



## Extending foresight: The case for and nature of Foresight 2.0

Ruben Nelson\*

*Foresight Canada, 29 des Arcs Road, Alberta, T1W 2W3, Canada*

### ARTICLE INFO

#### Article history:

Available online 2 February 2010

### ABSTRACT

This a programmatic paper with all of the frustrations thereof [1]. We point beyond the well-tilled ground of foresight as commonly practiced (called *Foresight 1.0*) to an emerging understanding of the work and character of foresight (called *Foresight 2.0*). By definition, as of today, this new territory is not well mapped, much less carefully worked-over. The question that drives this commitment to Foresight 2.0 was the heart of the 2007 Strathclyde Organizational Foresight Conference—*Learning the Future Faster: “Can foresight as commonly practiced enable us to learn the future fast enough to meet and deal with the unique strategic challenges of the 21st Century?”* The view taken is that Foresight 1.0 cannot meet this challenge; that it leads to small victories and major disasters. An explanation is offered: Foresight 1.0 was developed, and is still largely practiced, with the eyes and mind of management, whereas sustained success in the unique conditions of the 21st Century requires Foresight 2.0—seeing, thinking and acting with the eyes and mind of Leadership. This distinction is explained. Evidence is offered that futures research and foresight are slowly moving towards this new practice. The hope is expressed that, if we grasp the need for it, the nature of it and have explicit mental maps of the journey to it, we who are professional foresight researchers and practitioners will move faster and more effectively to develop Foresight 2.0. Several steps towards this end are outlined.

© 2009 Elsevier Ltd. All rights reserved.

### 1. Introduction

We in Foresight Canada [2] have come to hold views about foresight and the human situation in the 21st Century that, to the extent they are sound, have profound implications for the practice of foresight and futures research. Accordingly, we offer our thinking here to the wider foresight community for debate, critique, use and revision.

In essence, we have come to the view that, as commonly practiced, foresight will not enable us to learn the future fast enough to cope with the emerging strategic conditions of the 21st Century—conditions that require us for the first time in history to develop the capacity to engage consciously in the evolution of existing human cultures, including their most fundamental frames of reference. However, there are signs that some who practice foresight (Foresight 1.0) are struggling to evolve it into a form (Foresight 2.0) that will enable us to learn faster. This evolution will be easier and faster if we who are foresight researchers and practitioners explicitly understand what Foresight 2.0 is, why it is necessary, why now, and what is driving its development.

Our reasoning is set out in this Introduction in order to allow you to understand the thinking that lies behind our call for the explicit development of Foresight 2.0. Although the following statements can be defended, we recognize that we have not done so here.

\* Tel.: +1 403 673 3537; fax: +1 403 673 2114.

E-mail address: [rubennelson@shaw.ca](mailto:rubennelson@shaw.ca).

- *Overriding obligation*: The human obligation that overrides *all* others is the obligation to ensure the continuation of the human adventure in ways that allow future generations to live lives that are reasonably prosperous, graceful and deeply humane. As game theory teaches, it is most important not to lose.
- Rule 1: *Context is king*. The requirements for survival of any living system are set by the evolving context in which the system finds itself. Put simply, the context will continue with or without the living system, regardless of the scale. If the garden dies, the carrots go with it; when our sun dies, the Earth will go with it.
- Observation 1: *On this planet, the context is always changing*—slowly or rapidly, superficially or profoundly.
- Observation 2: *Adaptation is required*. To sustain itself, a living system's adaptive capacity must exceed the requirements set by the contextual changes it faces [3]. This is the adaptive analogue of Ashby's Law of Requisite Variety.
- Observation 3: *The adaptive capacity of human cultures is critical*. Disintegration and death are the inevitable results for any culture or organization that faces emergent challenges that are beyond its adaptive capacity [4]. At root, the question is always, "Can human cultures develop the capacity to see, make sense of and consciously adapt to the unique evolving conditions of their time?" If "Yes," then their journey continues. If "No," then for them, the adventure ends. In a globalizing world, this possibility is now expanding to include everyone.
- Observation 4: Unconscious adaptation of whole cultures to fundamentally new conditions is possible, but rare, e.g. the evolution of the capacity to survive in the far North. To date, all such transformations have taken place unconsciously, locally and over several centuries, if not millennia. To date, there are no examples of truly fundamental cultural evolutions that are conscious, global and relatively rapid.
- Observation 5: *Conscious adaptation of whole cultures to fundamentally new realities, as yet, is unknown*. To date, no society has been able to adapt to changes in its context that are profound enough to require it to consciously change its most fundamental understandings of the earth and the human place in it, including its foundational frames of reference. None has consciously learned to see, think and act in ways that lay beyond its inherited culture [5]. The scoreboard reads something like: Earth 22, Humans 0.
- Observation 6: *Democracies face a particular dilemma*. They seldom notice fundamentally new contextual conditions in time to act in ways that make a positive prophylactic difference to the whole society [6]. The following syllogism captures the logic. It is valid. Therefore, the conclusion is true, if the premises are true.

Democracies require or at least give overwhelming priority to consensus views. Consensus views routinely miss profound changes (system-breaks). Democracies routinely miss profound changes (system-breaks).

- Observation 7: *The human future is at stake*. As a complex adaptive system, the planet is fine. It does not need saving. Its long-term future is green, given that this Earth has at least another billion years of life. The sharp-edged challenge for the next two centuries is not the survival of life on Earth, but of our species.
- Observation 8: *The ultimate purpose of foresight*. Given the unique character of the emerging conditions of the 21st Century, the deepest intention that must drive the practice of foresight is *to increase the adaptive capacity of human persons, groups, societies and whole cultures, i.e. to learn to notice, explore and grasp the nature of the strategic changes in their context with enough breadth and depth to enable conscious adaptation to such changes, while there is time to act effectively*. This does not mean that the purposes for which foresight is pursued today are wrong; only that they must be held within and give way to the ultimate task of increasing our adaptive capacity, and this for the sake of ensuring the continuation of the human adventure.
- Observation 9: In order to meet the above requirement, we must develop deep and integrated understandings – *scientia* – of the content, drivers and dynamics of the long evolution and transformation of human consciousness and cultures [7]. This new science will provide the foundations Foresight 2.0 requires.

The above line of reasoning leads us to affirm the need to learn the future faster.

## 2. The challenge of learning the future faster

"*Learning the future faster is now a requirement.*" What is being said by this increasingly common assertion? We suggest that by its use, virtually all speakers point to the now orthodox view that we must learn faster than our competitors [8]. The background assumption is that the globalization of consumer capitalism is generally a good thing; that in any case it cannot be stopped; that one either wins in this race or is run over; and that *learning faster* is a mark of winners. Clearly, if these views are true, then best we practice foresight in order to be among the early learners.

