?
Observing		Who matters is narrowly defined		Who matters is broadly defined				
Curiosity		Rigidity		Leadership: e.g. Museveni & HIV/AIDS or Lee Kwan Yu				
Lao Tse: - *tell me* - *show me* - *involve me*		Being comfortable, inertia		Ability to challenge leadership through civil society or courts				
"If you tell me, I will listen. If you show me, I will see. But if you involve me, I will learn."		Fear, intimidation & arrogance		Self-determination; societies learn without leaders; grassroots learning				
		"Social Entertainment Fund" e.g. (Big Brother TV series)		Having the ability to unlearn				
		Personal abdication		Personal 'virtue' – capacity to take individual responsibility				
				Role models				

The group exploring this question in Cape Town began by thinking about individual learning. Individuals learn, they thought, through teaching, experiencing, sharing, observing and being involved in something. For learning to take place, however, the individual needs to bring a degree of curiosity and an open mind.

In societies, we first postulated that a number of things inhibit learning: the isolation of leaders and communities, the lack of feedback (especially to leaders who surrounded themselves with yes-men), stigma, hunger and want, a narrow definition of who matters, rigidity, fear, intimidation and arrogance, the inertia of comfort, the distraction of what we called the 'social entertainment fund' (thinking of the Big Brother television show), and the abdication of personal responsibility.

There were four South African residents in this conversation, one from Kenya, the other three white South Africans with strong memories of the transition from apartheid. *"Societies learn from their own mistakes, from crisis and pain,"* said the South Africans. But, societies also learn when they are open and when people get involved because their involvement provides them with feedback from others. It is also important for 'who matters' to be broadly defined and leaders can help societies learn, as Museveni did with the HIV epidemic in Uganda or Lee Kwan Yu did in Singapore. Equally, societies can learn by challenging their leaders through civil society or the courts. When there is a will to self-determination, societies learn without leaders, through grassroots learning. We all agreed that learning is stronger when it is culturally resonant and consistent – something that is particularly important in Africa – and when good role models exist. Finally, we felt it was important to have the ability to 'unlearn'. Of course, we had to acknowledge that indoctrination via propaganda and media, fear and intimidation also foster learning, but not necessarily learning that is creative and beneficial.

Our conversation ended with discussion of an idea of Elinor Ostrom's: societies learn to manage common goods (like range lands or fisheries) through the help of what she calls "cheap talk"[7]. Her research has found that simply by meeting regularly at low cost, users of common pool resources can learn to manage these resources sustainably. This led to the suggestion that scenario processes were a form of 'cheap talk' where issues of common concern could be approached and understood systemically. That then led to the possibility that when scenarios offered unpleasant stories of the future they were perhaps giving people an opportunity to learn from 'cheap pain' – an opportunity (in Arie de Geus's construction) to 'play' out their fears in order to learn how to manage them.

How Do Societies Learn? Literature & a Few Interviews

This Cape Town conversation was little more than a series of guesses, based on our own experience and knowledge. What did the literature say? Surprisingly, apart from Don Michael's preoccupation, there seems to be very little explicit work exploring how societies learn. There is research into how children learn, work on how organisations learn (or can become 'learning organisations'), but there is very little that asks and answers the question: "How Do Societies Learn?"

The Internet did, however, throw up an extremely useful website, www.infed.org, which offers an encyclopaedia of informal education summarising the literature in this field.[8] Among many other writers, it mentions Donald Shön's 1971 book, *Beyond the Stable State*, which talks about the need to create learning societies, but swiftly becomes a discussion of how government and businesses learn. Kees van der Heijden in his co-authored book *The Sixth Sense*, writes about scenarios and organisational learning, but again does not consider how society as a whole might learn.[9] Work by Paulo Freire and Ivan Illich described on infed.org are conspicuously revolutionary in their preoccupation with popular informal learning, especially among oppressed or disadvantaged people. However, how societies as a whole learn, integrating both popular and elite and institutional learning, seems to be rarely addressed in the published literature.

The discussion that follows is based on my own work on the invention of ecological societies, lessons from some of the literature reviewed in the infed.org encyclopaedia, and a few targeted interviews

---

[7] Elinor Ostrom, *Governing the Commons: the evolution of institutions for collective action*, Cambridge University Press, 1990, reprinted 1996.
[8] http://www.infed.org/encyclopaedia.htm The homepage is edited by Mark K. Smith, Michele Erina Doyle and Tony Jeffs. The editors can be contacted at infed.org, c/o 39 Monnow Road, Bermondsey, London SE1 5RP (e) info@infed.org; (t) 44 020 7540 4929. Infed stands for INFormal Education. infed.org is an independent, not-for-profit site created by a small group of educators who are interested in the theory and practice of informal learning and social action learning.
[9] Van der Heijden, Kees and Ron Bradfield, George Burt, George Cairns, George Wright. *The Sixth Sense: accelerating organisational learning with scenarios*. John Wiley & Sons, Chicester, 2002.

with people working with futures or other types of social learning. (See Box 5 below for a discussion of literature and Box 6 for a list of people consulted).

From this review, six strong themes have emerged about how societies learn:
- Anxiety, fear and violence
- Dialogue
- Association & community
- Physical experience – feeling & doing
- Slow time
- Power

Anxiety, fear and violence all inhibit learning. However, dialogue, association and community, physical experience and slow time encourage learning, both in individuals and society. Finally, power can push in either direction.

