Futures Thinking for Social Foresight

Futures Thinking for Social Foresight

Richard A Slaughter

with

Marcus Bussey

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About the authors

Richard Slaughter

Richard A. Slaughter is an internationally recognised futurist, author, editor, teacher and innovator who works with a wide range of organisations in many countries and at all educational levels. Currently he is Director of Foresight International, Brisbane. During 1999 to 2004 he was Foundation Professor of Foresight at the Australian Foresight Institute, Swinburne University (Melbourne). He completed one of the first PhDs in futures studies at the University of Lancaster in 1982. He has since built a reputation through futures scholarship, educational innovation, strategic and social foresight and the identification of a knowledge base for futures studies. He is a fellow of the World Futures Studies Federation (WFSF) and a professional member of the World Future Society (WFS). During 2001–2005 he was President of the WFSF.

He is a prolific writer and holds several editorial positions. These include: board member of *Futures* (Oxford, UK), *Foresight* (UK), the *Journal of Futures Studies* (Tamkang University, Taiwan) and series editor of *The Knowledge Base of Futures Studies* (Foresight International, Brisbane). He is co-author of *Education for the 21st Century* (Routledge, 1993), author of *The Foresight Principle — Cultural Recovery in the 21st Century* (Praeger 1995) editor of *New Thinking for a New Millennium* (Routledge 1996) and co-editor of the *World Yearbook of Education 1998: Futures Education* (Kogan Page, London 1998). He has published a series of futures resource books and an edited volume of essays: *Futures for the Third Millennium: Enabling the Forward View* (Prospect, Sydney, 1999) as well as a collection of papers by various authors from *The ABN Report* entitled: *Gone Today, Here Tomorrow: Millennium Previews* (Prospect, Sydney, 2000). Several of these publications have been revised and re-issued on a series of CD-ROMs, beginning with the *Knowledge Base of Futures Studies vols 1–4, Millennium Edition* (Foresight International, 2001). His latest book is *Futures Beyond Dystopia: Creating Social Foresight* (Routledge, London, 2004).

His research interests include: the use of futures concepts and methods in education, business and government; the development of critical futures methodologies; the knowledge base of futures studies; and the social implementation of foresight. With the support of the Pratt Foundation he initiated a research program to support the development of a national foresight strategy for Australia**.** His main aim is to facilitate the emergence of a wise culture that is not merely driven by the past but is also responsive to the emerging near-future context. The latter, he believes, is far more challenging than is commonly realised. There are, however, many innovative paths out of the trap that humanity has collectively created for itself.

Since 2000, he has applied integral thinking, integral methods, to futures studies and applied foresight, and increasingly explored the potential (and the reality) of post-conventional approaches to futures generally. Two of his most recent projects are the *Knowledge Base of Futures Studies: Professional Edition* and *Towards a Wise Culture: Four 'Classic' Futures Texts*, both available from Foresight International on CD-ROM.

Contact information: PO Box 793, Indooroopilly, Queensland 4068, Australia. Web: http://www.foresightinternational.com.au

Marcus Bussey

Marcus Bussey began teaching the classical guitar in 1975. In 1983 he won the Dwight Prize for academic excellence at the University of Melbourne. Since then he has taught in a wide variety of contexts from large city-based grammar schools and various state schools through to small city and country community schools. He is currently an advisor for Alcheringa Montessori College, Buderim, Queensland and is on the state board of the Queensland Suzuki Music Teachers Association. He has also contributed to the development of the Neohumanist Education Diploma Programme (www.gurukul.edu). His focus throughout has been on generating learning communities via a wide range of cultural and creative curricula experiences that involve the whole family and build on the teacher's direct commitment to their own creative and spiritual fulfilment. It is out of this work that he began his current task of seeking to reframe critical pedagogy as an expanded form of neohumanistic, futures oriented learning.

Marcus began writing about his experiences as an educator in 1995 and immediately linked up with the work of futurists Richard Slaughter and Sohail Inayatullah. He has published regularly over the years with over 30 journal articles, book chapters and encyclopaedia entries to his credit. He is currently working on his PhD at the University of the Sunshine Coast, Queensland, Australia, where he also teaches. His topic is the futures of critical pedagogy.

Marcus can be contacted at MBussey@usc.edu.au.

Preface and acknowledgements

The origins of this book lie in two earlier works:

- *Futures Tools and Techniques*, and
- *Futures Concepts and Powerful Ideas*.

The former drew on some key concepts that were initially explored in my PhD and then brought together for the first time in an 80-page booklet prepared for a short course held at the University of Lancaster, UK, in 1986.[1] The booklet was subsequently revised and expanded in 1998 and again in 2000. The latter originated in a session at a World Futures Studies Conference in Budapest in 1991 when, following a particularly well-received session, I was asked for more copies of overhead slides and their associated notes than I could reasonably supply. These were eventually collected together and published, with a range of related material, by the Futures Studies Center, Melbourne.

I always saw these books as the two halves of what I referred to as a 'futures smorgasbord'. What I meant by that term was that, taken together, here was a variety of practical and conceptual starting points for futures understanding, enquiry and action. They were particularly suited to use in schools and, indeed, over the years many teachers around the world have taken sections of these books and woven them into teaching programs.

For many years I have believed that the starting points for futures enquiry are really very straightforward and accessible. If we could resource teachers and schools with some of this material it would be much easier for children and young people to acquire the beginnings of a futures discourse. Ideally the latter would grow and develop over time and help to raise the level of futures literacy generally. That this has not yet happened on any wide scale is by no means a result of the paucity of the material or of the potential of futures studies, or applied foresight. Rather, it springs from the fact that the educational significance of futures thinking has still not been widely recognised, despite all the research and other evidence that clearly demonstrates its value.[2] Meanwhile, successive generations continue to inherit an ever more dangerously over-extended world filled both with new dimensions of hazard as well as quite new opportunities.[3]

As time went by, a further issue arose. I had moved on to other concerns (such as strategic foresight and integral futures) that took me far beyond my initial focus on education.[4] As a result some (but by no means all) of the material in these books gradually became dated. From time to time I would think about 'refreshing' them, but I also felt that the results would be improved if a 'fresh mind' were to be involved. And there the matter rested for several years. A number of avenues were explored but each time they ended up leading nowhere.

I was close to abandoning the project when a colleague suggested that I contact Marcus Bussey. I'd known Marcus for some years, respected his work and even published some of it in a special issue of *Futures*.[5] When I broached the subject with him it both appealed and also came at a time when he was able to fit it into his

schedule. So in late 2004 we met, discussed the project, developed a modus operandi and started work.

