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article:
a new framework for
environmental scanning

a new (frame)work for **environmental** scanning

richard a.* slaughter

This paper suggests that environmental scanning (ES) has been restricted to parts of the external world and has largely overlooked the inner one. In fact the inner/outer distinction has itself been lost sight of within Futures Studies (FS), as in many other fields of enquiry and action. The result is that much well-intentioned and otherwise disciplined work takes place in a cramped empiricist frame that has, for good reason, been dubbed 'flatland'. For ES to more adequately comprehend a richer and more complex reality, a broader scanning frame is needed. This paper provides a model for working toward that goal.

* **Richard Slaughter** *is foundation professor of foresight at* **Swinburne University of Technology, Melbourne, Australia** *(Email: rslaughter@swin.edu.au).*

Environmental scanning (ES) is a methodology that stands at the juncture of foresight and strategy. It establishes organizationally relevant criteria that allow prepared human minds to discern information, knowledge and insight from the multitude of 'signals' that occur daily. In most cases the starting point for ES is the design of a scanning frame which helps practitioners decide what to look at and how to judge the usefulness of information. But, at the same time, there also needs to be an openness to new data, 'lone signals' and unconventional sources. So one of the meta-skills of good ES work is to know when to apply the standard 'rules' of discrimination and when to set them aside. This is quintessentially a matter of human judgement, not of calculation. As such ES stands firmly in the interpretative domain, not that of the dominant empirical tradition of futures work.

Organizations that do not pay attention to a wide range of signals are unlikely to prosper because they will have missed vital information about markets, products, customers, competitors and the like. Organizations that do adopt effective ES are much more likely to succeed because they are 'tuned in' to their environment – they 'know what is going on'. Moreover, the trained eye (ear, brain) can detect new signals and provide early warnings of change. In other words, ES is a key step in creating an in-house foresight capability. Thus ES is steadily emerging from its academic origins into more widespread practice where it has a range of practical implications, particularly in business. As Choo notes:

Information derived from environmental scanning is increasingly being used to drive the strategic planning process by business and public sector organizations in most developed countries. Research evidence shows that environmental scanning is linked to improved organizational performance.[1]

But most businesses are pragmatic organizations that neither grasp the bigger picture nor have the means to do so. They exist for the limited purposes of making money and satisfying shareholders' expectations. They are not, on the whole, interested in critiquing conventional assumptions or looking beyond currently popular ideologies such as scientism and economism. Hence the methods they use tend to be focused on 'getting the job done'. Though 'triple bottom line accounting' (ie using economic, social and environmental criteria) is slowly emerging onto the agenda, powerful boundary maintenance practices continue and thus the focus on the pragmatic achievement of limited, instrumental goals remains dominant.[2]

This essentially technical orientation is only one of many that are possible. But it is reinforced by strong empiricist tendencies in the world of corporate strategy. What seems to matter most is getting a grip on the key trends 'out there' – trends that can be measured and captured through statistics, models and graphs. Various books are available that popularize the notion that 'you, too, can profit from reading the trends'.[3] Those who detect and employ them first will also be the first to benefit. Hence the focus in Hamil and Prahalad's work on what they call the 'race for industry foresight'.[4] In these terms, such an approach is entirely reasonable. It makes a great deal of sense if one is working in a typical business environment, with pragmatic strategic and financial goals, and where the relevant bottom line is largely economic.

There are at least three reasons why this approach is insufficient. First, the typical empirical scanning frame overlooks phenomena that do not respond to empirical 'ways of knowing'. Something is being lost, but what that 'something' might be is not always clear. Second, all organizations are located in a wider milieu – a world that is experiencing dysfunction, stress and upheaval on an unprecedented scale. Its future has become highly problematic and humanity as a whole is facing a profound 'civilizational challenge'. In essence, the challenge involves the following:

• understanding the sources of dysfunction and breakdown in the global system (a diagnosis);
• taking responsibility for reframing the way we understand and manage spaceship earth (values, purposes, strategies and goals); and
• developing a commitment to collectively changing course and striking out in a new, or renewed, direction (a vision of a transformed world).[5]

1 C.W. Choo, *Information Management for the Intelligent Organization: the Art of Scanning the Environment*, American Society for Information Science, Medford, NJ, 1995, p 101.
2 B. Daviss, 'Profits from principle: five forces redefining business', *The Futurist*, Vol 33, N0 6, June/July 1999, pp 28–33.
3 G. Celente, *Trend Tracking*, Warner, New York, 1990.
4 G. Hamil and C.K. Prahalad, *Competing for the Future*, Harvard Business School, Boston, 1994.
5 R. Slaughter, 'Futures for the third millennium: enabling the forward view', *Prospect*, Sydney, 1999.