Anxiety, fear and violence

In 1999, I was working with the Kenya Scenarios Project initiated by the Society for International Development. During that year, the team had written three scenarios, including one of the country splitting up violently into rival ethnic factions. This scenario was called *el Niño,* after some very destructive storms during the previous year. The trustees of the project – a group of leading Kenyan citizens – rejected our work until a fourth, positive story had been added to the set.

Several things happened afterwards which were extremely instructive. First, the very fact that the positive story was required pointed to the need for hope, for belief in a peaceful and prosperous solution to the grave troubles the country was facing. Second, when the stories were presented across the country, during the following year (2000-2001) something else occurred. The hopeful story, called *Flying Geese,* was often rejected as unrealistic, while the frightening story of civil strife, *el Niño,* was ignored or denied or people convincingly argued that 'we won't let that happen'. Discussions then focussed on the remaining two stories. One, *Katiba,* worked towards a new constitution while the economy suffered. The other, *Maendaleo,* foresaw a stronger economy that quickly foundered because its benefits were not widely shared.

Earlier this year in Kenya, following disputed presidential elections in December 2007, the country erupted into three months of violence and political assassination. That ended when the contending parties signed a fragile agreement to share power. The troubles forced hundreds of thousands out of their homes and led to the deaths of at least one thousand people.   Suddenly, the *el Niño* story everyone had wanted to ignore was taking place before our eyes and the old scenario team were often on call. Then, just as suddenly, once the violence cooled, silence again returned and no one wanted to hear the scenarios anymore.[10]

Why had so few people taken *el Niño* seriously when it was first written? Why, once the most acute violence had ended, did people lose interest in using our stories to avoid future bloodshed?[11]

John Holt's book on *Why Children Fail* is helpful here. He writes that "Children in school are like children at the doctor's. … all they think of is how much it will hurt or how bad it will taste." The experience of being at school, he write, makes children anxious and fearful. This fear, he believes, paralyzes their ability to learn. Instead, they develop acutely observant strategies for avoiding failure and humiliation: grabbing at answers, learning to parrot what the teacher is saying, or picking up a teacher's unconscious clues to the right answer.[12]

Two psychologists, Michael A. Milburn and Sheree D. Conrad, also explored the role of fear in their book *The Politics of Denial,* published in 1996.[13] They describe a culture of punitiveness in

---

[10]Personal communication with Ms Katindi Sivi, Institute of Economic Affairs, May and June 2008.

[11] According to one report, the Kenyan army staff college had rehearsed in 2000/2001 how they would react to the *el Niño* story. That rehearsal, we were told in Cape Town, influenced their decision not to support any side during the three months of political uncertainty.

[12] Holt, John. *How Children Fail*, Penguin, 1964, revised edition 1984, pages 38 & 60.

[13] Milburn, Michael A. and Sheree D. Conrad. *The Politics of Denial*. The MIT Press, Cambridge, Mass., 1996.

American society which accepts the physical punishment of children. To cope with the violence of this punishment from a loved parent, children will often deny that the violence has taken place. Later, as adults, this habit of denying painful facts is carried over into other arenas, including political attitudes and decisions.

The *el Niño* story gave rise to exactly these emotions, causing our listeners to react just as John Holt's failing children did. Many in Kenya found it easier to dismiss the story than to consider how to respond or prevent it.[14] Similarly, Lucy Neal, who is working Transition Towns, a civic movement to decarbonise society, town by town, neighbourhood by neighbourhood, argues that projections of peak oil and climate change do not help people respond to their threats. Instead, they "*send people running in the opposite direction so that they act like they don't know anything. The whole thing about denial appears to have people blocking their ears, saying 'I don't know, don't care and don't want to change my behaviour'.*[15]

Fear inhibits learning. Arguably, scenarios and projections that increase fear and anxiety will also make it harder for societies to learn.

Box 3
How Societies Learn: Some Useful Literature

For a stimulating read on how children fail and how children learn, John Holt's two classic books are essential. The editions cited here contain the original texts published in the 1960s, plus the author's later thoughts during the 1980s. There are a number of books on organisational learning, starting in 1971 with Donald Shön who described the need for learning societies. Donald Michael was another early writer on planning and learning. His work was picked up by Arie de Geus who also worked with Peter Senge in the Society for Organisational Learning. Kees van der Heijden was also colleague of theirs and in 2002 published a book that explicitly linked accelerated organisational learning with scenarios. Beyond organisational learning, there is the literature on informal education. One of the influential writers in this field in Ivan Illich who worked closely with Paulo Freire, both in Latin America. J. Macalister Brew is another interesting writer, reporting her work in the United Kingdom in a 1946 publication. More recently David Chrislip's work on collaborative leadership picks up similar themes of popular civic learning in the USA. Steve Waddell's recent book on societal learning stresses collaborative engagements between government, business and civil society working together on common problems. Finally, an important work on cultural differences in learning styles is Water Ong's book comparing oral and literate cultures.