I am delighted with the result. Marcus had a free hand to go through the original material, select what he considered the most valuable and also to add in new material that had become available in the interim. He also sought out new textual and visual material. I am particularly grateful to his parents, Vic and Marjorie Bussey, for some excellent new line drawings produced especially for this publication.

I also want to thank Susan Leggett who inherited a manuscript with various loose ends and turned it into a polished and consistent product. Finally I want to thank Kuo-hua Chen and Chien-fu Chen, both from Tamkang University, Taiwain, for taking this project on its final stage. As well as publishing this English version they also undertook to produce a Chinese version.

I hope that this new, revised, edition will prove useful to a new generation of teachers around the world. They, in turn, will help their students locate their own sources of inspiration and power within the futures domain and, in so doing, develop futures understanding, literacy and capability to the new levels required by an ever more challenging world.

The title of the book, *Futures Thinking for Social Foresight*, suggests that, in coming to grips with the issues and themes presented here, the task of moving from societies that are driven by the past toward 'unknown' — but increasingly hazardous — futures can be made easier. The task for everyone is that of enhancing individual foresight and using this as a stepping stone to create social foresight.[6] The latter will become increasingly valuable as the stakes for human civilisation continue to grow.

Richard A Slaughter
Foresight International
Brisbane

October 2005

Notes

1. Slaughter, R. A. (1982), *Critical Futures Study and Curriculum Renewal*, PhD, University of Lancaster, UK.
2. Gidley, J., Bateman D., & Smith, C. (2004), Futures in Education: Principles, Practice and Potential, *AFI Monograph 5*, Swinburne, Melbourne.
3. Beck, U. (1999), *World Risk Society*, Polity Press, London.
4. Slaughter, R. A. (2004), *Futures Beyond Dystopia: Creating Social Foresight*, Routledge, London.
5. Bussey, M. (2002), From change to progress: critical spirituality and the futures of futures studies, pp 303–316 in R. Slaughter (ed.), Futures of Futures Studies, special issue of *Futures*, 34(3 and 4), Elsevier, Oxford, UK.
6. Australian Foresight Institute, (various authors) *Monograph Series 1–10*, 2003-2005. For more information on the monographs see: http://www.swin.edu.au/afi
7. For information on social foresight see: http://www.foresightinternational.com.au

How to use this book

This publication seeks to both provide teachers and students with an overview of futures studies while also acting as a source book for teachers and others looking for activities and material that will help to develop futures literacy in their students. The long term goal is that of creating social foresight. To these ends it offers a tapestry of sections that weave patterns via abstract thought and practical action.

Readers who work through the text in a linear fashion will experience the field of futures studies unfolding before them. Users can also 'dip into' the text at any point. The latter is as uncluttered and free of jargon as we could make it. At the same time a capacity for deep reflection will certainly assist a fuller understanding of the richness of the material presented here. It has been extensively trialled and tested over an extended period. We have inserted a series of reflections into the text. These sections deal with some of the deeper concepts and insights that underpin the practice of futures. They can be returned to throughout the book as the reader's understanding deepens.

For the experienced futures educator the text is a source of material designed for tutorials and classroom settings. Most sections come with questions and activities but are open ended enough for creative engagement on the part of teachers and students. This openness is central to futures thinking. Furthermore, for this material to be effective it needs to be 'owned'. This ownership is activated through engaging with the material and using it creatively in specific learning contexts.

Introduction

Futures studies (FS) is a fairly new and certainly an exciting development in the human and social sciences. This text is a synthesis of some of the most useful features of this new practice for teachers, students and practitioners. It is designed to offer a way through the forest of futures practice. Through this journey the aim is to develop a range of futures literacies and methods which, when assembled, generate futures thinking and activate social foresight. We also hope that these materials will help empower users to design their own self-actualising pathways out of the industrial era.

At the outset it helps to view the terrain over which the reader will travel. FS is a practical activity grounded in a set of values as broad as its interests. As a practice, it consists of a range of techniques and methods that enhance the user's own foresight capacities (among others) and raise them to new levels. At the same time FS enables us to both think about, and respond to, the future more freely than perhaps any other academic or applied discipline. As such, FS draws both on exterior and interior capacities, and the latter are a key focus of this text.

Conventional futures work tends to emphasise pragmatic, empirical and strategic concerns. We attempt to balance this by also exploring concepts and processes that engage people's symbolic and cultural capacities – their ability to make, and re-make, meaning. The use of these capacities helps to facilitate deeper, more creative and inclusive responses. This approach builds on the integral awareness that individuals, and the societies they inhabit, are mediated by dynamic contested fields in which external forces such as policy, technology and economics are mediated by equally powerful internal processes relating to ideology, world view, desire, fear and hope.

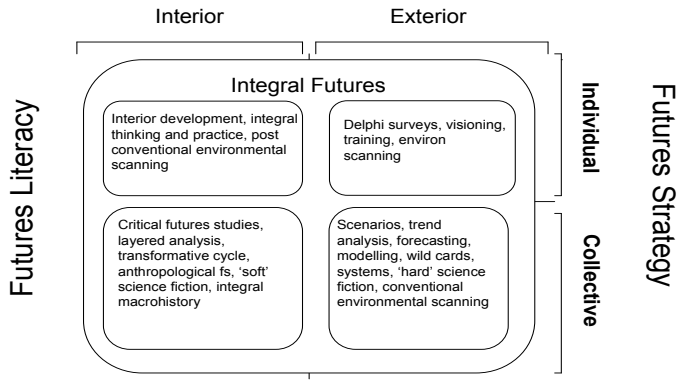


Figure 1.1 Literacy, strategy and methodologies

Figure 1.1 summarises some aspects of this approach, and figure 1.2 shows one way of illustrating how each area folds one into the other in a constantly turning integral loop. This process offers us new insights into how the social and individual worlds are constructed, maintained and transformed. Futures literacy refers to the development of values, attitudes and concepts that allow us to reflect and act beyond habit and fear. Social foresight, working in the external strategic field of futures, is anchored in these literacies and their application to present dilemmas. The following sections also offer many practical examples that provide 'anchors in reality' for teachers and students alike.

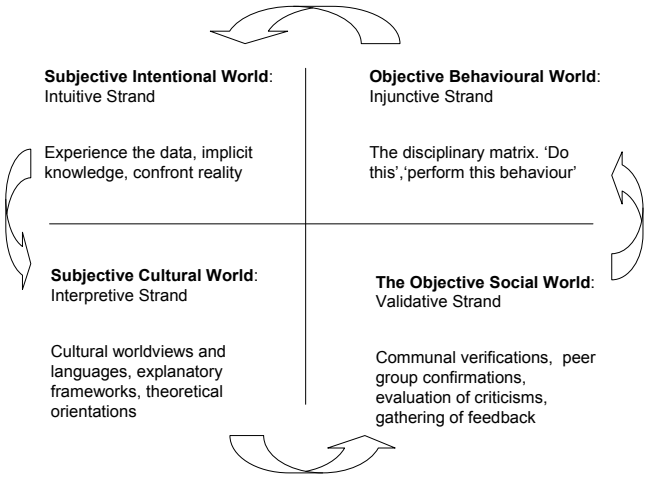


Figure 1.2 An integral cycle of knowledge

Effective futures work engages both the external and internal dimensions of the integral loop. This text offers a range of tools, concepts and processes that, when internalised and applied, nourish futures literacy. The latter is a necessary precursor to social foresight and, together, they constitute the twin poles of applied futures.