Practical people in organizations of many kinds either label such concerns 'academic' or consign them directly into the 'too-hard basket'. Yet these are very poor strategies, amounting to little more than avoidance. They merely leave the hard choices to others or to the mindless working-out of processes and systems at every level.

The third reason why empirically based ES is lacking is that organizations themselves need access to richer, deeper outlooks and more thoughtful, innovative strategies. In other words, thinking more broadly, more deeply, and bringing into play non-traditional sources and 'ways of knowing' provides new insights and leads to new opportunities, new ways of beating the competition. For example, the Finnish firm Nokia moved well ahead of its competitors by taking up the notion of 'human technology' and refocusing its publicity on style, ease of use and the sheer pleasure of well-designed mobile phones. Similarly, Apple computers not only paid attention to increasing the functional capability of its products, it also released colourful new-look items that made standard computer hardware look boring. Both companies had correctly 'read' some very subtle environmental signals and were among the first to understand the growing importance of 'soft' features such as image, style and the overall 'feel' of products.

So the question behind this paper is: 'is there a way for us, and the organizations we work in or with, to take a deeper, richer and more productive view of the whole environment?' I believe there is. In what follows I will first draw on the work of one leading transpersonal synthesist and then attempt to set out an approach to ES which encompasses aspects of our world that have been widely overlooked.

Transcending flatland

In a paper with the above title, I explored the way that the modern futures project became trapped in a kind of empiricist prison.[6] That is, it has evolved methods for reading the world 'out there' but has largely overlooked the world 'in here'. Moreover, it has also, in its dominant, mainstream American form, overlooked the rich possibilities for understanding that are given to us through such avenues as hermeneutics, critical theory, semiotics, post-structuralism, multiculturalism and the transpersonal realm. I argued that these oversights have deprived the field of some of the most powerful options for understanding the global predicament and responding to it in deeply transforming ways. In short, I argued that FS had become trapped in a metaphorical flatland. Ken Wilber described some of the consequences when he wrote that:

depths that required interpretation were largely ignored in favour of the interlocking surfaces that can merely be seen … valueless surfaces that could be patiently, persistently, accurately mapped: on the other side of the objective strainer, the world appeared only as a great interlocking order of sensory surfaces, empirical forms.[7]

Though brief, this statement stands as an enduring critique of approaches to FS and ES that are based only or primarily on empirically based data from the external world. Something essential is missing.

A meta-map for a renewed worldview

The corpus of Wilber's work has produced many useful outcomes. Among these is a meta-framework that distinguishes four domains within which different phenomena are located and thus different 'ways of knowing' are employed. (It is necessary to stress that, before coming to any hard and fast conclusions about this perspective, readers should consult the original sources.)

Properly understood, Wilber's 'four quadrants' provide a comprehensive and systematic basis for FS in general and ES in particular. They are based on an ingenious division between 'inner' and 'outer' on one axis; and between 'individual' and 'social' on the other (see figure 1). Each quadrant is used to trace the process of evolution in that

6 R. Slaughter, 'Transcending flatland: implications of Ken Wilber's meta-narrative for futures studies', *Futures*, Vol 30, No 6, August 1998, pp 519–34.
7 K. Wilber, *Sex, Ecology, Spirituality: the Spirit of Evolution*, Shambhala, Boulder, CO, 1995 p 418.