These books are a small selection of what should become a much wider literature review. There is an interesting historical pattern in the publication dates, especially around informal education. In the past sixty years, there seem to have been two periods of innovative thinking about learning: just after World War II, and again in the late 1960s and early 1970s. It is arguable whether we are now in a similar period of renewed interest in learning (rather than teaching). My own book, *Feeling for Stones*, printed in 2004 and listed here, was an attempt to understand how societies might learn to invent ecological societies when we have no model to follow.

2005 Waddell, Steve. ***Societal Learning and Change: how governments, business and civil society are creating solutions to complex multi-stakeholder problems***. Greenleaf Publishers, Sheffield.

2004 Heinzen, Barbara. ***Feeling for Stones: learning & invention when facing the unknown***. Available on www.barbaraheinzen.com

2002 Van der Heijden, Kees and Ron Bradfield, George Burt, George Cairns, George Wright. ***The Sixth Sense: accelerating organisational learning with scenarios***. John Wiley & Sons, Chicester.

1999 De Geus, Arie. ***The Living Company: growth, learning and longevity in business***. Nicholas Brealey Publishing, London.

1994 Chrislip, David D. and Carl E. Larson. ***Collaborative Leadership: how citizens and leaders can make a difference***. Jossey-Bass, San Francisco.

---

[14] Similar emotional forces may be behind the rejection of HIV/AIDS projections and scenarios of future climate change.

[15] Lucy Neal was one of the founders of the London International Festival of Theatre and has a long-standing interesting in how societies learn and the role of arts and culture in the learning. Her current involvement in the Transition Towns movement is focussed on her own neighbourhood of Tooting in London.

1990 Senge, Peter M. *The Fifth Discipline: the art & practice of the learning organisation*. Doubleday Currency, New York & London.

1982 Ong, Water J. *Orality and Literacy: the technologizing of the word*. Routledge, London & New York.

1973 & 1997 Michael, Donald N. *Learning to Plan and Planning to Learn*, second edition. Miles River Press, 1997 (first published 1973).

1972 & 2004 Freire, Paulo. *Pedagogy of Hope: reliving pedagogy of the oppressed*. Continuum, London and New York, 2004. (*Pedagogy of the Oppressed,* originally published in 1972, one of the most quoted books in education Latin America.)

1971 Schön, Donald A. *Beyond the Stable State: public and private learning in a changing society*. Temple Smith, London.

1967 & 1983 Holt, John*. How Children Learn*. Penguin, London 7 New York, 1967, 1983, revised.

1964 & 1982 Holt, John. *How Children Fail*. Penguin, London & New York, 1964, 1982 revised.

1946 Illich, Ivan. *Deschooling Society*. Marion Boyars, London.

1946 Brew, J. Macalister. *Informal Education: adventures and reflections*. Faber and Faber, London.

Website:

Smith, Mark K, Michele Erina Doyle, Tony Jeffs, editors of **www.infed.org**. (Infed stands for INFormal EDucation)

Dialogue

If fear, anxiety and violence make it hard to learn, dialogue seems to encourage learning. Paulo Freire describes meetings he attended with Chilean peasants in the 1970s. *"I was impressed … by the intensity of the peasants' involvement when they were analyzing their local and national reality. It took them what seemed like forever to spill everything that was on their minds. It was as if the 'culture of silence' was suddenly shattered and they had discovered not only that they could speak, but that their critical discourse upon the world, their world, was a way of remaking that world." (Pedagogy of Hope, p. 30)*

When Arthur Muliro and Aidan Eyakuze were interviewed about the experience of doing scenario work in East Africa over the past ten years, Aidan Eyakuze said that *"We learn through … honest conversation".* Aidan went on:

> *We try to use conversation to be (as Archbishop Tutu says) 'rational about the past and emotional about the future.' We take an honest look at what is shaping our societies and try to understand the implications. We then see how we can make collective decisions (for better or worse).*

In both the experience of Paulo Freire and of the East African scenarios teams, it was important to establish a relationship of equals among all those in the room. This equality of voice helped the group to create new language that rephrased old problems and allowed people to 'unlearn' attitudes and understandings that were no longer relevant or positively harmful. These conversations, as I witnessed in East Africa, frequently gave a name and voice to issues that had previously been unspeakable. This was not done through any rational reasoning process, but through dialogue and a progressively deeper level of argument and understanding that developed in a culturally consistent way. As Arthur Muliro, from Kenya, noted

> *You also have to remember that we are oral cultures. Yes, we have modernised, but we are still largely oral. So there is a natural fit with the way that we talk to each other and*

the way that we learn. Our histories are unwritten, our archives are a mess and our leaders never write memoirs. So we learn our history by talking to each other.[16]

The importance of this deeper understanding was emphasized in an interview with Steve Rosell of Viewpoint Learning in California.

… when you talk about how societies learn … we are not talking about facts and figures. That doesn't make a huge difference, given the ability of people to deny and wave away things that don't fit their way of thinking. … we are talking about learning that changes mindsets and frameworks, those things that give people the ability to make sense of the world. When we design processes, we are always looking for ways to get to that deeper level, below the facts and figures. Different choices are based on different frames, different ways of interpreting things.

Steve Rosell adds another important point. This power of dialogue works best when people in the room differ from each other.