PART 1: MAPPING FUTURES STUDIES — KEY CONCEPTS

1.1 Futures literacy and social foresight

Futures study (FS) is a practical activity that engages with issues of concern to its practitioners. Working towards the future is something we all consciously or unconsciously do everyday. Working with the future is a new development and requires a specific range of literacies (concepts, tools and techniques) that enable us to engage effectively with the social processes that operate beneath the surface of a deceptively stable daily reality. In this way the future acts as a principle of present action.

FS is therefore about the present. This present is reinvented in the light of possible trajectories that may occur as a result of social, technological, environmental, economic and cultural change. When we examine the present in the light of probable, possible, and preferable futures we open ourselves to alternatives to the business as usual, flatland future we tend to accept as inevitable. This opening up takes the form of social foresight.

When we engage futures literacies in anticipatory processes we activate social foresight. This foresight embraces the integral nature of consciousness and thus allows for individual, cultural, social and environmental factors to come together in a set of relationships and contexts that approximate our human 'reality'. For futures work to be effective it needs this breadth. Furthermore, with breadth comes a sense of ownership and responsibility for the results of our activities on this planet; this sense of responsibility is appropriate when humanity is facing some seemingly intractable problems. Social foresight enables us to rethink our situation and empowers us to act in the light of the future, for the future.

1.2 What is futures study?

One definition of FS is that it is 'the forward-looking equivalent to history'. History concerns origins, where we have collectively 'come from'. By contrast, futures draws on this and other background material to pose questions about where we would like to go and what we may wish to achieve. Whereas history utilises artefacts, written records, landscapes and buildings to construct interpretations of the past, futures study uses images, values, meanings and a wide range of methods to explore, anticipate and negotiate future possibilities.

As human projects, history and futures both rely on our ability to move out of the present and construct or reconstruct some of the main features of other times and other places. History may appear easier to deal with because it is littered with physical evidence and thus, in some ways, more immediate. But the drawback is that we cannot change history. It can be reinterpreted but not altered.

By contrast the very openness of the future makes it of great interest, partly because we can exert some influence over the way it unfolds and enters the present. Indeed, to act effectively in the present we need to know that our plans, purposes, goals and intentions can be developed and enacted in the practical and imaginative 'space' that the future provides. Without the latter we could not act at all. For this reason the future has sometimes been called 'a principle of present action'.

Futures study reveals *alternatives*, which give rise to *choices*. Depending upon values, priorities, commitments, such choices lead in turn to processes of *decision-making*.

Decisions about futures are being taken all the time on the basis of forecasts and projections about what the future may be like. But forecasts are often no more than educated guesses dressed up with impressive-sounding arguments, graphs, statistics and eye-catching graphics. So it is well to remember that beneath any 'hard' quantitative data lie many 'soft' or qualitative assumptions. For example, the decision to develop a new weapon system, power station or airport involves judgements of value, social usefulness and purpose. It is important to understand that *personal choices* and *social choices* both reflect futures thinking. One does not have to be an expert in order to take part in making such decisions.

Here are some starting points for thinking about futures.

1. Have students imagine they are going on an overseas trip. What preparations are needed? In what ways is this process similar to those involved in curriculum planning, course development, teaching and learning?

2. Outline three key events in the past that, had they turned out differently, would have led to a very different present from our own (e.g. your birthday, World War Two, the discovery of penicillin).

3. Have students describe some of the ways people move beyond the present to explore different times and different places (e.g. novels, TV, dreams).

4. Have students locate some official forecasts (e.g. in relation to population, energy supply, resources, the environment, defence, the economy, etc.) and compare them with (a) the views of opponents and (b) your own ideas.

1.3 How can we study futures?

In Western culture we still do not use many substantive notions of futures, despite much popular 'window dressing' to the contrary. Instead, we seem preoccupied with the past and present. Given the perilous state of the world system this is a strange omission indeed. The future is largely seen as a 'blank space' or, if it is considered at all, it is populated by superficially compelling, but trite, images from the mass media. If you ask most people what they understand by the term 'futures' they will often mention prediction or the futures market. Underlying these stereotypes is a profound lack of understanding about futures and how they may be studied. Many assume that, since the future has not yet happened, it cannot be studied. But nothing could be further from the truth

The future can be studied in many ways, but it cannot be predicted. If we were able to accurately predict, this would cancel our ability to create the future and to shape our lives, our societies. We would be locked into a deterministic system — one in which we would feel passive and unable to engage with the future at all. In fact, any and all foreknowledge provides us with material that can be used to confirm or change what might otherwise occur.

Many futurists study change, and draw deeply on others who do so. Yet it tends to be forgotten that there are long-lasting continuities in human lives and cultures. Those factors with a long past (languages, myths, human needs, ecological principles, etc.) are also very likely to have a long future. An awareness of continuities with the past therefore provides us with some of the knowledge we need to understand futures.

We also know a great deal about many things that are changing. There are changes occurring in cultures, economies, environments, organisations, languages and individuals, to name but a few. In each and every case communities of researchers, scholars and others have developed to study a huge variety of specific change processes. Since it is impossible for anyone to study everything, futurists often tend to skim, or critically appraise, the work of many other specialists. In fact what is termed 'environmental scanning' provides futurists with some of the empirical foundations for their speculations and analyses, or, to put it differently, *anchors in reality*. This is one way that futures work can be seen to involve highly disciplined enquiry.

Using material from the careful assessment of continuity and change, futurists can begin to construct pictures or outlines of future alternatives. In many cases these 'pictures' are in the form of scenarios. But they may also appear as arguments, novels or TV programs. Finally, when a range of alternatives has been laid out, options and choices can be discussed.

The upshot of this kind of work is, quite simply, *an increase in freedom*. It is freedom to choose, to select, to judge what is appropriate and what is not. In other words, the human capacity for foresight that is powerfully applied in FS has adaptive value. Humans, therefore, are not stranded, willy-nilly, in a process that they can neither see nor respond to. On the contrary. The possession of a standard human brain/mind system means that we can roam at will in the past, present and future. So instead of being dragged, or pushed, toward a pre-determined future, we can say that, in some senses, the future is ours to make or ours to spoil.