particular field. So there are four parallel processes, each intimately linked with the other: interior-individual development; exterior-individual development; interior-social development and exterior-social development. Wilber uses the term 'holons' to represent entities that are embedded in systems, part separate and part whole. In his words, 'the upper half of the diagram represents individual holons; the lower half, social or communal holons. The right half represents the exterior forms of holons – what they look like from the outside; and the left hand represents the interiors – what they look like from within.'[8]
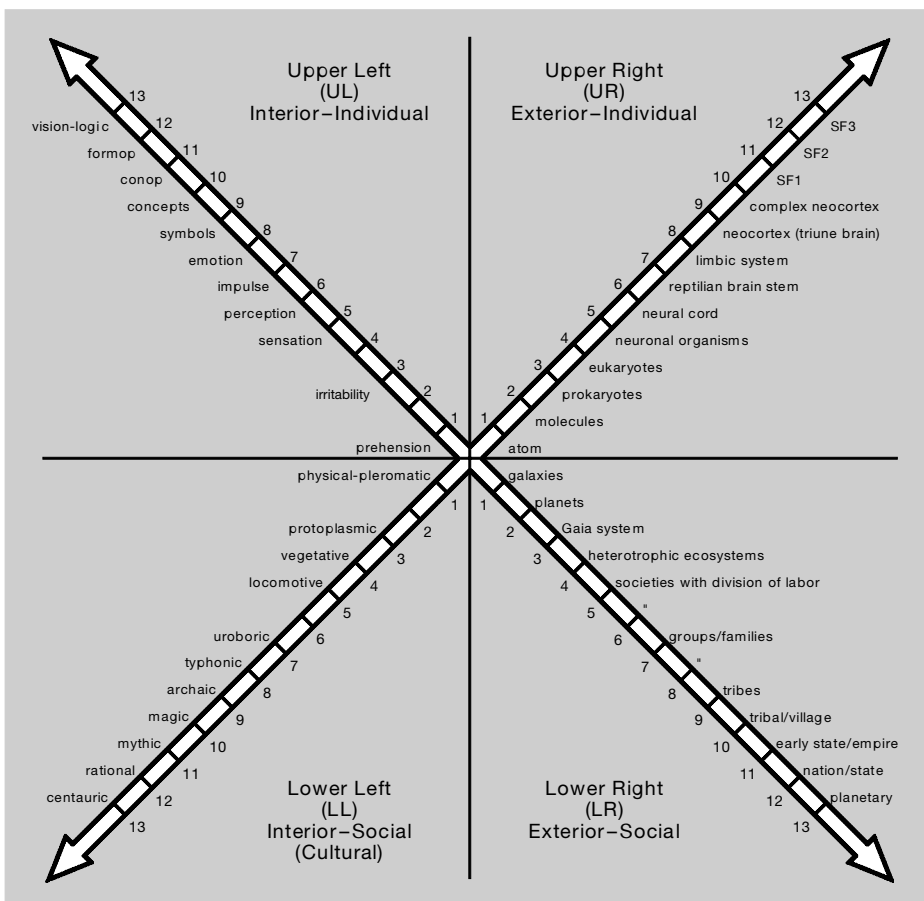
Figure 1 The four quadrants
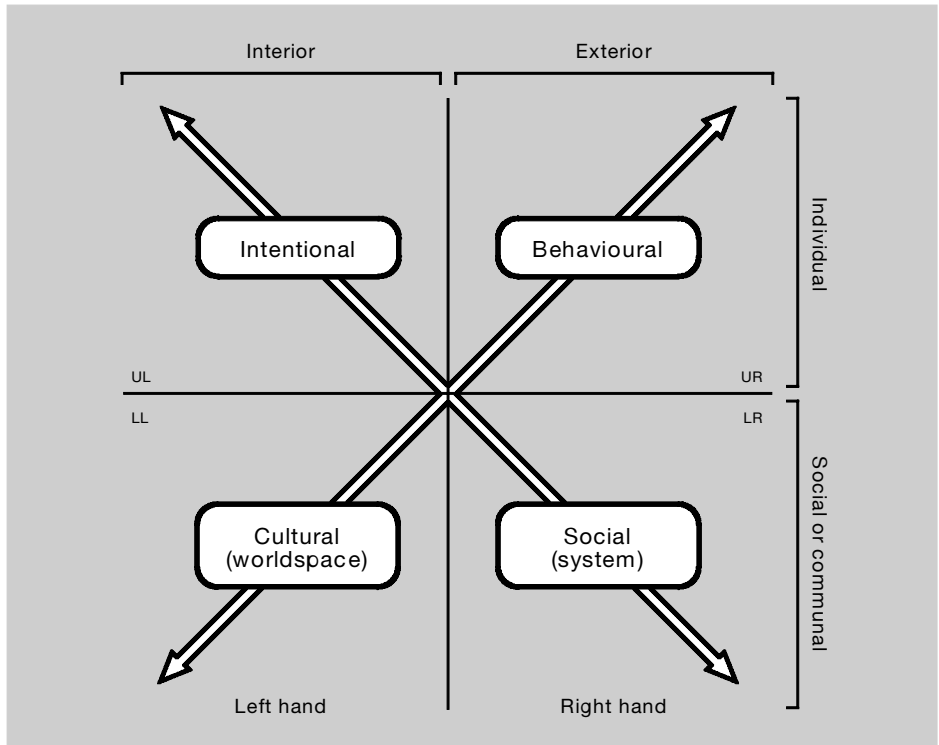
Source: K. Wilber © Sex, Ecology, Spirituality: the Spirit of Evolution. (Shambhala Publications Inc, Boston, Mass, USA, 1995).