It helps to hear other points of view which are equally strongly held. [Dialogue] has to be with people who are different. It needs diversity to be helpful. If everyone is already on the same page, you don't need dialogue and won't learn anything from it. … We ask them to work with people about whom they have stereotypes, whose points of view they don't understand. Once a person sees that, it makes them more open to question their own assumptions …[17]

Association & community

Steve Rosell also reminds us that "Learning, as we all know, is a social activity." A similar point is made in Mark Smith's article at infed.org on the social orientation to learning. He writes about the value of association, of learning by observing others, participating in a community of practice and in a set of relationships.[18]

Elsewhere on the infed.org website, Mark Smith cites the work of Robert Putnam in *Making Democracy Work,* and *Bowling Alone.[19]* Putnam's research emphasizes the importance of communities that build strong networks of social capital based on trust and reciprocity.[20]

When interviewed, Arthur Muliro described the East African scenario processes in these terms.

First, when people have access to information and networks to help them process that information, then people learn. People have been absorbing our information. We have been using our networks to reach them. The networks provide credibility.

Second, by giving people information in a context, they are better able to understand it. So, for example, when we talk about climate change we link it to floods and changing rains in the region.

Third, we provide a safe space to explore the long term implications of new information.

---

[16] All the quotations about the East African process come from a conference call with Arthur Muliro, Society for International Development, Rome and Aidan Eyakuze, Society for International Development, Dar es Salaam, on 20June 2008. Starting in 1997, Arthur Muliro and SID led four scenario projects in East Africa over a period of ten years. Their work continues. I have been working with them throughout this period.

[17] Interview with Steve Rosell, President, Viewpoint Learning, Inc., California. Viewpoint Learning organises civic dialogues around difficult issues, bringing together people who do not normally meet. See: www.viewpointlearning.com.

[18] © Mark K. Smith 1999, at http://www.infed.org/biblio/learning-social.htm

[19] Putnam, Robert with Robert Leondardi and Rafaella Y. Nanetti. *Making Democracy Work: civic traditions in modern Italy*. Princeton University Press, Princeton, N.J. 1993. See also: *Bowling Alone: the collapse and revival of American community*. Simon and Schuster, New York, 2000. Other writers on social capital are: Baron, S., Field, J., and Schuller, T., *Social Capital: critical perspectives*. Oxford University Press, 2000 and Esterhuyse, W.P. *Social Capital: part of the wealth of nations*. Strategy Insight. Institute for Futures Studies, Steenbosch, 2000. I am indebted to Louis van der Merwe, for these last two references.

[20] Smith, M. K. (2001, 2007) 'Robert Putnam', *The encyclopaedia of informal education*, www.infed.org/thinkers/putnam.htm. Last update: April 11, 2008.

Lucy Neal comes to a similar conclusion based on her experience with the Transition Town idea.

> *The transition thing says you have to get real and get everyone in a place to understand the accumulating perils. [You need] to harness that fear, denial, terror, anger, guilt –all those things that become very emotive – because there is a plan for the future. We want to harness all that into something communal, some positive action. That seems to be a learning process.*
>
> *So why are people turning to these local initiatives even though they have never been an environmentalist or been in a town hall? There is an alchemy in putting peak oil and climate change together and then showing that everyone has something to contribute. There is no difference between 3-year olds in a seed swap and a climate scientist. This allows everyone to come together and make a contribution.*

Community, association, social connection are all ways that we can learn and collectively manage the fear inspired by threatening scenarios and the anxiety of somehow 'getting it wrong'.

Box 4
People consulted between December 2007 and June 2008

A number of interviews with people were conducted between December 2007 and June 2008, starting with people working with scenario planning. As the question shifted away from a primary focus on futures to a focus on how societies learn, people actively involved in projects where social learning was taking place were also interviewed. Frequently, futuremindedness was only a small part of what they were doing. Instead, the emphasis was on learning as a social activity.

Markus Amann, International Institute of Applied Systems Analysis, Austria
Steve Carpenter, University of Wisconsin, Millennium Ecosystem Assessment Scenarios
Aidan Eyakuze, Society for International Development, Dar es Salaam
Arie de Geus, Society for Organisational Learning, London
Jonathan Gunthorp, HEARD, University of Natal, South Africa
Nancy Heinzen, participant Nature Conservancy Rising Waters Scenarios, Hudson River Valley, New York
Tanja Hichert, South Africa
Nnenne Iwuji-Eme, Royal Dutch Shell, London
Adam Kahane, Reos Partners, Cape Town
Timo Karjalainen,Team Academy, Learning House, Society for Organisational Learning, London
Geci Karuri-Sebina, South Africa
Cho Khong, Royal Dutch Shell, London
J.P. Landman, South Africa
Arthur Muliro, Society for International Development, Rome
Lucy Neal, Transition Town, Tooting, London
Simone Pulver, Watson Institute, Brown University
Steve Rosell, Viewpoint Learning, California
Dale Rothman, GEO4, United Nations Environment Program
Katindi Sivi, Institute of Economic Affairs, Nairobi, Kenya

A physical experience: feeling & doing

Another type of learning identified on the infed.org website is one called "neurolinguistic programming" – learning as a whole mind-body system.[21] These ideas resonate with two other scholars, Eugene Gendlin and Walter Ong. Eugene Gendlin talks about the knowledge we hold in our bodies, the 'felt sense' of something that is particularly intricate and hard to understand.[22] Walter Ong, in his book comparing oral and literate societies, describes the knowledge of oral societies as