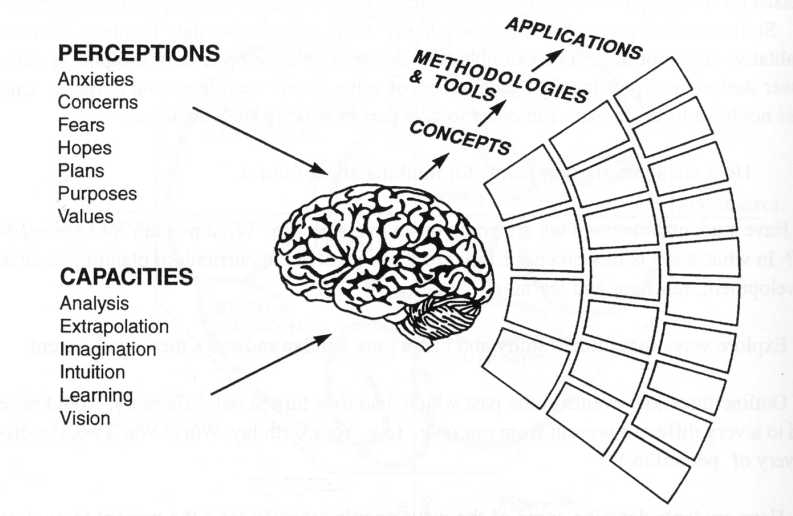


Figure 1.3 Futures study as an emergent property of the human brain mind system

1. Have students consider figure 1.3. What features of the brain/mind system make futures thinking possible? How are these capacities used?

2. Explore some key futures concepts and methods. In what ways can these be used in practical situations (e.g. planning).

3. Have students consider the four-step futures process outlined. Where can it be seen operating?

1.4 Why study the future?

What do we do when we have realised our dreams, when our ambitions have been achieved and our goals reached? This was a question before the affluent Western world at the beginning of the new millennium. Yet there was also a realisation that in having gained what so many appeared to desire, something may also have been lost. Some of the material gains had unforeseen costs. Finally, not everyone had benefited equally. There was, and remains, a growing disquiet when we realise that many people, ecosystems and species have paid for this prosperity. Furthermore, this payment is dispersed over time and space and includes peoples and places in the past, the present and the future.

So a key question before us concerns what to ask for, strive for, and hope for next. The question is posed at a time when, as noted, compelling images of futures are few and far between. It might appear that our long-term social imaging capacity is failing at the very time when it is needed most. Yet this is partly a question of perspective. It turns on the fact that we already live in a period that incorporates many of the features that earlier generations thought of as being 'in the future'. We live in our ancestors' future. Men have walked on the moon. Human hearts are routinely transplanted. We can speak to each other across the entire world and photograph distant planets. But the technical achievements of yesterday soon lose their power to uplift and inspire. Perhaps we should reflect on this hint that today's marvels may not be all they are advertised to be.

Two contradictory factors can be observed. On the one hand, there has been a loss of confidence about our ability to solve major problems and to survive in a world severely compromised by human activity. On the other hand, we have already achieved many of the things that people worked toward when they were only dreams and visions located 'in the future.' We live longer, travel further, and know more than ever before. But the social capacity to imagine new and different futures has clearly declined. What can we do about this? Well, there are a number of options.

First, we can recognise that this apparent exhaustion of imaging capacity is only temporary. The human and cultural sources of images have certainly not been lost. In some ways they are stronger and more accessible than ever before (see 3.16 & 4.7). While many have been relegated to the cultural margins, they can be reclaimed and utilised. Second, we can re-evaluate counter-traditions that incorporate visionary elements that breach the bounds of everyday assumptions and practices. Third, it is entirely reasonable to suggest that a great deal more effort be devoted to scanning and exploring futures. Yet to achieve this will necessitate a fundamental shift of perception, or several. The main shift is primarily one that re-values the future; that sees it not as an abstraction or an empty space but as a principle of present action.

1. Read the extract 'A letter to the future' (see box). Discuss its features and then ask students to write their own letter to the future.

A Letter to the Future

Greetings from Johannes Eckhart, Dominican friar, Master of Theology, preacher, and lover of God the father, Christ, His son, and the Holiness of the Spirit; Greetings I give to you all on whom my eyes will never rest as they will long since have shut; yet still I send my greetings to you all, a Humanity so distant I cannot begin to imagine the face of things, but I can assume, and dearly hope, we still share the same Earth beneath our feet, the same sun, moon and celestial objects above us, the same air and water, and the same aspirations, a desire for happiness, a love for our fellows and an abiding sense of the graciousness of God, in Whom all things reside. To you all I send my salutations.

Why do I write? An interesting question. I write to somehow free myself from the confusion of my world; I write to speak of things about which there is no confusion.

This year is the thirteen hundredth and fourth year since our Saviour and Lord, the Christ, came amongst a confused and angry humanity to speak His gospel of love, surrender and salvation. His deeds and words echo in my inner chambers still, as if they were yesterday. And we are still confused, we struggle and fight, labour and lust…and for what? Our pleasure or God's?

Now I shall tell you something I have never spoken of before. God enjoys him/herself. In the same enjoyment in which God enjoys him/herself, s/he enjoys all creatures. God finds joy and rapture in us!

I sit here, quill in hand, a little German friar in a cold cell and think on my brothers and sisters throughout Christendom labouring at their prayers, singing Matins, performing all the divine works of their holy mission and I realize that they have lost sight of this fact. They forget that they are not singing and sweating to save their souls, or those of their wealthy patron's, from the agonies of hell; they are singing and sweating to please our Lord. Instead of criticizing me for questioning, they should be themselves as they were born to be and please Him. Remember…

All things are pure and noble in God. Every single creature is full of God and is a book about God. Every creature is a word of God. If I spent enough time with the tiniest creature – even a caterpillar – I would never have to prepare a sermon. So full of God is every creature.

I would know if you of the future have seen this so. In seeking to save their souls have people forgotten the Saviour? Are there those who while away their time in idleness or seek to take what is not theirs? Is the blindness of my day still rooted in the future? If so, tell them…

Earth cannot escape heaven, flee it by going up, or flee it by going down, heaven still invades the earth, energizes it, makes it sacred.

Sections in italics are Eckhart's own words.
The rest is an imaginative reconstruction written by Marcus Bussey

2. Have students look at figures 1.4 and 1.5. Discuss what utopia means (one meaning is 'no-where'). Looking at Morris' illustration, what kind of place is he trying to evoke? What might a modern day utopia look like?