Figure 2 outlines stages of development in the four realms as drawn from the work of various different observers. 'The upper right quadrant runs from the centre – which represents the Big Bang – to subatomic particles to atoms to molecules to cells to neural organisms to triune-brained organisms. With reference to human behaviour, this quadrant is the one emphasized by behaviourism.'[9] The upper left quadrant 'runs from the centre to prehension, sensation, impulse, image, symbol, concept and so on… With reference to human beings, this quadrant contains all the 'interior' individual sciences (among other things), from psychoanalysis to phenomenology to mathematics.'[10] The lower right quadrant runs through the stages of galactic and planetary evolution. With reference to humans it 'then runs from kinship tribes to villages to nation states to (the) global world system'.[11] It also incorporates the physical realms of architecture, technology etc. Finally, the lower left quadrant outlines the interiors of social systems; that is their culture, values and worldviews. These range from what Wilber calls the 'physical-pleromatic' stage to the 'mythic, rational and centauric' stages.[12]

8 *Ibid*, p 121.
9 *Ibid*, p 121.
10 *Ibid*, p 122.
11 *Ibid*, p 123.
12 *Ibid*, p 123.

One use of this scheme is to provide a diagnosis of the modernist path to our present day 'flatland', a path that Wilber suggests involved repressing or dissociating much of the inner world (the left-hand side of the diagram) which is what has clearly happened in FS and ES. But the story does not end there. It advances two key suggestions about cultural recovery that have many implications for organizations and the strategies, or ends, they pursue. One concerns the reintegration of the 'big three' (the worlds of 'I', 'we' and 'it'); the other addresses the further development and integration of new stages beyond those already achieved. Wilber's work can be seen as central to the cultural enterprise that is futures studies because it provides a framework for mapping the outlines of more fully integrated and, indeed, more advanced cultures.

Figure 2 Some details of the four quadrants

Source: K. Wilber© Sex, Ecology, Spirituality: the Spirit of Evolution. (Shambhala Publications Inc, Boston, Mass, USA, 1995).

Grounds of cultural recovery

The above is obviously only a partial summary of a detailed account of individual and collective development over a long period of time. Many insights about the possible grounds of cultural recovery can be derived. Here I will touch briefly on five general points.

1. Wilber's account seeks to re-establish a vertical dimension that, if not lost, was certainly obscured during the modern period. In his words:
once the weight of the Big One is lifted from the shoulders of awareness, the Big Three jump instantly back into focus, and interior depths once forbidden to serious

discourse … now unfurl before the mind's inward eye: the surfaces are not surfaces at all, the shadows hide something else. The appearances don't just reveal, they conceal: something other is going on.[13]

2. He attempts to clarify the sources and resolutions of modern pathologies. In this view, they are associated with different types of arrested development, corresponding to each of the levels of evolution. For example, a key pathology of the industrial period is the 'disengaged ego'. While the ego is seen as a tremendous step forward from more primitive stages, Wilber argues that its tendency to move from separation to dissociation leads on to many of the self-indulgent behaviours of our age.

3. He carries forward the work of the great technological skeptics of our age, writers such as Lewis Mumford and Jaques Ellul. Wilber writes:
   I trace a large part of this dissociation and resultant emphasis on the Big One (of instrumental/objectivist rationality) to the strong influence of industrialization and the machine mentality…: the techno-economic base supported instrumental-purposive activities, and in a way out of all proportion to the instrumental-purposive rationality that did in fact build it: a positive feedback loop that sent calculative rationality spinning out of control, precisely in the avowed purpose of gaining control.[14]

4. He provides a rationale for re-establishing a central role for human agency and aspiration. For example, he notes that: 'as for the coming transformation itself, it is being built, as all past transformations have been, in the hearts and minds of those individuals who themselves evolve to centauric planetary vision'.[15]