But what if, as our own research and that of the International Futures Forum suggests, the root challenge of the 21st Century is not learning faster than our competitors, but fast enough to cope with the truly unique conditions of both the Earth and our societies [9,10]? What if ours is one of the rare times in history in which sustained success for human cultures requires conscious adaptation of whole cultures to emerging conditions that are profound and different enough to entail the conscious evolution of our most fundamental cultural frames of reference? What unfamiliar challenges would this present?

Change appears to be so simple, but there is more to *learning the future faster* than meets the eye. If we take 10 min to change our clothes when we have 12, all is well. If switching to a new software system takes 6 months and we have eight, all is well. But wait; caution is advised. If it takes 5 years to strengthen the levees of New Orleans and a category five storm is

now on its way, New Orleans as we have known it will be our past, but not our future. If it takes decades and even centuries to form and change our deepest views of the world and humans within it, and we must formulate an almost immediate response to the events such as occurred on 9/11, our *mis-taken* responses may destabilize the world.

Our view is that even if the risk is judged to be small, the challenge posed by the possibility of the emergence of conditions that are off our inherited mental maps is so great that this possibility is worth exploring. We do so by asking three questions.

Question 1: “Can foresight as now commonly practiced – Foresight 1.0 – enable us to notice, explore, understand and cope with the fact or need for truly profound and long-term cultural change?” Our answer is, “Apparently not.” As far as we can see, the vast majority of foresight practitioners – whether in governments, corporations, academia or think tanks – have unconsciously agreed to assume that for operational purposes ours is not a time of truly profound cultural change to which we must pay active attention. The issue of the evolution and transformation of our whole culture, including of the most fundamental frames of reference by which our culture lives appears not to be on our foresight agendas. At least this much is true; our searches have not been able to identify even one significant foresight institution that includes in its mandate the attempt to notice, explore and understand the fact and implications of the evolution and transformation of the fundamental frames of reference of human cultures, including their own [11]. In short, the insight that, in order to survive the 21st Century, we must consciously learn to accept responsibility for the conscious evolution of our whole culture, including its frames of reference, is not now under serious and sustained discussion by most of those who teach and practice foresight. Ironically, the evidence is growing that our implicit confidence that the issue of long-term cultural frame-change can be safely ignored is ill-founded and wrong-headed [12,13].

Of course we know of individuals, groups and networks of persons who include the issue of long-term cultural evolution in their foresight practice; we are among them. However, as things now stand, it is unlikely that a scattered few can deflect the course of the institutionalized many soon enough to avoid disaster. Put simply, if it is time to grow into the work of consciously influencing the evolution of existing human cultures, then we must evolve our foresight practice.

Our situation, of course, is not a problem as long as it really is the case that ours is not a time when a profound transformation of our cultural assumptions is either needed or occurring. This is the unconscious bet every culture is making. Is it a safe bet?

Question 2: “Just how different will the 21st Century be?” “Will the changes, now occurring and anticipated, be within or beyond the most fundamental frames of reference of existing cultures?” “Will it be a time that requires profound cultural evolution and transformation?” As with the first question, the operational response of existing cultures is to assume a benign answer to this second question. While the language of transformation is now routinely heard in many settings that are within or influenced by Western consumer culture, the use of transformational language rarely implies a challenge to the primacy and continuity of an increasingly global consumer culture. Rather, the operational assumption is that modernity is forever—the end of history [14]. As Prime Minister Thatcher proclaimed, “There is no alternative.” It follows that a society with these assumptions would not invest in the capacity to notice, explore and understand the evolution of its own underlying unconscious assumptions. As noted, this is the condition we have found. Also, as noted, to the extent that ours is a time of truly profound cultural change, evolution and transformation then all human cultures are well beyond, “Houston, we have a problem.” We are truly in over our heads [15]. We in Foresight Canada have come to the view that this is in fact the case. As human cultures we are in far more trouble than we know.

Question 3: “If ours is a time that requires the fundamental evolution and transformation of human cultures, can foresight as now practiced – Foresight 1.0 – evolve into the foresight we need—Foresight 2.0 with a developed capacity to notice, explore, make sense of and offer reliable advice regarding changes so profound that the conscious evolution of human culture is required?” “And, if so, what would such a capacity be and look like?” Happily, there are signs that such a capacity is possible and that it is struggling to life. We point to the following as some of the evidence of the evolution we require:

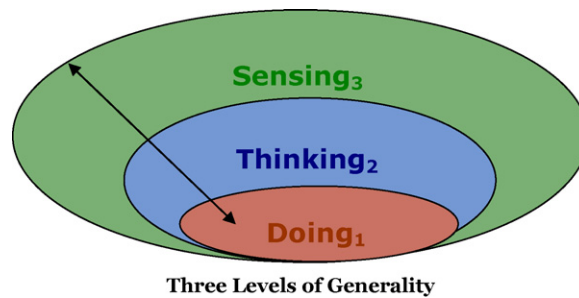
- The development of Causal Layered Analysis by Inayatullah [16]. This new methodology probes under the surface to the deeper reaches of human consciousness and culture. It maps the multi-levelled understanding of human culture and consciousness that is central to Foresight Canada and has been at the heart of my own work for four decades. [6,7,9,13,28,29]
- The insight developed by COST Action 22, that a reflexive capacity must be at the heart of futures and foresight [17].
- The work of Slaughter [18] both as a writer and as an educator.
- The emergence of Integral Theory from the work of Wilber [19], among others.

As we understand the situation, we who are foresight practitioners can become the midwives to this new understanding and practice of foresight – one that contributes to the conscious evolution of human consciousness and culture. As foresight professionals we can make a substantial contribution by developing Foresight 2.0 – the capacity to practice foresight at every level of human existence from operation to the fundamental frames of human consciousness and culture.

We have found a way to see and grasp this new work.

### 3. A model of human consciousness and culture

To begin, it is useful to distinguish among the levels of generality at which all cultures function and have cognitive, emotional and spiritual content. In saying this we are assuming that reality cannot be adequately grasped from a single



**Three Levels of Generality**

Fig. 1. Three levels of generality.

perspective; that multiple perspectives are required; and that understanding a complex condition not only requires multiple perspectives from a given level of generality, but also multiple perspectives from multiple levels of generality. Albert Einstein's [20] quip – “We cannot solve problems at the same level at which we created them” – reflects both these ideas. The fact that this comment is quoted so often today at thoughtful gatherings can be taken as an indication of the intuition that ours is a time in which we must shift our perspective among various levels of generality, if we are to see, think about and act towards the world in appropriate ways. Single-level seeing, thinking and acting will no longer do. Nuance is required.