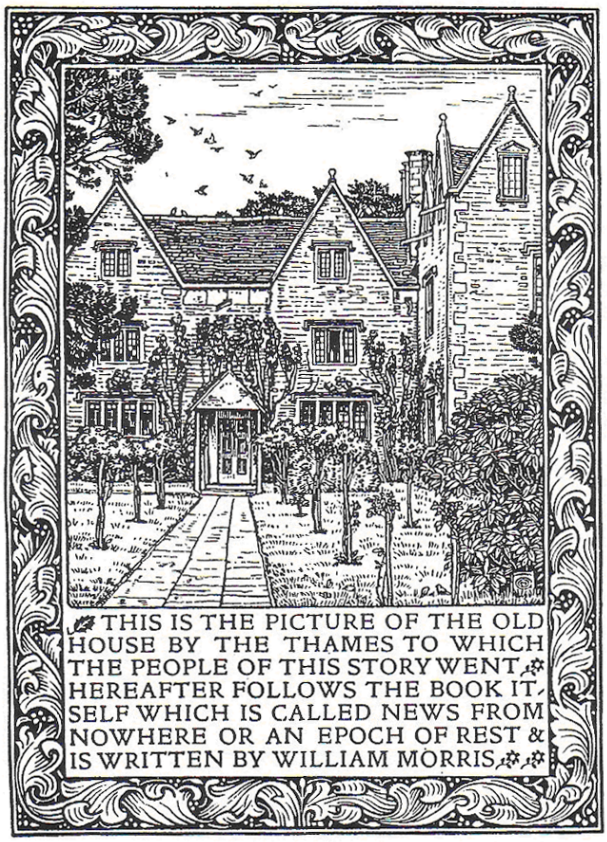


Figure 1.4 Utopia: Cover-piece for William Morris's *News from Nowhere*

William Morris and utopia

William Morris lived during the first phase of the industrial revolution. Everywhere he saw poverty, violence and greed. He started to think about how society might be and so he wrote a famous story called *News from Nowhere* in which he built an alternative vision of society. The story goes like this: one night he fell asleep and when he woke he found that everything ugly had disappeared and that everyone had their basic needs met. There was no need for money and centralised governments were a thing of the past. In fact the houses of parliament were now used to store manure from neighbouring farms! His book's title is a pun on the meaning of the word utopia which was itself a pun. As he learns about this new world he realises that all aspects of life have changed, from industry and work to leisure and education. In this story he describes this future world as he would like to see it, as an ideal society. It is a work of hope.

Figure 1.5 William Morris and Utopia

1.5 Critical futures study

The term 'critical' is sometimes misunderstood. It does not simply mean 'to criticise', nor does it signify negative or derivative work. It is not threatening and should not be construed as such. Rather, it signifies a range of methods and tools through which we may 'probe beneath the surface' in order to realise the full potential of futures work.

Critical futures study recognises the *partiality* of traditions, cognitive frameworks and ways of knowing. It is therefore possible to *problematise* aspects of the existing social and economic order and to explore some of their contradictions. It is important to understand why this is a constructive enterprise.

An unproblematic status quo is one that is accepted without question; one that embodies certain quasi-transcendental goals that are to be progressively realised now and in the future. Such goals could include 'health, wealth and prosperity for all humankind'. Others might be 'racial equality', 'steady growth of GNP' and 'peaceful international relations'. These all sound wonderful. But, given the real substantive character of ideologies, assumptions, systems of exploitation, repression and destruction now in place, they are simply not realisable. Like the advertisements for women's fashions or impossibly perfect holidays they have little substance. Yet these glossy fantasies mystify whole populations.

The fact is that, regardless of its very many impressive achievements, late industrial culture is the most rapacious, self-centred and humanly destructive system yet seen upon the earth. It presides over numerous wars, the repressive exploitation of many Third World populations (and their underprivileged equivalents in Western countries) and the implacable destruction of the world's life-support systems. Given this context, conventional sanguine views of the future have a flat, unconvincing and, indeed, blatantly spurious quality. The standard Western worldview, far from leading to universal peace and prosperity, actually leads directly, as figure 1.6 shows, toward the abyss. It holds out no possibility whatsoever of sustainable human futures. Hence the importance of looking in depth at this culture and asking some penetrating questions. This is exactly what critical futures study attempts to do. Calling the bluff of comforting views of futures helps us to isolate aspects of our present culture and way of life that urgently require critical attention.

If it were *not* possible to interrogate the received wisdom of industrialised cultures, then we would most certainly be set on an irreversible path toward global catastrophe. If we were *not* able to understand our situation and act with informed foresight to avert the worst dangers, we would be committed to social learning by the crudest of experiences. We would have to experience catastrophe in order to prevent it. This is clearly unacceptable. The price of crisis learning, of what the systems modellers call 'overshoot and collapse', is becoming too great.

Critical futures study therefore aligns with other critical/interpretive initiatives in many fields to explore the possibility of productive discourse about the character, assumptions and likely directions embedded within the dominant culture. This is an important first step. But there is another. By carefully questioning what is too often taken for granted (such as continuous economic growth, or pollution as a mere 'externality') we can begin to distinguish new personal and social options. The key point is that this 'unfreezing' of the status quo has very many practical implications. Most centrally it provides us with new (or renewed) sources of freedom. It does so by

permitting a much wider variety of alternatives to be imagined and explored than are conceivable from within a dominant, catastrophe-prone paradigm.

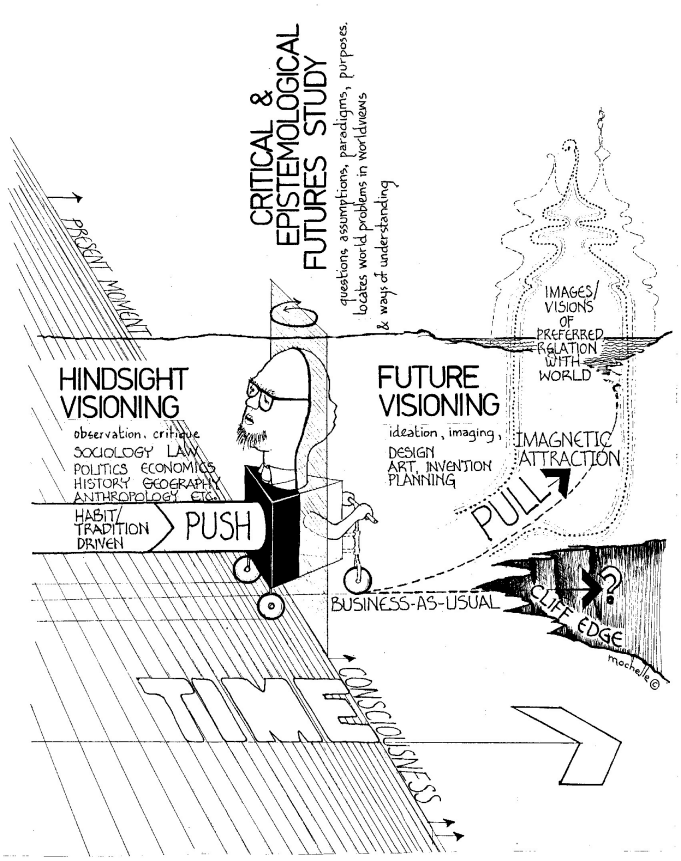


Figure 1.6 Hindsight visioning, future visioning and the role of critical futures study in developing steering capacity

Here, in bare outline, are some of the distinguishing features of this approach.