---

[21] Tosey, Paul and Mathison, Jane (2008) 'Neuro-Linguistic Programming, learning and education. An introduction', *the encyclopaedia of informal education.* [www.infed.org/biblio/nlp.htm]

[22] Eugene Gendlin's philosophical ideas have resonated strongly with psychotherapists. See his book *Focusing: how to open up your deeper feelings and intuition.* See also Eugene T Gendlin, *Thinking Beyond Patterns: body, language and situations.* Reprinted from *The Presence of Feeling in Thought,* Eds. B. den Oude and M. Moen, New York, Peter Lange, 1991. The Focusing Institute website is also very helpful: http://www.focusing.org/philo.html

situational and always relating to a context in which facts are recalled because they are useful and grounded in a concrete reality. Ong quotes a researcher asking an illiterate to explain what a tree is. *"Why should I?"* is the response. *"everyone knows what a tree is, they don't need me telling them."* (page 53) Elsewhere Ong writes,

> Asked what he thought of a new village school principal a Central African responded to Carrington (1974, p. 61) 'Let's watch a little how he dances.' Oral folk assess intelligence not as extrapolated from contrived textbook quizzes, but as situated in operational contexts.[23]

Emotions are another aspect of the physicality of learning, something Steve Rosell has recognised during the Viewpoint Learning dialogues.

> We talk a lot with our groups about hidden assumptions. One of the clues we give them is to say "You may find yourself in a conversation and find you are getting upset but don't know why you are getting upset. You should use that as information. Don't get angry, get interested." That is very powerful. Emotions are a very powerful part of dialogue. ... it is not all cognitive learning.

This observation – that learning is not something limited to our minds, but is also a physical experience – is often neglected. It picks up Arie de Geus's idea that we learn by 'doing' and reminds us that talking is not enough. Many of the learning processes used by scenario practitioners include sending people out to walk in unfamiliar places and speak directly with unfamiliar people in unfamiliar settings. That exercise alone makes learning a physical experience. More broadly, Steve Waddell's book, ***Societal Learning and Change[24]***, offers broad principles for how societies learn. His conclusions, however, are based on six case studies, all of which involve different groups joining together to solve a common problem. His book exemplifies learning as a physical experience, demonstrating that learning through 'doing' can be extremely powerful.

Slow time

"Doing" is closely allied to the "cheap talk" mentioned earlier as an idea provided by Elinor Ostrom. "Cheap talk" relies on slow time as people talk together over long periods of time in order to address shared, but difficult, issues. One of her most vivid examples is an agreement about the use of the water basin in the Los Angeles valley in California[25].

The importance of slow time was also seen during the ten years of the East African scenarios work. Like Elinor Ostrom's examples these processes organised by the Society for International Development provided a venue for cheap talk and learning. The continuity of people organising the work, the meeting up again with friends, the return to difficult questions that would be explored in a new way, all reinforced a sense of shared association and engagement.

Don Michael describes the need for slow time in helping societies to learn:

> Making sense of a world where much that gives it meaning is non-quantitative, occurs within **individual** human minds. And if we hope to maintain a democratic **civil** society, answers to important questions must go through many human minds. Obviously, those minds vary in their absorptive and interpretive abilities and capabilities, and their commitment. And all this takes far more time to do well than we currently acknowledge. (p.20)

The best example of slow time came during an interview with Markus Amann at the International Institute of Applied Systems Analysis. Markus Amann has been using computer models of air pollution in Europe to assist in negotiating European agreements on air pollution limits. This work

---

[23] Ong, Walter. ***Orality and Literacy: the technologizing of the word***. Routledge, London and New York, 1982, pages 53 and 55.
[24] Waddell, Steve. Societal Learning and Change: how governments, business and civil society are creating solutions to complex multi-stakeholder problems. Greenleaf Publishers, Sheffield, 2005.
[25] Elinor Ostrom, *Governing the Commons: the evolution of institutions for collective action*, Cambridge University Press, 1990, reprinted 1996.

began in 1988 and continues to this day. I had asked him about the compatibility of time scales, as models take a long time to build and negotiation can be slow, but politics and ecosystem limits may function to very different time scales. "How do you manage that?" I asked.

> *Ooof! That is a continuous challenge! I would say that in a way. The RAINS model was first used before the 1999 sulphur emissions protocol. We calculated differentiated requirements for the parties. That was a big step [and] … the gains from such a differentiated approach were so big that there was a willingness from the negotiating side to stay with us.*

Markus Amann participated in the negotiations and noted that the continuity of people involved has reinforced the importance of learning as a social activity conducted over time.

> *The continuity of people and thinking has been very important. People change, but long-term institutional and personal involvement of key players has been there. People stay for five years. That has been very important. When we did scenarios for the EU Commission, we looked at the Clean Air For Europe programme, CAFÉ. It was also a five year process with stakeholder involvement. We were all together on models. 700 meetings with national experts took place in a participatory way to come up with advice.[26]*

Commitment, continuity and time are three factors in how societies learn that have perhaps been under-estimated. The importance of time and long term engagement is something that Steve Rosell has yet to find a way to support. *"Often people in our groups want to continue, but we don't have a way to hand off responsibility."*

Power

Finally, reading Paulo Freire and John Holt raises an important fact about learning as we know it. In most languages, the word learning does not exist as separate from the word 'to teach'. In English, the difference is profound, making the simple verb, 'to learn' both radical and revolutionary. To teach is to foster obedience and conformity; to learn is to foster curiosity and self-determination.