The idea of levels of generality raises the question, “Just how many levels of generality are there in the physical and cognitive work of a culture and what ways of thinking about them are helpful?” We in Foresight Canada distinguish three main levels of generality. Elsewhere, we have set out the sub-levels within the main levels [7]. The more elaborate view of these things can be ignored for present purposes. Together, the three levels account for the first-order elements that must be taken in account—Doing, Thinking and Sensing (Fig. 1). The arrow represents the line of sight that is required among these levels in a reasonably coherent culture.

As we understand it, every culture will have cognitive content at all three of these levels. However, most of that content will be inaccessible to the vast majority of persons in the society because it will have been unconsciously absorbed, i.e. it is tacitly, rather than explicitly held. Note that we are dealing with each of the three levels of the model as first-order phenomena. We also note that Level One activity (doing) can only be undertaken at a first-order level; it has no meta-level. In contrast, activity at Level Two (thinking) and Level Three (sensing) can be undertaken at both first-order and meta-levels. However, the three main levels must first be understood as first-order activities.

*Doing* is work with material things—things that can be moved, photographed, skinned or bumped into. If one does not see a physical thing, one can literally fall over it. It is literally, “bloody obvious.” Work at this level occurs in the world. It consists of making a noticeable change in a physical condition—dirt is moved, a cheque is delivered, a record stored, a person fed.

While doing requires that we see and are able to think about that which we are doing, these cognitive processes need not be conscious efforts. A routine is a way of doing something in a repetitive manner that does not require conscious effort. Everyday life in every culture is full of routines; otherwise life would be exhausting.

Consider that in stable, long-lived cultures, socialization is primarily a matter of young persons learning to do things in essentially the same manner as their parents and grandparents did things. For example, children have no choice about their mother tongue. In such situations, little needs to be taught explicitly about thinking or seeing, as these skills will be picked up almost wholly unconsciously by socialization processes as physical skills are learned. In stable cultures, all doing is done in ways that are consistent with and do not challenge the unconsciously inherited and tacitly held patterns of consciousness, perception and thought of the culture. The up-side of this condition is that life in such settings is straightforward and without constant cosmic anxiety. The down-side is that truly new ways of doing things are rare and resisted, if not forbidden. The *new-innovation-is* limited to variations on known themes and understandings.

*Thinking* as a first-order activity entails *standing back* from doing and considering the business of acting in the world—doing physical work. Thinking entails a move from the body to the mind, since it is an activity that occurs entirely in the mind. Auguste Rodin's “The Thinker” embodies this perfectly. He is not *doing* anything. This means that thinking cannot be photographed. One cannot literally trip over a thought, goal, plan or strategy, only over the piles of paper on which these are written. A bad plan can, of course, *trip us up*. But this is a metaphoric, not a literal trip. The immediate results of thinking are never physical changes in the world, but only new ideas about apparently better ways to approach and undertake the making of physical changes in the world. The up-side of conscious thinking is that it increases the degrees of freedom we have about how to do physical things in the world – freedom that is not available to us when we act unconsciously – without conscious thought. By thinking, we can make conscious choices about how, in the future, we can go about doing the tasks at hand.

Note, however, that thinking alone does not allow us to escape our culture. First-order thinking will necessarily be unconsciously shaped by and captured within the logic and content of the metaphors that have formed the consciousness of the culture, and, therefore, our own. For example, in Western Industrial culture we may conceive new patterns of authority. However, they will all tend to reflect the un-stated assumption that authority is necessarily hierarchical; that *someone must be in charge*. To challenge this assumption is to break, at least in part, with Western Industrial culture.

The common urging to “*Think outside the box*,” reveals the stubborn nature of deeply embedded unconscious assumptions. While it encourages new patterns of thinking, it gives not so much as a glance at the fact that our new patterns

of thought almost certainly will reflect and reinforce the far more fundamental and unseen inherited patterns of consciousness of our culture. We need to ask and answer a new question, “How many boxes are we in?”

Sensing is an activity within our bodies, minds and consciousness—an activity by which we become aware of the presence or absence of something. In order to sense something the strength of the signal that it is there to be sensed must be enough to penetrate the consciousness of the person who is sensing. If this condition is not met, then the thing, while present, is simply not there for that person. This happens to us all. In such cases we say, “I simply did not see (or feel or hear) it.” The it we did not see can be at any of the three levels of generality—a physical thing, a thought or a pattern of consciousness. The answer to the question, “What have we missed?” is always, “Only what we did not see.”

This implies that two strategies are available should we want to sense more of what is actually present. First, we can amplify the signal of that which is present. Second, we can develop a more sensitive capacity to sense—a human consciousness that can pick up truly soft and subtle signals sooner. As we shall see, both of these strategies are crucial to the evolution of Foresight 2.0—a capacity that can routinely sense, explore, understand and respond to the long-term change, evolution and transformation of human consciousness and culture.

This three-level model sheds light on several relevant features of human societies, including our own situation in history.

- Sensing, thinking and doing are thoroughly interpenetrating, rather than separate, as is so widely assumed in Western Industrial culture. This means that in any given culture physical things are never just physical things; technologies are never *just a tool*. Rather, they are also laden with both thought and consciousness. As the women’s movement has shown us, opening a door for a lady is never just a stand-alone phenomenological fact. This action always reflects and reinforces some pattern of both thought and consciousness. It was door-opening as an expression of the unconscious assumption of male superiority that riled women. The elementary, but often overlooked fact of the interpenetration of action, thought and consciousness has been, for example, at the heart of much of the damage done by international development work. While our intentions have been to be helpful, we have literally not seen what we were doing, especially to the unconsciously held patterns of consciousness and culture that define tradition-shaped cultures. Consider that for six decades we in the West have made a promise to developing countries that it was safe for them to learn to use our tools and technologies; that because our tools were culture-neutral, they could also keep their consciousness and culture just as it has always been. Our model of culture suggests that we have been making a promise that is impossible to keep. Some of Osama bin Laden’s anger is rooted in the fact that he understands, or at least intuitively, how misleading this promise has been; that modernization is undercutting every tradition-bound culture on the planet. Further, he reads this experience as an example of our duplicity, not our ignorance. He simply cannot believe that we in the West have not known what we were doing. Sadly, he is wrong.
- In short, thinking is never just pure thinking. Rather, as Kant [21] taught us some 250 years ago, it is laden with patterns of consciousness. It follows that the widespread sense in Industrial cultures that “*technology is just a tool*” or “*thought and action are wholly separate*” is understandable, given the presuppositions of Western Industrial culture, but they are also simply and importantly wrong as empirical propositions.
- Every culture has distinctive patterns of consciousness that are by-and-large unconsciously shaped and inherited. There would be no culture shock if this were not the case. The deepest shock when one is outside of one’s own culture is not in the way they do streets and curb heights or in the fact that monkeys may be in the streets, but in the profound sense that they do the human project differently; their sensing, thinking and doing are in the service of a sense of reality and ways of living that are not wholly commensurate with one’s own.
- Further, a coherent culture is one in which the critical messages at each of the three levels – sensing, thinking and doing – are aligned and logically consistent. There is a single line of sight from the consciousness that defines the culture, to the ways the world is thought about, to those actions that are routinely done in the culture. This is why, when we are in cultures not our own, our reading of the situation, the conclusions we draw and our actions are so often wide of the mark; sometimes humorously, sometimes painfully. It follows that a culture will be eroded and destabilized should concepts, logics, ideas, technologies or ways of doing be introduced to the culture. Insensitivity to this fact still bedevils us. It can be seen in the ineffectiveness of so many of our public policies, including those directed to spreading democracy, overcoming poverty, ensuring public security and even practicing public foresight.
- While our consciousness may appear to be ours alone, it is in reality a community and cultural artefact. The foundational consciousness of any one of us is always inherited from our elders. We are shaped and certified by the culture within which we are formed. It follows that those who develop patterns of consciousness that in important ways are in conflict with the wider culture soon find themselves being marginalized by the culture. Given globalization and the flood of information that invades every culture, the tensions inherent in this struggle are now a universal experience. Such tensions are now known within every culture that has been defined by its traditions, every jurisdiction that still defines itself by inherited ethnicity, and even every multicultural culture. In a globalizing world there is no place to hide. We know there are clashes of cultures; we do not yet know how to sense them, think them through and act on what we are learning.
- Marxists and most Chambers of Commerce claim that physical reality is primary, while thought and consciousness are epiphenomena. To the contrary, sensing is primary; thinking is secondary and physical action is tertiary. Consider that we can only act with any degree of rationality and coherence towards that which we can think about. Further, we can only