5. He helps to define aspects of the most promising ways ahead. Put briefly, this involves understanding and refusing the modernistic 'flatland' in all its many guises and manifestations, and then clarifying and pursuing further stages of personal and social development. However, this is not a trivial 'new age' view full of sweetness and light. Rather, it has a gritty reality to it: 'contacting the higher self is not the end of all problems but the beginning of the immense and difficult new work to be done'.[16]

A revised frame for ES

In a much earlier work I suggested that FS could best be understood as taking place on a range of different levels.[17] This view has been taken up by others and elaborated into a method dubbed 'causal layered analysis'.[18] Essentially, it proposes that the world of reference that interests us in relation to FS is not monolithic but layered and that different 'layers' reveal different phenomena. Though there is some divergence in detail, the approaches are structurally similar. Both start with more superficial material and move 'down' into deeper areas. Both use four categories. And both can be adapted to broaden the frame of ES.

The terms I originally proposed for the four main 'layers' of enquiry were: pop futurism, problem-oriented futures work, critical futures studies, and epistemological futures work. It is useful here to summarize what each of these terms stands for.

Pop futurism

This is mostly trite, superficial work. It is media-friendly and can often be seen in weekend newspaper supplements, magazines, popular books and on brief TV features. Statements such as: 'how science and technology are improving our lives and creating the future' sum it up. This is the world of the fleeting image and the transient sound bite. It is eminently marketable, but bereft of theory or insight.

Problem-oriented futures work

This is more serious work. It looks at the ways that societies and organizations are responding, or should respond, to the challenges of the near-term future. So it is largely about practical matters such as social rules and regulations, marketing and conventional

13 *Ibid*, p 420.
14 *Ibid*, p 417.
15 *Ibid*, p 197.
16 *Ibid*, p 496.
17 R. Slaughter, 'Probing beneath the surface', *Futures*, Vol 21, No 5, October 1989, pp 447–65.
18 S. Inayatullah, 'Causal layered analysis: poststructuralism as method', *Futures*, Vol 30, No 8, October 1998, pp 815–30.

strategy. It emerges most typically in eg environmental legislation and organizational innovations, particularly in business. It is significant that the bulk of futures work takes place in this domain.

Critical futures studies

Critical work is emerging as a refreshingly new perspective. It attempts to 'probe beneath the surface' of social life and to discern some of the deeper processes of meaning-making, paradigm formation and the active influence of obscured worldview commitments (eg 'growth is good'; 'nature is merely a set of resources' etc). It utilizes the tools and insights that have emerged within certain of the humanities and which allow us to interrogate, question and critique the symbolic foundations of social life and – this is the real point – hence to discern the grounds of new, or renewed, options. Properly understood, the deconstructive and reconstructive aspects of high quality critical futures work balance each other in a productive dialectic.

Epistemological futures work

Epistemological futures work goes deeper still. Here FS merges into the foundational areas that feed into the futures enterprise and provide part of its substantive basis. Hence what has been termed the 'social construction of reality' philosophy, ontology, macrohistory, the study of time, cosmology, etc are all relevant at this level. It is here that the deepest and, perhaps, the most powerful forms of futures enquiry operate. The main reason is that such work helps to unfreeze the everyday life that we take for granted and to identify new sources of freedom, new ways ahead. Essentially it permits the systematic rethinking, revising and recovery of the foundations of the social order. Clearly this has, or could have, huge implications for organizations.

Now in this form, the categories refer to general approaches within each of the 'layers' of futures work. With some adjustment and revision the former can be matched with Wilber's four quadrants. Pop futurism represents a superficial gloss on the lower right and, to a lesser extent, the upper right quadrants (the world of empirical science, or the 'it' world). Problem-oriented futures work, as presently constituted, refers mainly to limited aspects of the lower left quadrant (the shared social world, or the world of 'we'). Critical and epistemological futures work refers to the upper left and the lower left quadrants respectively (the worlds of subjective and intersubjective meanings). Overall, then, four new foci for ES emerge. These are:

1. (Upper left) The inner world of individual identity, meaning and purpose
2. (Lower left) The intersubjective social/cultural world
3. (Upper right) The external world of the individual
4. (Lower right) The collective external world

The key point is that in each of these four 'worlds' there are different phenomena at work and different 'ways of knowing' are needed to understand and study them. Running them all together – as has happened to date in FS and ES – is a recipe for the exclusion of some key phenomena and confusion among others. Thus in (1) what is at stake is the level, or quality, of individual human consciousness. What we would be alert for here are changes in peoples' values, perceptions and goals; overall, the meanings they weave with their lives. In (2) the focus is on shared collective structures. Here we would consider changes in languages, cultures, institutions, disciplines and the like. In (3) the concern is with changes in the ways people act externally, eg voting patterns, consumer behaviour, reproductive practices etc. Finally, in (4) we are back in familiar industrial-era territory with objectively measurable changes in natural and constructed external environments.