One possible explanation for the rise and fall of the literature of learning is that whenever 'learning' gains support and traction, it threatens those in power. This was illustrated in a story Freire told about spending a week visiting people in Argentina, witnessing what he describes as a *"cultural revolution being mounted by a government that was powerless in so many respects."* He writes about the *'innovative élan'* he was witnessing, the intensity of experiment and discussion and the resulting tensions. This was a new group of leaders stimulating active social learning, as good leaders can. However, Paulo Freire was worried about the reaction from those previously in power. He warned his colleagues of the dangers, noting, *"It did not seem to me that the fine-tuned sensitivity and knowledge of a good political analyst was needed to sniff the coup in the air …"* Nevertheless, his colleagues were surprised when it finally occurred.[27]

Learning, in short, is revolutionary and raises a serious question about the relationship of learning to power. How can societies learn without threatening those in power?

The work that Markus Amann is doing in IIASA with the European Union, is an elite exercise. When asked how his worked helped the rest of society learn, he suggested that resulting legislation encouraged learning in wider society, but admitted it was hard to see a connection with popular behaviour change. The work being done by Steve Rosell and Lucy Neal is much more popular, working at the community level, but may not connect to those in power. In East Africa, Arthur Muliro and his team will be using the current East African regional scenarios to work with policymakers, but the outcome is yet to be seen. In fact, there seems to be a serious and troubling disconnect between power and learning.

---

[26] Interview with Markus Amann, International Institute for Applied Systems Analysis, 26 June 2008.

[27] Freire, Paulo. *Pedagogy of Hope.* Continuum, London and New York. 2004, p. 68-71.

Here again, Steve Rosell summed up the situation with succinct wit: *"My favourite definition of power comes from Karl Deutsch, 'Power is the capacity not to have to learn.'"* Steve Rosell also quoted a CEO he had worked with who told him that *"having the answer is a learning disability"*. As Steve Rosell noted, *"what you get rewarded with in most power situations is having the answers. … the tension is built in."*

There are, in effect, two independent phenomena: a process of popular learning bubbling away in society, and a process of occasional learning and 'answer-grabbing' (to use John Holt's phrase) by those in power. How can these two separate activities be brought together? Steve Rosell concluded:

> *If you talk about frontier challenges in this work, that is one of them. I guess there are ways to do that but that is something we have to explore.*

Occasionally, leadership and popular learning coincide, as the Cape Town discussion suggested. The supreme example of that would be the role that Nelson Mandela, Archbishop Tutu and a number of others played in South Africa's transition. These examples, however, may be the exception rather than the rule. As Don Michael put it:

> *Can [citizen and business groups] learn how to persuade the media and politicians to support long-range social planning via learning, and to cease sabotaging learning in furtherance of their own pursuit of profits, organizational dominance, ego aggrandizement, market share, and reelection? It won't be easy! (p. 31)*

> **Summary: how do societies learn?**

From selected literature and interviews, six strong themes on how societies learn can be identified.

- Anxiety, fear and violence
- Dialogue
- Association & community
- Physical experience – feeling & doing
- Slow time
- Power

The role of anxiety, fear and violence in inhibiting learning is crucial and immediately puts a premium on ways to reduce these conditions in order for learning to take place. Dialogue with people who are different, in conditions of mutual respect and honest engagement is one important way to do that. Such dialogues of themselves start to form new communities and highlight the fact that learning is, very often, a social activity built on trust. It takes place in the context of others with whom people can test their own beliefs and share activities and new language. Learning is also a physical and emotional experience. Feelings are a part of learning, as is 'doing' something, trying things out. Above all, learning takes time. Time is needed to alter existing frameworks, to establish communities of safety and trust and to see the connections between complex phenomena. Finally, there are serious outstanding issues about how learning and power should, but usually do not, work together.

How Have Scenarios Contributed to Learning in Society?

The role of futures work in how societies learn is less obvious. According to Steve Rosell of Viewpoint Learning, scenarios help to challenge existing assumptions.

> *I find when we need to challenge assumptions, we say "the world is changing or about to change, what might we do to deal with the change?" … you need to make it a fantasy world that people can play with it. "Let's just pretend that this actually happens." And then you can play with the possibility. You need to avoid triggering their defence mechanisms.*

Arthur Muliro believes that in Kenya and elsewhere in East Africa talking about the future created a discontinuity, bringing people to attention:

> *It was useful because it was different. It added a new dimension and created a discontinuity in the way people looked at the world. When we went to the Dream Team in Kenya [new technocrats in Moi's government] and presented to them the Maendaleo [economic growth] scenario, they said, 'hang on, are you saying this is not going to work?' If we had not gone into the future, they would not have learned that, but just been comfortable with their own policies. Their bubble was burst.*

Aidan Eyakuze, speaking of scenario work in Nigeria, thought that by thinking about the future, his team created a safe place which was critical to managing issues of fear and anxiety.