think about that which we can sense, either literally or metaphorically. This is why metaphors are so powerful – they enable us to see beyond the obvious – physical things. It is no accident that every well-developed spiritual and intellectual tradition, as well as every cult, has some version of this image at its heart: “*Once I was blind, now I can see.*” It follows that while it can be a powerful experience to *think outside the box*, it is ever so much more powerful to come to *see the world with new eyes*. The fact that even today most efforts to do new and transforming things involve only thinking and acting suggests that as modern Industrial cultures we are still insensitive to the fact that changing our consciousness of the world is far more powerful than merely changing our thinking about the world, powerful as the latter is.

- The fact that a culture can be grasped at these three levels does not mean that the cognitive content of each level is explicitly grasped and worked with in routine ways by those who inhabit the culture. On the contrary, to this point on the human journey, the normal state of affairs for human beings has been to be conscious of only some of the ways we do things, and largely unconscious of the defining patterns of consciousness and thought that we have inherited from our culture.
- This is an acceptable state of affairs only as long as we live in stable times—times in which it is reasonable to assume that it is safe to continue to utilize our inherited patterns of consciousness and thought, since our future will be essentially similar to the past and present. Conversely, when and only when we face a future that will differ substantially from our past must we be able to make the reflexive move of learning to see and think critically about our inherited and unconscious patterns of thought and perception. As noted above, we in Foresight Canada see and think ourselves to be in such a time.
- The experience of profound personal and societal change is the condition that may drive a people or an organization to awaken to the fact that their way of living presupposes previously unseen patterns of both thought and consciousness. This reflexive insight may lead them to wonder whether the patterns they have inherited still allow them to deal adequately with the emergent situation in which they now find themselves. This dynamic has been at the heart of every liberation movement of the 19th and 20th Centuries, be it freedom from slavery or prejudice based on skin colour, ethnicity, gender, age or physical or mental capacity.

Given the above, we are now in a position to use this three-level model of human cultures to shed light on the subject of this paper—the development of foresight to the point that it enables us to see profound changes in human consciousness, thought and culture and the implications of such change for good and ill fast enough that there is still time to make a positive difference. To sustain success, especially in a time of turbulence, we need to be able to see and explore emergent phenomena at every level, learn what it is that is emerging, think through its implications for us, articulate appropriate responses and then act before hidden opportunities are lost and unseen threats have become catastrophic.

#### 4. Applying the three-level model of cultures to foresight

##### 4.1. The pre-foresight period

Since foresight and futures research did not emerge as a conscious and explicit practice until the middle of the 20th Century, all of history prior to that point is pre-foresight as a formal discipline. For our purposes, then, the story can begin at the beginning of the 20th Century

In 1900, the focus in the Industrial West was almost entirely on *doing*. For the vast majority of persons, only the first level of obvious material things were explicitly seen and dealt with. See Fig. 2. Note that the content of the unlabelled spaces is absorbed unconsciously.

Then, we administered and operated organizations; we did not manage them. What today we call *Senior Executives* were then *Senior Administrators*. Further, administrators kept their eyes on operations. There was no management, as we know it today, with an explicit focus on goals, strategies and objectives. Then, even operational planning was in its infancy; long-

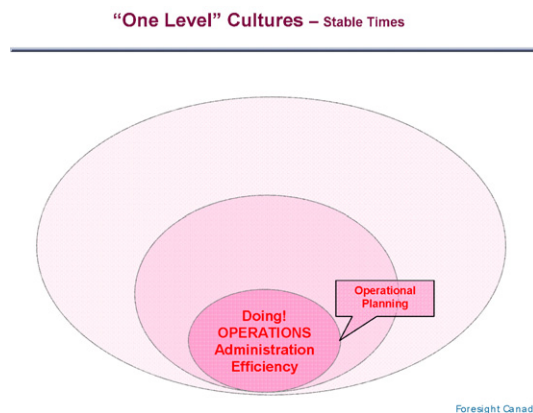


Fig. 2. The normal range of consciousness required in stable cultures.

range planning had not yet been invented. The questions asked were about finances, products and programs, not the questions of managers, but of administrators—which shall we keep, which expand, which drop? In spite of its name, Fredrick Taylor's *Scientific Management* [22] was about operations—the organization of operational work. The central focus was where it always is in stable times with operations and their efficiency—the cost-effective use of resources. In the first half of the 20th Century, planning was Operational Planning. The Planning Executive Institute, founded in 1915, was made up primarily of financial administrators. This focus on operational planning was the outer edge of an administrator's world. Organizations then were what we characterize as *Level One Organizations*—operations focussed on *doing*.

In the 1930s, a university degree for organizational operations was invented – the MBA – Master of Business Administration. Since management as we know it today had not yet been conceived as a separate perspective and practice, it could not have been an MBM. This early 20th Century conception of the work of organizations is still seen in the language associated with school boards and governments, e.g. a new government is often characterized as a new *Administration*. Note also that the Masters degree in public management reflects this same language. While invented in the 1960s, it was called an MPA—Master of Public Administration.