Discourse is not neutral. It is grounded in particular traditions and speech communities that cannot, by definition, be 'objective'. Inter-subjectivity is only partly 'rational'.

It is important to adopt a reflexive posture; that is, one in which the observer does not simply observe (speak, act, etc.) but is aware of the active, shaping character of these processes.

A presumption is made in favour of what Habermas calls 'the human emancipatory interest'; that, put simply, means the fundamental interest of all persons in freedom, self-constitution and unconstrained conditions of life.

It is suggested that 'progress' is no longer a term which can be used without irony. It has much less to do with tools, techniques and the external conditions of life than with (a) understanding the breakdown of a cultural synthesis at the

deeper levels and (b) recovering the ability to discern a basis for qualitatively different futures.

Technologies are not regarded merely as neutral tools but as *cultural processes* embodying specific ideological and social interests. The most notable features of technologies are often invisible and intangible (which is why they are missed by empiricist approaches).

Stories are regarded as powerful explanatory devices. They are not 'mere fiction' because they model human reality in useful ways. They can therefore be used to explore many aspects of human futures in ways not accessible to reason, analysis or the techniques of futures research (forecasting, etc.).

There is an explicit focus on the negotiation of meanings (such as work, leisure, defence, health, etc.)(see section 3.20 The re-negotiating of meanings). This gives access to some of the most important shaping processes involved in social and cultural change.

Some of the sources and manifestations of these ideas include the following:

- The interpretive perspective: critical practice, hermeneutics, the analysis of discourse, semiotics.
- The sociology of science, technology, their ideologies and forms of knowledge; science as a social product, technology as cultural text, etc.
- The critical theory of society; cognitive interests, Habermas's theory of communicative action. Foucault's critique and analysis of power.
- Speculative writing; stories which comment with awareness on past, present and possible futures.
- Environmental scanning and strategic foresight; tools of integral futures applied to persons, organisations and societies.
- The applications of futures perspectives in education; the shift from a reactive, past-oriented stance to a proactive and participatory future-oriented one.

To summarise: the careful use of these *cultural and symbolic* resources provides futures study and research with powerful new tools of understanding and analysis. For example, when critical and epistemological futures studies are linked to processes of futures visioning and design, or when they form part of the foundation for innovations in social policy, education, economics, governance, etc., they hold out the possibility of reclaiming a measure of 'steering capacity' for the society as a whole. This is the central point of figure 1.6. That is, to 'steer' away from the increasingly obvious abyss of a polluted, compromised world, and move decisively toward a very different set of outcomes.

1. Ask students to design a poster that illustrates some of the main themes of this discussion. Somehow the work needs to illustrate how reality is constructed in layers and that choice effectively opens up the future.

2. Students write two news reports from the year 2050. The report focuses on a current issue and presents the news from alternative possible outcomes.

Reflection 1

1.6 The metaproblem

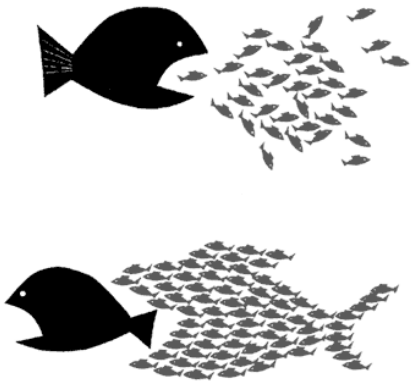


Figure 1.7 Collective action

The term metaproblem refers to a set of interlinked conditions that now constrain human activity and demand an immediate response. The use of a critical futures approach means that we can stop talking superficially about 'world problems' as if they were somehow separate from the systems of value and meaning that created them in the first place. We can, instead, focus on the underlying breakdowns of meaning that have occurred (and are occurring) within all cultures affected by industrialised values and assumptions. Once again, focusing on 'the breakdown' could be misconstrued if it were taken to be merely an attack on existing structures. However, this is not the case. It is a necessary stage of diagnosis. *Knowing what has gone wrong constitutes an important step in putting things right*. It is a ground-clearing exercise.

We are here concerned with constitutive (shaping) understandings that have shaped our views of the world at a very basic and powerful level; understandings that have been expressed through (and embodied in) our social, economic and technical systems. As such they have taken tangible form and led to many consequences. Some of the latter are already evident in our past and present. Others have already been displaced into the future and represent challenges we have created, but which future generations will have to grapple with. An example may be useful here.

Following the attacks on the Twin Towers on 11th September 2001, the US government implemented a policy of pre-emptive strikes against potentially threatening states and terror groups. This 'war on terror' has seen vast resources poured into military action against so called 'rogue states' who formed an 'axis of evil'. The military response to the vague

threat of terror completely overlooked the root causes of such activity: cultural abuse, poverty and rampant globalisation. This view in no way condones terror, rather it seeks to ask different questions and contextualise the civil and military responses in such a way that superficial reasoning and amorphous fear do not blind us to deeper realities.

From a non-critical viewpoint the 'war on terror' could be viewed as a prudent extension of US defence policy. Terrorists and those who support them should be brought to justice. The result is something different. Not only have many thousands of innocent people lost their lives in politically and culturally polarised aggression, but also resources that spring from human ingenuity and the biological productivity of the earth have been diverted to these wholly negative and destructive ends. In a more critical view, these resources were misused and wasted by the imperatives of institutionalised paranoia. From the point of view of the nuclear state (or military/industrial interests within the state) it appeared more 'rational' to turn the globe, the earth/moon system and indeed space, into one vast battlefield, against a phantom enemy, than to confront the human origins of its expansionism and fear. It should be obvious that viable futures simply cannot be derived from impulses and assumptions of this kind.

This example could be multiplied indefinitely: commercial whaling, toxic waste dumping, clear-felling of forests and other environmental insults, as well as some of the powerful new technologies now in the pipeline, make it quite clear that, left to their own devices, powerful groups with inadequate ethics constitute a threat to everyone. Such examples show why a critical futures approach is essential. Without something along these lines it is all too easy to accept conventional assumptions and practices that later turn out to be disastrous.