> *I also think that the future provides a safe space to explore decisions. In Nigeria, I noticed that the past is always dangerous and revenge can always be justified. But the future removes the sting. It can be open to ideas and helps people be open to different circumstances. It is a critical component. A lot of the time in Nigeria there was a lot of argument about the past. But when we started talking about the future it led to more openness. The conversation was more energised and energetic.*

For Markus Amann, the scenarios created by his models were a playful tool during the negotiations. I had quoted Arie de Geus on the three ways of learning and commented that *"Your models seem to have given people a tool for playing."*

> *Ja, ja, I completely agree. During a negotiation process we use literally hundreds of scenarios, but may only have 10 different variables. It is what we call playing around with what it would mean for country A and sector B.*

All of these points reinforce two of Arie de Geus's memorable trilogy: we learn by playing and through dialogue. What then, of Arie's third activity: learning by doing? Scenario work seems to be conspicuously absent here.

Lucy Neal is an activist. She learns – and helps others to learn – by doing. At LIFT, London International Festival of Theatre, she and her co-director, Rose Fenton, encouraged the creation of theatre as a learning experience, particularly in the LIFT education programme. Lucy also has a keen sense of how stories and projections of the future have created fear and anxiety which have inhibited learning. Instead, as she argued from her experience of the Transition Towns movement, an active, celebratory sense of shared purpose and community was key to how societies learn.

> *The transition thing jumps people over a track from projections to solutions. It only happens at community level because it is local and specific. The projections on climate change are ghastly so why would anyone want to look at them, do anything about them at all? So it is getting people to connect with a pathway that is wholly positive …*

> *… the thing is you very quickly get very existential about this because people feel so very alone. It can feel so hopeless and that is very uncomfortable for people … They are beginning to realise that they are sort of going mad because they compute all this at personal level, but need to connect at shared communal and ceremonial level. Then people understand. … The transition thing attends to the psychology of change.*

> *I think it is celebratory, it is fun and boy you really learn!*

This sense of the communal and celebratory came not from dialogue, but from experimenting with new ways of meeting the challenges of peak oil and climate change.

The role of futures work, therefore, has largely been a playful one, creating a sense of safety and possibility. It has been a toy for learning, what psychologists call a 'transitional object'. But if futures work encourages fearfulness, learning will not take place. It is no accident, therefore, that much of the futures work in the public interest is also intimately woven into processes of dialogue and communal learning, often in unusual spaces that physically remove people from their ordinary

lives and continue over relatively long periods of time. Where futures work in the public domain may be failing, is in the lack of any serious link to 'doing', to creating experiments based on what was learned and shared.

The last word goes to Don Michael, as seen through the eyes of his old friend, Donella Meadows, the author of the *Limits to Growth*. When Don Michael died in 2000, she described him as a quiet giant and wrote about his commitment to learning. In her obituary of Don Michael, she paraphrased his main conclusions as follows:

> *Real learning, he said, requires three things: admission of uncertainty, error-embracing, and deep self-understanding. … That's learning. Admitting uncertainty. Trying things. Making mistakes, ideally the small ones that come from failed experiments, rather than the huge ones that come from pretending you know what you're doing. Learning means staying open to experiments that might not work – which Michael called error embracing. "It means seeking and using – and sharing – information about what went wrong with what you hoped would go right."[28]*

Scenarios help people to admit uncertainty and the best scenario work also develops deeper understanding of one's self and one's society. However, the future of futures may be to push into experimental spaces where we are willing to share information "about what went wrong with what [we] hoped would go right."

---

[28] Meadows, Donella. "A Message to New Leaders from a Fallen Giant" in **The Global Citizen,** November 9, 2000, available at http://www.pcdf.org/meadows/don_michael.html . Donella Meadows and Don Michael had worked together in the early 1970s on the first Club of Rome publication of *The Limits to Growth.*

Suggestions for Future Research

This paper has only been able to scratch the surface of how societies learn and the role of public interest scenario work in that process. It has raised a number of important areas of future research, a few of which are briefly described here.

Detailed census of scenario activities

The census of public interest scenario work did not include a detailed description of what was done, by whom, over what period of time, with what result. There was no discussion of how these processes were financed or how the scenarios were used to facilitate wider public learning. A more detailed survey could prove extremely valuable to future practitioners hoping to start public interest scenario work in their own fields or regions.

The role of cultural beliefs

Another outstanding area to consider for future research is the role of culture. In his comments on an earlier draft of this paper, Louis van der Merwe argued that different societies will have different conceptions about the future, may even not describe time as past, present and future. How do cultural beliefs about time shape a society's style of learning and ability to make good use of futures work?

Power, elites and governments

Several people quoted in this paper described governments as resistant to learning. How true is that? What examples exist of government bureaucracies or politicians who have been able to learn? How many of them were able to connect their own learning to learning about the population at large? Are we seeing a vacuum of leadership? Or are leaders learning to learn? What are the facts?

Bibliography

The following books and papers have been mentioned in this paper.

Baron, S., Field, J., and Schuller, T., *Social Capital: critical perspectives*. Oxford University Press, 2000.

Brew, J. Macalister. *Informal Education: adventures and reflections*. Faber and Faber, London, 1946.

Chrislip, David D. and Carl E. Larson. *Collaborative Leadership: how citizens and leaders can make a difference*. Jossey-Bass, San Francisco, 1994.

De Geus, Arie. *The Living Company: growth, learning and longevity in business*. Nicholas Brealey Publishing, London, 1999.