#### 4.2. The emergence of management

During WWII, two things happened. First, operations were systematized by the invention of Operations Research. Operations Research is thinking about doing in a systematic way. Its use can make huge differences at the operational level. Second, a new level of generality was re-discovered—that of strategy and the goals that strategy is intended to achieve. Both of these were teased out of the taken-for-granted tactical and operational perspective. Both these moves contributed to the development after the war of a new and distinct view of organizations—what we now call the *management perspective*. If the heart of operations is concern with doing, the heart of management is thinking about doing. A person with a mind of a manager explicitly sees, thinks about and deals with the first two of the three levels. This is captured in Fig. 3. Again, the content of the unlabelled space is absorbed unconsciously.

The central concern of this new view is not efficiency, but effectiveness—the achievement of consciously set goals and objectives by explicitly chosen strategies. It is no accident that the book widely seen as the first book on management is *The Practice of Management*, [23] in which Peter Drucker sets out his philosophy of *management by objectives*. During the 1960s this concern was formalized in such systems as *Management by Objectives; Planning, Performance, Budgeting Systems; and Operations, Performance Measuring Systems*.

Policy, a fancy word for the strategies that link goals and objectives, emerged as a distinct concern during this time. The first degrees in policy-making were invented in the early 1960s. The first policy advisors were hired by governments during this decade. By the 1970s and 1980s, most organizations were struggling to make the shift from *Level One Organizations* – operations and administration – to *Level Two Organizations* – organizations that nested operations within the wider concerns of management. By the 1980s, Strategic Planning had become common. It was then, and still is, the outer reach of those with the mind of a Manager.

In the early days of management, it was natural to raise good senior operators to the level of managers. Through the 1960s, 1970s and 1980s, many organizations learned the hard lesson that not all skilled operators were suited to the work required at this new level. Eventually it dawned that the mind, instincts and intuitions of a good operator and the mind, instincts and intuitions of a good manager are not at all the same. Rather, they are quite different. The career ladder that leads automatically from one to the other was recognized by some as a recipe for disaster. Nevertheless, this practice is still

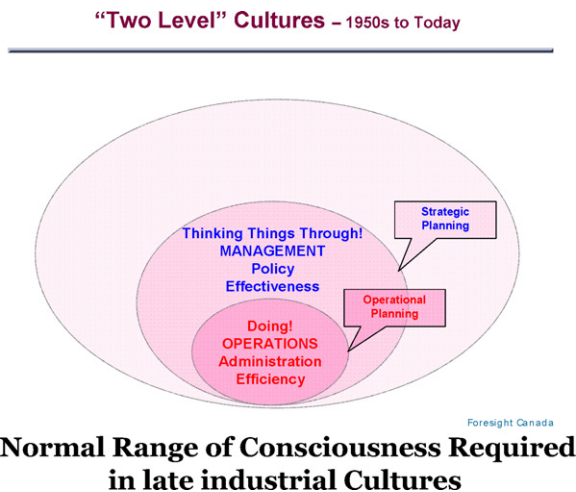


Fig. 3. Normal range of consciousness required in late industrial cultures.

## Contrasting Minds & Intuitions

<u>Administrative/ Operations</u>	<u>Management</u>
• Tangible things are “real”	• Goals, strategies (policies) and plans are “real”
• Responsible for “doing”	• Responsible for thinking about doing things and controlling those who do
• Doing is physical work	• Follow the plan; be innovative
• Can & must be in control	• Decide outcomes before you begin
• Measure space and time	• Measure progress by tangible indicators
• Decide outcomes before you begin	• Growth is good, make it happen
• No surprises	• Success is effectiveness
• Assess and control risks	
• Success is efficiency	

Foresight Canada

### Contrasting the Mind and Intuitions of Administrators and Managers

Fig. 4. Contrasting the mind and intuitions of administrators and managers.

widespread. Some, it seems, cannot learn the past, let alone the future. The contrast between the mind and intuitions of an Administrator/Operator and a Manager are set out in Fig. 4.

Today, strategic planning is understood to be both a requirement of good management and a practice that is quite separate from operations and operational planning. *Strategic Planning* routinely appears in the titles of Vice Presidents, Assistant Deputy Ministers and Directors. But this was not always so. In 1965, almost no one had heard of strategic planning, much less of the Boston Consulting Group that invented it. In the early days, strategic planning was routinely confused with and reduced to operational planning. However, over the last 40 years the practice and methods of strategic planning have slowly been refined and more clearly defined. Bit by bit, as a society, we got the notion that while operational planning is required, it is not enough; that something more is needed to ensure operations are sound and sustainable over long periods of time. Strategic Planning emerged as the “something” we required. Today, it has a secure place in the management universe, even of NGOs and church congregations. When the 20th Century closed, management had become a requirement. Just try to get a grant without it. Virtually all organizations in all sectors of Western societies now function as *Level Two Organizations*.

#### 4.3. The emergence of futures research and foresight

It is well known that futures research and foresight were invented in the 1950s and 1960s; and that it came to fruition in the latter decades of the 20th Century. The task was to look forward in time and outward – beyond the edges of one’s organization – to the wider context in which one lives and on which one depends. In the early days, the pressing need was not to lose the Cold War. It provided the early motivation for the invention of this new set of disciplines. Some decades later, new drivers emerged—the desire to win in the marketplace and the quite different desire to allow one’s grandchildren to inherit a world fit to live in. As noted, this mix of desires – military security, economic profit, social justice and the environment – still provide the main energy behind most foresight work

For our purposes, what is important is the fact that futures research and foresight emerged in the middle of the 20th Century. As Frye [24] has observed “*It matters when one is cast into history*”. The reason, of course, is that one will necessarily be shaped by and carry forward the unconscious patterns of consciousness and thought – the worldviews, beliefs and attitudes – that were commonly taken-for-granted at the time of one’s birth. As we have seen, one of the things that were happening in the middle of the 20th Century was the birth of management as a second and separate level of generality.

It is to be expected then, that futures research and foresight would be developed as activities of and for managers. This was in fact the case. The language of *scenario planning* is no accident. Scenario creation was initially seen as a useful way to expand, but not transcend, the mind of a manager.

In the language used to explore the model in Fig. 3, we can now say that futures studies and foresight were developed as Level Two practices within and for the minds of managers. Futures research and foresight were developed in the mid-20th Century as a response to the needs of some of the major institutions of an Industrial society. It follows that this new practice would likely reflect the taken-for-granted assumptions of Industrial cultures. Since Industrial cultures privilege hard and obvious data over soft and subtle data, it follows that foresight as commonly practiced in Industrial societies will share this characteristic.

In fact this bias to privilege the obvious can be seen in the history and present practice of foresight. In our judgement, foresight has been and largely still is focussed on (a) gathering data that is sufficiently obvious that most folks can agree on it,



and (b) struggling to think in new ways about what the data might imply for the future. It does not yet include a thoroughly routinized and reflexive stance that develops the capacity to see and critique the deepest assumptions of human culture and consciousness, including one's own. That this capacity is now being called for we acknowledge [25]. Our intention in this paper is to reinforce this insight and nurture the development of the foresight we now require.