Here two points can be noted. First, this interpretative scheme is itself an interpretation. It should not be reified, made real. It should be used for clarity, to cover and include phenomena that are omitted within more limited frames, but it is not reality itself! Second, all the quadrants are obviously interconnected. Many phenomena are cross sectoral by nature. Reality itself is ever and always interwoven through the four quadrants and through countless other interpretative schemes as well.

Yet the scheme as described allows some tentative conclusions. First, standard approaches to FS and ES do appear to be biased toward collective empirical phenomena (the upper and lower right quadrants) and therefore overlook the significance of the rich inner worlds of people. Second, approaches to environmental scanning which privilege

science, technology, psychology and behaviourism in particular over, eg hermeneutics, semiotics, sociology and anthropology, are, by so doing, likely to produce thin and unproductive views of the world. They will overlook the shaping role of subjective and intersubjective awareness. It follows that a more structurally sound approach would focus on changes in each of the four quadrants and therefore employ a suitable range of methods, foci and 'ways of knowing'. It is to these that I now turn.

ES in four worlds

As noted, the two right-hand quadrants (the 'it' world) have always been the primary focus of conventional ES. But using the four-quadrant approach allows us to distinguish between empirical data per se and social/interpretative data. The two left-hand quadrants are inadequately scanned by futures practitioners and are therefore poorly integrated into mainstream futures work. Though it has major implications, critical futures work (which applies primarily to the left-hand quadrants) has been widely overlooked. Within the upper left quadrant it considers the ways individuals interpret their world. In the lower left quadrant it deals with the social construction of reality. Epistemological futures work adds depth to both of these concerns, particularly in the lower left-hand quadrant, since it is concerned with the shared foundations of social life across space and time. I will now outline some of the questions that arise for ES in each of these four 'worlds'. Clearly this is a provisional formulation which will require critique and revision over time by theorists and practitioners alike.

1. The world of individual meaning and purpose

The upper left quadrant identifies the world of personal identity; of feelings, meanings, goals and life purposes. It cannot be accessed directly. It can only be accessed through an interpretative framework that is adequate to that which is being studied. Such frameworks include psychoanalysis, phenomenology, hermeneutics and the authority, the depth of insight, derived from specific cultural or religious traditions.

Within this arena the questions are personal and transpersonal. They might begin with those about family, biography, culture, tradition and work. They then might proceed to question such as 'what are our assumptions? What interests do we represent? What might we have overlooked? Such questions require reflexivity: the ability of human beings to stand back and 'see' themselves in the process of seeing, perceiving, thinking etc. In so doing, these processes are understood to be not objective but situated in a particular culture or milieu (the lower left quadrant). Though the term 'paradigm' has long been a commonplace in futures enquiry, a developed awareness of the questions and the processes of perception and reality-construction that they imply, remain uncommon in futures work and ES. Being 'critical' in this context means 'looking more deeply'. It refers to the way that human perceptions are layered and that each of these layers can be accessed using different methods. Paradigmatic texts would include Berger's classic *Ways of Seeing*, Harman's *Global Mind Change* and Hesse's novel *Siddhartha*.[19]

Scanning sources that are relevant here include the literature of perception and transpersonal psychology, much of the quality futures literature, radical and socially critical publications, and non-mainstream magazines and journals generally (eg *Whole Earth*, *Revision*, *The UTNE Reader* and *The Journal of Transpersonal Psychology*).

2. The world of cultures and shared meanings

This area can seem challenging to empirically minded observers because it too embraces phenomena that cannot be fully 'seen' in the external world and which therefore require close study and deep understanding over a period of time. As noted, such worldview phenomena tend to be widely overlooked in favour of more measurable, widely available and readily absorbed data. Here we are looking (with an inward 'eye') at cultural assumptions and driving forces (purposes, stories, myths etc), at epistemes, at civilizational perspectives and so on. Some questions that arise are as follows. What unquestioned civilizational 'givens' are involved? How are they observed? What effects do these deeply

19 J. Berger, *Ways of Seeing*, BBC, London, 1972; W. Harman, *Global Mind Change*, Knowledge Systems, Indianapolis, IN, 1998; H. Hesse, *Siddhartha*, New Directions, New York, 1951.

embedded drivers have? Are these effects acceptable? If not, how can they be moderated or changed? How are they 'coded', legitimized, applied in various contexts? What frameworks of theory and practice do they depend on?