Elinor Ostrom, *Governing the Commons: the evolution of institutions for collective action*, Cambridge University Press, 1990, reprinted 1996.

Esterhuyse, W.P. *Social Capital: part of the wealth of nations*. Strategy Insight. Institute for Futures Studies, Steenbosch, 2000.

Freire, Paulo. *Pedagogy of Hope: reliving pedagogy of the oppressed*. Continuum, London and New York, 2004. *Pedagogy of the Oppressed,* originally published in 1972 is one of the most quoted books in education Latin America.

Gendlin, Eugene T. *Focusing: how to open up your deeper feelings and intuition*. Bantam Books, 1981.

Gendlin, Eugene T. *Thinking Beyond Patterns: body, language and situations*. Reprinted from *The Presence of Feeling in Thought,* Eds. B den Ouden and M. Moen, New York, Peter Lange, 1991.

Heinzen, Barbara, Alister Wilson, Campbell Gemmell. *Pioneers of Persuasion: a review of the use of scenarios in the public sector*. Unpublished report for Scottish Enterprise.

Heinzen, Barbara. *Feeling for Stones: learning & invention when facing the unknown*. 2004. Available on www.barbaraheinzen.com

Heinzen, Barbara. "Political Experiments of the 1990s" in *Deeper News*. Global Business Network, September, 1994.

Heinzen, Barbara. "Social Foundations of Economic Development", unpublished paper written in 1984, available at www.barbaraheinzen.com.

Heinzen, Barbara. guest editor, *Development: surviving uncertainty,* Volume 47, Number 4, December 2004, Society for International Development, Rome, Italy.

Holt, John. *How Children Fail*. Penguin, London & New York, 1964, 1982 revised.

Holt, John. *How Children Learn*. Penguin, London 7 New York, 1967, 1983, revised.

Ilbury, Chantell & Clem Sunter. *The Mind of a Fox: Scenario planning in action*. Human & Rousseau Tafelberg, Cape Town, 2001.

Illich, Ivan. *Deschooling Society*. Marion Boyars, London, 1946.

Kahane, Adam, "Learning from Mont Fleur: Scenarios as a tool for discovering common ground", *Deeper News 7 (1),* Global Business Network, 1993.

Kahane, Adam. *Solving Tough Problems: an open way of talking, listening, and creating new realities*. Berrett-Koehler Publishers, San Francisco, 2004.

Meadows, Donella, et al. *Limits to Growth*. Universe Books, 1972.

Meadows, Donella. "A Message to New Leaders from a Fallen Giant" in *The Global Citizen,* November 9, 2000. available at http://www.pcdf.org/meadows/don_michael.html

Michael, Donald N. *Learning to Plan and Planning to Learn*, second edition. Miles River Press, 1997 (first published 1973).

Milburn, Michael A. and Sheree D. Conrad. *The Politics of Denial*. The MIT Press, Cambridge, Mass., 1996.

Ong, Walter. *Orality and Literacy: the technologizing of the word*. Routledge, London and New York, 1982.

Parson, Edward A. et al. *Global Change Scenarios: their development and use,* Report by U.S. Climate Change Science Program and the Subcommittee on Climate Change Research. 2007. (available at http://www.climatescience.gov/Library/sap/sap2-1/finalreport/sap2-1b-final-all.pdf

Peterson, Garry D, Graeme S. Cumming, Stephen R. Carpenter, "Scenario Planning: a Tool for Conservation in an Uncertain World" in *Conservation Biology, Vol. 17, No. 2, April 2003, 358-366.*

Putnam, Robert with Robert Leondardi and Rafaella Y. Nanetti. *Making Democracy Work: civic traditions in modern Italy*. Princeton University Press, Princeton, N.J. 1993.

Putnam, Robert. *Bowling Alone: the collapse and revival of American community*. Simon and Schuster, New York, 2000.

Schön, Donald A. *Beyond the Stable State: public and private learning in a changing society*. Temple Smith, London, 1971.

Segal, Nick. *Breaking the Mould: the role of scenarios in shaping South Africa's Future,* Sun Press, Stellenbosch, South Africa, 2008.

Senge, Peter M. *The Fifth Discipline: the art & practice of the learning organisation*. Doubleday Currency, New York & London, 1990.

Smith, Mark K, Michele Erina Doyle, Tony Jeffs, editors of **www.infed.org**. (Infed stands for INFormal EDucation)

Tosey, Paul and Mathison, Jane (2008) 'Neuro-Linguistic Programming, learning and education. An introduction', in *The encyclopaedia of informal education*. [www.infed.org/biblio/nlp.htm]

Van der Heijden, Kees and Ron Bradfield, George Burt, George Cairns, George Wright. *The Sixth Sense: accelerating organisational learning with scenarios*. John Wiley & Sons, Chicester, 2002.

Waddell, Steve. *Societal Learning and Change: how governments, business and civil society are creating solutions to complex multi-stakeholder problems*. Greenleaf Publishers, Sheffield, 2005.

Websites

INFED.ORG, LONDON http://www.infed.org/encyclopaedia.htm

FOCUSING INSTITUTE, NEW YORK http://www.focusing.org/philo.html

VIEWPOINT LEARNING, CALIFORNIA: http://www.viewpointlearning.com

TRANSITION TOWNS, UK: http://www.transitiontowns.org/