As evidence for the view that foresight has been somewhat myopic, at least as seen from a Level Three perspective, we offer the actual practice of the field over the last five decades.

- Most practitioners and clients have seen foresight as a way of extending their grasp on and control over the future. The assumption has been that they face an essentially familiar future; the intention has been to improve on their present position in such a future. The common assumption has been that the utility of foresight is as a tool for planning that increases wealth and manages risks.
- Virtually all Horizon Scanning has focussed on data that is so obvious that any serious researcher would agree with it. The common acronyms such as STEEP – social, technological, economic, environmental and political – direct us to such evidence. Even much of the methodology discussion is tinged with this orientation. The thought that we may well face conditions beyond our ken is neither dwelt on, nor developed. Slaughter's [18] call for an integral foresight practice has not yet been heard, absorbed and routinized.
- Climate change as now understood is a classic example of this bias. Every government and involved agency agrees that massive investments must be made in science and technology in order to cope with climate change. None even hints at the fact that equally massive investments must be made in understanding the dynamics of profound changes in human consciousness and culture. The reason, of course, is first that the emerging situation is off the mental maps of every existing culture. Second, as we have argued, sustained success requires that a culture must be able to grasp and meet the requirements of new contexts, even if it has to evolve its deepest presuppositions and perceptions. Given our present practice, the bloody obvious we can see; the blindingly obvious we are not yet attuned to.

The main reason the practice of foresight lags behind the core emergent need of the 21st Century is that most who practice foresight have not yet come to terms with the new requirements of Level Three Foresight—what we call Foresight 2.0. To do so, we need to return to the evolution of our consciousness regarding the levels at which human culture and consciousness can be understood.

#### 4.4. The emergence of governance and leadership

In the early 21st Century there is a new restiveness in the air. More and better management, strategic planning and long-range planning do not seem to be able to bring us the deeply satisfying results and lives for which we hunger. On the contrary, there is a growing consensus that we are over-managed and under-led; that today's focus on increasing efficiency is a fetish that will not lead us home. [26] Once again, as in the 1950s, something more than working smarter at the level of work we already know so well appears to be needed. In this situation, the language of *leadership*, *vision* and *governance* is emerging with a sense of urgency that should not be unexpected. In our view, the new linguistic demands for *leadership*, *governance*, *vision* and *new strategic directions* are a sign that it is time, again, to move to a new level of generality, that of human consciousness. This expansion of consciousness is captured in Fig. 5. That this step is not yet routine, is obvious.

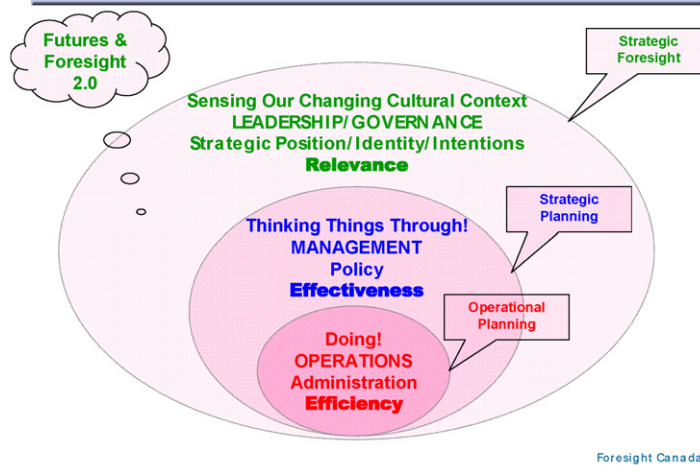
Almost everywhere, if one asks to be shown the senior leaders of an organization, one is pointed to the most senior managers—the CEO and his/her direct reports. Much of the research and literature on Leadership is based on observation of senior managers. In short, Leadership is widely seen to be that which Senior Managers do. The fact that the vast and still growing leadership literature is almost wholly silent on *the new cognitive work of leadership* is a sign that the cognitive work of Leadership is not yet seen and grasped as a higher and separate cognitive level of generality—one that is as distinct from the cognitive work of management as the latter is from the cognitive work of Administration. In our view, this still-common assumption is mis-taken. The cognitive work of Leadership is unique and must not be conflated with the cognitive work of management or Administration. As we move to describe the cognitive work of Leadership, it must be remembered that for us Foresight 2.0 is the cognitive work of Leadership.

In our view, Foresight 2.0 – the cognitive work of Leadership – is slowly being teased from the cognitive work of management; just as the latter was teased from administration in the mid-to-late 20th Century. In time, we will clearly and easily distinguish among:

- *Operational planning* (looking forward and inward with an Administration mind),
- *Strategic planning* (looking forward and inward/outward with a management mind),
- *Foresight 1.0* (looking forward and outward with a management mind), and
- *Foresight 2.0* (looking forward and inward/outward with a Leadership mind).

The fact that this evolution is not yet clear; that strategic foresight is still routinely reduced to and confused with both strategic planning and even long-range planning does not entail the fact that there are no differences to be acknowledged. Rather, in our view, it means that the evolution of strategic foresight as the core intellectual work of Leadership is emerging

### “Three Level” Cultures – 21<sup>st</sup> Century



### Normal Range of Consciousness Required in the 21<sup>st</sup> Century

Fig. 5. Normal range of consciousness required in the 21st Century.

so slowly and incoherently that its signal strength is still below the threshold of consciousness of most managers and even many foresight practitioners.

The major differences between the mind of Managers and Leaders is set out in Fig. 6.

In summary, a table of the evolution of the three levels at which we must now work is captured in Fig. 7.

#### 4.5. Foresight 2.0

In our view, if the central concern of Administration can be seen as *doing* and that of management as that of *thinking about doing*, the central cognitive passion of those who properly practice Leadership and Governance is the question of *ensuring relevance*—“What is happening or may happen in the wider context in which we exist over 5 to 100 years that may present trajectory-altering (strategic) threats or opportunities to us as an organization, industry, society, country, species or planet?” Just as the mind and identity of a manager differs from that of an operator, so the mind and identity of a leader differs from that of a manager. By definition, in our terms, a Leader is one who has moved far beyond the bounds of his or her organization and is struggling to see, understand and *take responsibility for the whole*—to use the slogan of the World Business Academy. [27]

In order to do this kind of work, the mind of a leader must differ from that of a manager in several ways. The perspective and capacity is longer, rather than shorter; wider and systemically integrated, rather than narrow and siloed; deeper and




### Contrasting Minds & Intuitions

<u>Management</u>	<u>Leadership/ Governance</u>
• Goals, strategies (policies) and plans are “real”	• Sensibilities matter
• Responsible for thinking about doing things and controlling those who do	• Responsible for sensing and making sense of changing contexts & consciousness
• Follow the plan; be innovative	• Sensing is cultural/ personal
• Decide outcomes before you begin	• Long, broad and deep views
• Measure progress by tangible indicators	• Allow for emergence
• Growth is good, make it happen	• Expect to be surprised
• Success is effectiveness	• Increase adaptive capacity
	• Can & must be reflexive
	• Success is continuing relevance

Foresight Canada

### Contrasting the Minds and Intuitions of Managers and Leaders

Fig. 6. Contrasting the minds and intuitions of managers and leaders.