More specific questions could include: how is society adapting to the trends operating in the global environment? How are organizations responding, adapting? What opportunities arise in the chaotic shift between cultural eras and civilizations? The focus will include social entities such as: pressure groups, government or industry enquiries, changes in laws and in regulatory regimes, new strategies, strategic alliances and so on. Sources may include: specialist information services, official pronouncements, departmental discussion papers, policy documents, drafts of new laws, and other handouts, the views of opinion-leaders and dissenters, public pronouncements of CEOs, opinion-leading books and so on. They also include scholars and books in fields such as: anthropology, macrohistory, cosmology, religion and spirituality, the study of time and so on. Paradigmatic texts here would perhaps include Michael's *On Learning to Plan and Planning to Learn* and Ogilvy's 'Futures studies and the human sciences'.[20]

Scanning sources would be derived from various areas of social and cultural research, interdisciplinarity, governance, administration and strategy. It is, of course, a vast field. But since ES attempts, in some sense, to 'cover the world', its practitioners should be able to select and filter from a vast array of inputs and data. Into this quadrant fall all the organizations, journals, publications of organized social life. In addition – and quite obviously – the world of the internet also supplies a vast amount of data on the shared social/cultural world and will obviously be an important resource. Journals such as *Futures*, *foresight*, *Quadrant* or *Economics for the Global Good* provide forums for re-negotiating a range of social and professional commitments.

3. The world of individual capability and behaviour

In the upper right quadrant the focus is on the empirical study of the physical and behavioural aspects of human beings. So it encompasses biology, health, reproduction, physical well-being and illness as well as behaviouristically oriented psychology. The study of aging is clearly located here, along with that of human behaviour under all the different circumstances of human life: marriage, child rearing, employment, consumer habits and so on. Here is where Taylorism established its foothold in time-and-motion studies and later where stakeholder analysis and responses to advertising occur. Here is where intelligence testing takes place, as well as profiling and fitness for employment. In other words, it is the visible outer arena of human capability. The bulk of educational literature addresses phenomena in this domain. It is quintessentially the field of 'self-improvement' and marketing. It includes any field where the interest is on external performance or manipulation: sporting achievements are a good example. Paradigmatic texts here would include Goleman's *Emotional Intelligence* and Covey's *Seven Habits of Highly Effective People*.[21]

Scanning sources will depend on the specific work in hand. It clearly ranges across all the fields outlined above: psychology, health, marketing, sports, etc.

4. The physical world

The world of the lower right quadrant is a vital one and that most consistently scanned by mainstream ES. It is the world of business and industry, of science, technology, architecture, the globe-spanning infrastructure and the natural environment. Key questions include the following. What is happening 'out there' that is of interest to us/our organization? What are the key drivers? What are the more subtle counter forces that may signal new phenomena, new issues, directions and opportunities? The focus is upon trends and events across the board – anything that can be detected, recorded, measured and slotted into an accounting structure. This is where discoveries in science, and their detailed applications in new technologies, occur. This is where the shapes and forms of cities are discussed and questions of the physical sustainability of human activities debated and critiqued. Paradigmatic texts would include the State of the World series and the regular digests produced by the OECD, the World Bank and other such agencies.[22]

20 D. Michael, *On Learning to Plan and Planning to Learn*, Miles River Press, Alexandra, VA, 1997; J. Ogilvy, 'Futures studies and the human sciences: the case for normative scenarios', in R. Slaughter (ed), *New Thinking for a New Millennium*, Routledge, London, 1996.
21 D. Goleman, *Emotional Intelligence*, Bloomsbury, London, 1996; S. Covey, *The Seven Habits of Highly Effective People*, Business Australia, Melbourne, 1990.
22 L. Brown *et al*, *State of the World 1999*, Norton, New York, 1999.

Sources are, of course, many and varied. They include digests, global statistics, reports, media productions, quality newspapers, abstracting services, interviews and the like as well as the burgeoning web sites where up-to-date information on nearly everything can increasingly be found.