Since we have two centuries of industrially-induced damage to consider, we can draw on that historical experience to identify several aspects of the metaproblem.

1. Dominance of instrumental reason (IR)

IR is a powerful cognitive system that matches means to assumed, or pre-given ends. It permits the construction of devices and machines of enormous power: computers, rockets, body-scanners, automobiles and toasters. The physical infrastructure of our civilisation is dependent upon it. So the point is not to eliminate IR. We could no longer survive without it.

The difficulty is that the way of viewing the world that IR encourages contains certain defects and is wholly inadequate for other non-instrumental purposes. One defect is that it contains no notion of limits. Another is that it provides no rationale for seeing the world as other than a machine, or as a set of inert resources. Since IR is a system that only addresses the physical 'layer' of the world, it cannot supply useful insights about ethics, meanings or purposes. Hence, unless it is limited by some other (higher) principle, its applications can become dangerously over-extended.

Many would now argue that that is exactly what has happened in Western culture. Taken alone, IR is a recipe for disaster.

2. Reductionism and loss of the transcendent

Reductionism is the tendency to take something with a diverse range of qualities and to disregard many of them. The standard ploy of reductionism is to say that if something cannot be measured, it does not exist. Economics has fallen into just this trap such that, for example, housework is literally regarded as being without value. Similarly, markets operate wholly on the basis of past experience. Leaving aside the 'futures market' (a risky economic game of chance) markets have no methods by which to exercise prudence or foresight. They are crude mechanisms that use signals derived from past and present to govern their operations. As such they effectively make the future vanish. They reduce temporality to a narrow band of self-interest in the here-and-now. This is ethical, ecological and ontological nonsense.

Reductionism is endemic in industrialised cultures. It says of phenomena 'this is only ...' and then picks out some convenient characteristic. Hence, ecosystems basically provide 'services'. People are simply 'consumers' or 'human resources'. Religion is either useless or mere 'therapy'. The possibility that there could be spiritual or transcendent realities of a completely different order is simply overlooked. So far as IR is concerned ethics, spirituality and futures all have less reality than ghosts. This tells us that something vital is certainly missing.

3. Science and technology for irrational ends

It was Lewis Mumford who once said of modern weapons systems that the means were rational, but the ends were entirely mad. He saw, as many others have, that once certain technical means become powerful enough, they become ends in their own right. This can be seen with modern information systems which are expanding very rapidly not out of some clearly defined need or purpose, but from of the compulsive dynamism associated with competing capitalist economies and enterprises.

The present period has even been called 'the information age'. But it is by no means certain that this label fits. Information as such is not valuable. Nor is it to be confused with knowledge or wisdom. The dynamics of expanding information systems are such as to lead toward ends that are largely unpredictable. In this process, means and ends tend to be confused. Similar criticisms can be made of nanotechnology. Here the threat of competition is used to fuel technical developments. But again, the ends are problematic. If successful, nanotechnology could well undermine the physical integrity of our world. It's reasonable to conclude that such an end is indeed irrational.

The key point is this: *when powerful technologies are linked with inadequate worldviews or with primitive human impulses they become irredeemably subversive*. If science and technology are to help us move toward humanly viable futures they will need to be reconstructed on a different, non-instrumental basis. Hence, if there is a way out of the present cultural trap it will clearly not be via science and technology as they are presently constituted. Perhaps the only lasting 'solutions' will be through the re-establishment of truly human ends which are expressions of the highest human motives and capacities (see section 3.21 Wisdom culture).

4. The de-sacralisation of nature

In most traditional cultures there are strong injunctions to protect nature from overexploitation. Such injunctions draw power from belief systems that endow the environment, and all that lives within it, with specific meanings. Many of these entities are sacred. That is, they occupy a higher level than that of mere use. They are not simply 'resources'. They may be worshipped, consulted, propitiated. They become sources of inspiration, metaphors, art — the substance of lived experience.

But Western cultures developed according to the very different dynamic provided by Bacon and Descartes. One discovered the scientific method (by which nature could be manipulated in order to yield up her secrets); the other asserted the fatal duality between persons and the world. Newton completed the pattern by characterising the world as a machine (even though he himself did not fully believe it). The result was a culture that felt itself to be separate from nature and also 'above' it. In this view, the Christian injunction to 'subdue the earth' could be completed. But at a heavy price. For the earlier cultures that animated nature (and made it in some sense holy, or at least possessing *intrinsic* value) knew, in some sense, what they were doing. They were protecting their own long-term well-being.

The de-sacralisation of nature meant that all the world and its creatures were no longer special, no longer protected. Whales could be rendered down into oil and corset stays, whole forests could be burned or wood-chipped, the atmosphere just became a sink for all the noxious products of industrial machine culture. The results are now obvious.

5. Having substituted for being

Depending upon how one views the world, commerce can be seen as a source of wealth or as a prolific source of misinformation about many things. Or both. Like instrumental rationality, commerce is not inherently 'bad'. But its overextension is certainly proving bad for the earth. The mercantile influence in modern cultures has become very powerful and, in order to sell goods, the advertising industry uses all the tricks and manipulations available to it.

This would not be a serious problem if there were countervailing forces to keep it in check. But there is plentiful evidence that commercial interests have overstepped the mark. They have marketed many items that were better not used, or at least, used in moderation (cigarettes, alcohol, fast cars). They have debased human sexual responses and promoted many forms of mystification and reality-avoidance. They have inscribed false, non-viable values upon the consciousness of entire populations. They support surrogate worlds (through mass entertainment) that constrain the human perceptual system in closed, unproductive loops, leading ever further from an active engagement with the world. They have promulgated the falsehood that possessions are superior to human qualities.

In a state of 'being' one rests secure in the richness of one's human and wider cultural inheritance. It is a poised and dignified state, not under threat. One lacks nothing essential because *all the essentials are already given*: life, consciousness, awareness. There is no inner scarcity. By contrast, the 'having' mode is permanently at risk. Needs multiply and become demands. The 'being' mode is fundamentally self-sufficient, but the 'having' mode begs to be supplied with an endless series of substitute

satisfactions. It is all to the good that these are substitutes, for this means that nothing will ever really satisfy. The state of 'having' requires an endless stream of merchandise. This suits those who supply the goods.

But there is a catch. This only works in a world that can sustain escalating demands. Ours cannot. Yet over six billion people are now exposed to this diminished ethic. It is a huge confidence trick. We presently use about forty percent of the land-based biomass of the earth. When our numbers double will we need eighty percent? What of the bald eagle then, or the platypus? What kind of world does the 'having' mode lead to?

It is a desperate and diminished one. This is not a viable path into the future.