Type of Work	The Work	The Focus	Success Measured By	How Widespread	When Systemized
	<b>DOING</b> physical things in any organized area of life	Operations Tactics, Logistics, Work Plans	<b>Efficiency:</b> ratio of results achieved to resources/energy expended	Now world-wide among the educated	1900 To 1950s
	<b>THINKING</b> about doing things in organized area of life	Missions, goals, policies, strategies & objectives	<b>Effectiveness:</b> degree one's goals are actually achieved by one's activities	Becoming common among the educated, globally	1950s To 1990s
	<b>SENSING/</b> "Seeing" and grasping the changing historic context in which one lives	Situation – past, present and future – vision – strategic intentions, strategic directions, character, core roles	<b>Relevance:</b> degree of fit between one's situation and one's grasp of it, vision, strategic intentions, strategic directions, character	Spotty, few experts, early networks only now emerging	1990s to 2030?

**Comparing the Three Levels at which we Work Now**

Fig. 7. Comparing the three levels at which we work now.

more subtle, rather than shallow and un-nuanced; deeply personal, rather than impersonal; and reflexive, rather than non-reflexive. These capacities are required because the realities one is dealing with are more subtle and ambiguous than those of management, let alone the obvious realities of Operations. In short, becoming a leader is not just a career move; it is a profoundly personal journey that takes years and decades to grow into. The issue is not whether leadership can be taught or merely recognized; it must be formed over decades. Put simply, *Foresight 2.0 entails consciousness work and must be taught and practiced as such.*

Hard work though it be, the journey is worth the effort. It is our experience that those who have worked to develop the capacities we have identified with the cognitive work of Leadership have been able to *learn the future faster.* They have been able to develop mental maps and models of the long-term evolution of human consciousness and cultures that penetrate into today's turmoil deep enough to pick up important signals long before they will be obvious to those with the mind of a Manager, let alone the mind of an Administrator. Further, we know of no other path that leads to the same results. It is time for strategic foresight to be recognized and practiced as a Level Three activity.

The main reason we make this case is that for good or ill, as we read the evidence, ours is a time of three-level change. One of the core results of Foresight Canada's research is the view that, *in the 21st Century, survival requires that persons, organizations and whole cultures learn to live as Level Three persons, organizations and cultures; that a Level Two approach to a Level Three world is necessarily fatal.* A two-level approach is simply too narrow, fragmented, short-sighted, shallow, un-nuanced, impersonal and non-reflexive to allow us to be able to see what needs to be seen, think it through appropriately, and act accordingly. Further, it is still trapped in the unconsciously accepted understanding of reality and societal project of the culture in which it is practiced. So in the Industrial West, *sustainability* has largely become code for, *"How do we ensure the essential continuity of the present game of modern consumer capitalism?"* However, as we learn foresight 2.0 – to see and critique the underlying assumptions of our own culture and those of others – we will learn to explore the question of whether sustaining the human adventure requires the further evolution and transformation of human consciousness and cultures.

It may be unfortunate that ours is one of the few times in history in which profound change is occurring at every level of human consciousness and culture. However, *the rule is that survival requires a capacity to read and respond appropriately to change at any and every level it is occurring at the time one is alive.* Even the military and economic power of an Empire cannot rescind this rule.

You may find our assessment of our situation in history to be somewhat terrifying. On most days we do. It suggests that our situation is not at all what it is almost universally taken to be; that the risks are far more profound than now assumed; that some of our failures are far deeper than the lack of commitment, money, systematic thought, foresight and effort that are widely seen as the sources of failure. Since there is not a political party in the world that has a Level Three grasp on the world, we are not merely in for hard sledding; as a species we are truly in deep trouble.

However, in this universe emergence is real. The possibility is real that a critical mass of foresight practitioners can grow into the new three-level work of Foresight 2.0.

## 5. The road ahead

If the general thrust of this paper is sound, we urgently need to learn to practice Foresight 2.0 at a new level of generality with the reflexive minds of Leaders. What can be done to advance this cause?

First, and foremost, we need to acknowledge that our time is ripe for the development of Foresight 2.0, whereas in 1980, it was not. It is worth remembering that this paper could not have been written or understood three decades ago. Yet many who read it will broadly agree with its main thrusts, even while they wince at its inadequacy. This response is what one would expect as normal in the early stage of development of any truly new way of experiencing a time in history.

Further, as noted, some foresight professionals are already committed to moving in this direction; the work of developing the next stage of foresight is already underway. We note particularly:

- The call for reflexivity as a necessary stance of all foresight was central to the recent COST A22 conference on Foresight Methodology in Athens [17,25].
- A paper prepared by Institute for Prospective Technological Studies (IPTS) for the COST A22 conference held in Athens in July 2007, argues for the integration of science and technology foresight into a wider societal foresight [30].
- One way to summarize the sensibility that was manifest at the 3rd Conference on Organizational Foresight in Glasgow in August 2007 is that *we must reformulate foresight to reflect what we are coming to know about the character and requirements of a social constructivist epistemology* [31].
- We argued at the first two IPTS conferences on Methodology for Science and Technology Foresight that we need to re-conceive foresight in light of the evolution of the philosophy of science and the emergence of a social constructivist epistemology [28,29].
- The 9-11 Commission [32] found that the essential errors leading to 9-11 were not only of “capabilities, policy and management”, but of “imagination”. Because they did not have a formal three-level model to work with they were not able to sustain or capitalize on this insight. But at least they stumbled across the decisive importance for our future of the shape and content of human consciousness and its logical priority over both thinking and doing.