Environmental scanning beyond empiricism

The view set out above is that ES needs to move beyond its initial concerns with the world 'out there' to include phenomena that tend to be overlooked and under valued in part because they are 'in here', where different forms of knowledge and tests of truth and usefulness apply. The reason for this view is that without a multi-perspective, multi-level or, perhaps, four-quadrant view of the world, a great deal of foresight work and strategy development merely 'spins the wheels' in the sense that it produces surprisingly little that is either original or useful.[23] A related confusion is evident in a recent CD-ROM on futures methods. In one paper the following passage appears:

Futures research tends to create a broad set of issue and questions to address policy problems and to seek insight from an extraordinarily diverse section of sources using a broad set of methods. This breadth runs the risk of the researcher being superficial. *Academic future studies tend to go much deeper into questions and, therefore, can become narrow and/or parochial in their result* (emphasis added).[24]

Here we see the misconception that breadth or depth in futures work risks producing poor results. From the viewpoint of this essay the truth is rather different. It is critical and epistemological naïvety that leads to narrowness, parochial views and superficiality, not depth. The reason is that the deeper we go into the constitution of socio-cultural realities (and the interventions made within the physical world based on them) the more richness, originality and flexibility can be found to think new thoughts and conceive of new projects in any organization or environment. Methods are therefore needed to handle complexity within the forward view without falling into unintended reductionism. A layered approach on the one hand, or a quadrant approach on the other can certainly be married up with more 'horizontal' methods to reconcile both breadth and depth.[25]

There are few precursors to such work within FS. One exception is the very thorough multi-perspective approach developed by Linstone and Mitroff.[26] Their work is based on three perspectives: technical, personal and organizational. Theirs is a scientific view and their goal is to outline what they call a 'holistic science of complexity'. It is an intelligent rationalist agenda based largely on high-quality empirical analysis and systems thinking. It produces useful insights. But, to my mind, it overlooks the deep transformations of consciousness, meaning and value that lie outside the rationalist frame. It is significant that their book closes with an optimistic reference to the need for wisdom. But the approach overlooks the deep socio-cultural processes through which it can be recovered or developed.

Conclusion

This paper has attempted to explore what for ES and FS constitutes 'new territory'. I have argued that a standard empirical framework provides an inadequate basis for both because key structural phenomena with transforming or innovative potential are thereby omitted and overlooked. The four-quadrant device is not immune to criticism. But it provides us with a meta-map, a larger and more systematic way of covering the territory. Few organizations will need to scan all four quadrants equally. However, I suspect that all would find it helpful to design their initial scanning frames with explicit reference to

23 The 1998 annual report of the Millennium project is an example of this kind of output. J. Glenn and T. Gordon (eds), *1998 State of the Future: Issues and Opportunities*, The Millennium Project, American Council for the United Nations University, Washington DC, 1998. A review by this author can be found on the Futures Study Centre website at: http://www.futures.austbus.com/othermil.htm#cmp

24 J. Glenn and T. Gordon (eds), *Introduction to Futures Research Methodology* (CD-ROM), The Millennium Project, American Council for the United Nations University, Washington DC, 1999.

25 R. Slaughter, 'Reconciling breadth and depth in futures work', *Futures*, forthcoming 2000.

26 H. Linstone and I. Mitroff, *The Challenge of the 21st Century: Managing Technology and Ourselves in a Shrinking World*, SUNY Press, New York, 1994.

them and to occasionally check for sources across these broad areas. Otherwise they will overlook factors that would, perhaps, significantly change the nature of their enquiries, redirect them or possibly undermine them altogether.

The suggestions advanced here can be reduced to some simple, but significant questions for practitioners.

• Which worlds (quadrants) are germane to the study and what are their key features?
• Do we fully understand the distinctions between the frames of reference they represent?
• Do we understand the different 'ways of knowing' that apply in different quadrants?
• Have we balanced inner/outer and individual/collective, or are there omissions and biases in our coverage?
• Do we have access to adequate sources in non-empirical areas?
• Do our staff have a sense of 'what they don't know', and hence what needs to be looked at more carefully?

A common rationale for ES is that 'forewarned is forearmed'. That remains true. Yet most people still live in cultures and work in organizations where long-term social foresight has yet to be achieved. In the light of the 'civilizational challenge' mentioned above this is to be regretted. Social and organizational well-being depend significantly on creating and responding to a variety of high quality forward views and then using them for a wide range of purposes. It would be more than a little ironic if defects in the methods used to sensitize organizations to changes in their environment were to cause them to overlook some of the most subtle but powerful sources of change around.