While it is clear to us that the work of developing Foresight 2.0 has begun, many steps must still be taken to get this new level of work on the agenda of practitioners and governments, corporations, think tanks and other leading institutions. The critical step is to undertake this work as an explicit project. We offer only a few suggestions as to how this might be done:

- Establish an effective global network of those who already see the importance of Foresight 2.0 as three-level work. As things now stand, no foresight network has this focus. A thousand points of light may be lit, but without a capacity to network and focus them, collectively they illuminate little.
- Have such persons work together to write a manifesto that clearly sets out why three-level work is vital to the human future.
- Re-shape the various training programs that teach foresight into vehicles for the development of Foresight 2.0 as a needed extension of present foresight capacity.
- Articulate a research program to explore and map the many elements of a new integrating science focussed on the long-term change, evolution and transformation of human consciousness and cultures. This will be a science that does for human affairs what ecology and environmental science do for the physical universe—offer holistic and developmental understandings of what it is, how it works and how to intervene wisely and lovingly while there is still time to act. Unless we re-ground our politics, economics, social policy and our own lives in such a science, the human prospect is bleak.
- As the networked community of Foresight 2.0 researchers and practitioners is developed, envision and then begin to plan the world's first gathering of major organizations and jurisdictions that are committed to responding to our world as an ongoing social construction and developing the capacities to govern themselves accordingly. We anticipate that it will be held by 2020. Who will be there and where it will be held are open questions, but we are confident that it will be held.

Foresight Canada is committed to nurturing all of these steps. An initial meeting of some of those who are committed to this conversation was held in May 2008 in the Canadian Rocky Mountains. We welcome both critiques of our thinking and expressions of interest from those who seek to develop Foresight 2.0 as an open source project.

## References

- [1] The characteristics and frustrations of programmatic pieces are well known. They set out on new ways of ordering the familiar data in a field, based on fresh, but intuitive patterns. By definition, in such cases there is too much and too little existing academic dialogue to draw upon. Too much, because new insights typically draw on a far wider range of data than the field under discussion; too little, because in the early days of an emerging dialogue little has been written that addresses directly and in explicit detail the new core questions and issues. It follows that I cannot list the full range of persons who inform this paper. Nevertheless, allow me to acknowledge, as a researcher and practitioner, that my life, mind and imagination have been greatly influenced by the writings of such persons as Peter L. Berger, R.G. Collingwood, Peter Drucker, Northrop Frye, John Hick, John Macmurry, Donald Michael, Richard Slaughter, Wildfred Cantwell Smith, Stephen Toulmin, and Sir Geoffrey Vickers.
- [2] Foresight Canada, <http://www.foresightcanada.ca>.
- [3] Y. Dror, *The Capacity to Govern*, A Report to The Club of Rome, 1994, Frank Cass, 2001.
- [4] J. Tainter, *The Collapse of Complex Societies*, Cambridge University Press, Cambridge, 1988.

- [5] J. Diamond, *Collapse: How Societies Choose to Fail or Succeed*, Viking, New York, 2005.
- [6] R. Nelson, Whither democracy? Reflections on the Prospects for democracy in the 21st century, in: Mika Mannermaa, Jim Dator, Paula Tiihonen (Eds.), *Democracy and Futures*, Committee for the Future, Parliament of Finland, Helsinki, 2006, pp. 160–169.
- [7] R. Nelson, Exploring cultural frame-change: towards a capacity to co-create the next form of human civilization by modelling the evolution of human consciousness and culture, Athens, in: *From Oracles to Dialogue: Exploring New Ways to Explore the Future*, COST A22 Conference, July 9–11, 2007.
- [8] A. De Geus, Planning as learning, *Harvard Business Review* (March/April) (1988) 74.
- [9] R. Nelson, D. Harries, Strategic opportunities and challenges facing Canada and the world in the early 21st century and the science and technologies required to sustain success, a Research Paper, Calgary, Foresight Canada, July 2005.
- [10] *The Enlightened Corporation?*, A Report of a Workshop Sponsored by the International Futures Forum, St. Andrews, Scotland, 5–6 November, 2001.
- [11] A reasonably thorough search for such work has been carried out over the past five years. We have made inquiries at eight international futures and foresight conferences in Europe and North America. We have inquired on several relevant listservs. We have searched the web for relevant institutional commitments.
- [12] T. Homer-Dixon, *The Upside of Down: Catastrophe, Conflict and the Renewal of Civilization*, Alfred A Knopf, Toronto, 2006.
- [13] R. Nelson, *Papers of the Post-Industrial Future Hypothesis Project*, Square One Management Ltd., Ottawa, 1989.
- [14] F. Fukuyama, *The End of History and the Last Man*, Avon Books, New York, 1992.
- [15] R. Kegan, *In Over Our Heads: The Mental Demands of Modern Life*, Harvard University Press, Cambridge, 1994.
- [16] S. Inayatullah (Ed.), *The Causal Layered Analysis (CLA) Reader: Theory and Case Studies of an Integrative and Transformative Methodology*, Tamkang University Press, Taipei, December 2004.
- [17] COST ACTION 22: Advancing foresight methodologies, Athens, *From Oracles to Dialogue: New Ways to Explore the Future*, July 9–11, 2007, For the final report see <http://www.costa22.org>.
- [18] R.A. Slaughter, *Pathways to the Future DVD*, August 2005.
- [19] K. Wilber, An integral theory of consciousness, *Journal of Consciousness Studies* 4 (February (1)) (1997) 71–92.
- [20] A. Einstein, Widely attributed to him; occasion unknown.
- [21] E. Kant, *The Critique of Pure Reason*, 2nd ed., Palgrave Macmillan, New York, 2007 (1787, Trans. Norman Kemp Smith).
- [22] F.W. Taylor, *The Principles of Scientific Management*, New York and London, Harper and brothers, 1911.
- [23] P. Drucker, *The Practice of Management*, Harper and Row, Publishers, New York, 1954.
- [24] N. Frye, *Journey Without Arrival*, Montreal, A Film by The National Film Board of Canada, circa, 1975.
- [25] T. Fuller, K. Loogma, Constructing futures: a social constructionist perspective on foresight methodology, Athens, in: *From Oracles to Dialogue: Exploring New Ways to Explore the Future COST A22 Conference*, July 9–11, 2007.
- [26] J. Stein, *The Cult of Efficiency*, House of Anansi Press, Toronto, 2001.
- [27] World Business Academy, <http://www.worldbusiness.org>.
- [28] R. Nelson, The interplay of technology, consciousness and culture: implications for future-oriented technology analyses, SEVILLE, EU-US Seminar: new technology foresight, *Forecasting & Assessment Methods* (2004) 13–14, MAY.
- [29] R. Nelson, Implications for our practice of future-oriented technology analysis of the 20th century revolution in ontology and epistemology, Seville, in: *Second International Seville Seminar on Future-Oriented Technology Analysis: Impact of FTA Approaches on Policy and Decision-Making*, 28–29 September, 2006.
- [30] P. Warnke, Foresight as a means to modulate socio-technical trajectories: learning from Science and Technology Studies, Athens, in: *From Oracles to Dialogue: New Ways to Explore the Future*, July 9–11, 2007.
- [31] *Foresight: Learning the Future Faster*, Glasgow, August 16–19, 2007 <http://www.gsb.strath.ac.uk/foresight/>.
- [32] *The 9-11 Commission Report*, Final Report of the National Commission on Terrorist Attacks Upon the United States, Official Government Edition, US Government Printing Office, 2004.