****

In order to come to grips with the metaproblem we will need to discard some aspects of the Western worldview and replace them with more viable alternatives. To do so will mean intervening in processes of *cultural editing* and consciously drawing upon other, hitherto-marginalised, starting points, values and assumptions.

1. What does Ken Sprague's image, figure 1.7, above tell us about possible responses to the metaproblem?

2. List five alternative values to the five given above.

3. Find the Earth Charter on the Internet http://www.earthcharter.org/ Have students rework the charter to suit their local area.

1.7 Alternatives and choices

The major reason for studying futures is to understand the alternatives and choices that they pose. When we are 'locked into' a particular path of action, an event, or a consequence, it is simply too late to consider alternatives. Fortunately the future remains largely open, undetermined. It is this openness that makes it worth studying.

Part of the metaproblem is that often choices are obscured by present assumptions and values. This present blindness is a dimension of social ordering and is examined in more detail in section 2.13. Futurists seek to put the present into perspective in order to open up action to a range of alternatives. Thus Hazel Henderson wrote strongly in favour of US bilateral action after the attacks of 11th September 2001. She outlined a win-win possibility for the President and his advisors to follow. In doing this she was exploring choices beyond a reaction in kind and an escalation in violence. Sadly the moment was lost and alternatives foreclosed.

Alternatives and choices are two core concepts of the futures studies field. Let us look at them a bit more closely.

> Alternatives refer to the field of possible scenarios, events or lines of development.
>
> Choices refer to the process of selecting from a given field.

It follows that the wider the range of alternatives, the more choices. The latter do not stand alone, but are embedded in processes. This means that choices constantly need to be made while there is time to benefit from them. There is no point in preparing for an earthquake after the event. All the preparations must be carried out beforehand.

Choosing from alternatives is a bit like using a road map to get to a particular destination. In fact the driving metaphor usefully suggests that the view ahead is more important than the view back. This is something our culture has yet to learn, or re-learn. In general terms, the more time and effort invested in understanding and conceptualising alternatives, the richer are the available choices.

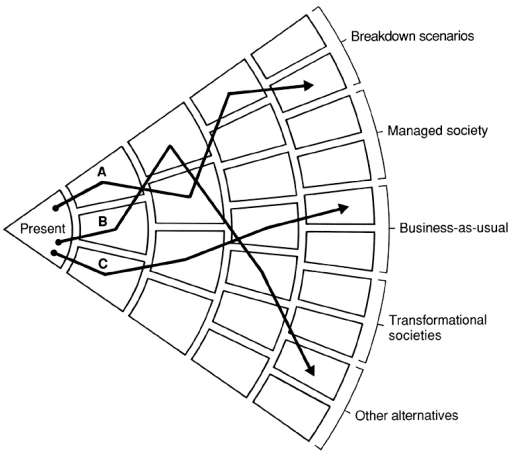


Figure 1.8 Divergent paths to alternative social futures

1. Have students discuss the dangers of driving by using the rear-view mirror. In what ways can the insights that arise be applied to social systems and organisations?

2. Have students look at figure 1.8 and explore the three tracks: A, B and C that lead to different social futures. Outline each path and possible explanations for the changes of course. What would be a preferred path toward one of these possible futures? How might moves in that direction be initiated?

3. Ask students to think of personal experiences where choices existed up to a particular point in time — and then were lost. What does this suggest about social development?

4. Have students imagine that they are on a train going toward a particular future. What would happen to choices and alternatives if they could neither get off the train nor control it in any way? How does this differ from a feeling of powerlessness in daily life? Is this the same as fatalism?

5. Let students read Hazel Henderson's advice to President Bush following the 11th September, 2001 terror attacks in the United States (see: Mr. Bush's Win-Win Option, www.hazelhenderson.com).[1] What alternatives to 'an eye for an eye' response is she recommending? What kind of future might have emerged if the United States leadership had followed her advice?

1.8 Continuity and change

Many popular futurists place great emphasis on change, and it is certainly true that the change processes we are living through are altering the basic conditions of life upon planet Earth. Tropical de-forestation, the depletion of resources, the rising concentrations of CO_2 in the atmosphere, nuclear weaponry and the proliferation of toxic substances all represent major threats to our future. Yet underlying these processes are powerful continuities that change only slowly, if at all. They include continuities of language, culture, tradition, scientific principles, natural laws and human needs. The tasks outlined below can help students to appreciate that in any situation there are elements of continuity *and* elements of change. If we acknowledge both it will be easier to avoid two sets of extreme responses: simple-minded conservatism on the one hand and naïve activism on the other.

The fact that Greek tragedies, Aesop's fables and the plays of Shakespeare speak directly to us suggests that in human terms not much has changed in a very long time. Our makeup as '*layered beings*' (body, mind, emotions and spirit) and the universal need for such things as food, shelter, warmth and companionship are not subject to rapid alteration. The *way* these features are expressed obviously changes from culture to culture and from time to time. What changes much more dramatically is *the context*. Think, for example, of technical innovation, the present social infrastructure (roads, TV, sanitation, telephones, etc.), the development of the global economy. Here are some starting points for examining continuity and change.

1. Have the group brainstorm some of the ideas that they associate with change. Begin to ask some key questions. What types of change are there? How does change occur? Can they distinguish between natural and human-initiated change?

2. Have the group break into small groups or pairs and to begin to discuss their responses to change. Which changes are seen as beneficial, and which as harmful? Why? Explore the range of different responses in the whole group.

3. Look at continuities in the same manner.

4. Use a framework similar to figure 2.17 to create a balance sheet of change and continuity. What conclusions can the whole group draw from the results of their work?

5. Have pairs of students interview some elderly people about their early lives. If students listen carefully elderly people will tell them clearly about some of the changes they have seen. Find a simple way to record the answers. Have students write a brief account of what they have learned with appropriate illustrations (including old photographs if possible). Mount an exhibition of their work.

6. Have students interview two people from different generations. Use the same key questions for each. Have them attempt to discover what they have in common and in what ways they differ.

7. Have students carry out a survey of changes in their local environment over the last 100 years. What changes would they expect in the next 100?

1.9 Looking back, looking around, looking forward

In order to look ahead intelligently we need to begin with the past and present and ask some simple questions, for example: where have we come from? where are we now? Clearly these lead on to: where are we going?

The look back is important because we cannot begin to grasp our future until we understand our history. Obviously, this means different things in different places. However, since the whole world is affected by industrialism, one place to start is with the onset of the industrial period. Another is with the pre-colonial time. How did people live in these earlier societies? Here is a starting point for historical research and for stories depicting life in earlier times.

As we move toward the present it is possible to trace the large movements and patterns in history. These include not merely the great events, such as wars and revolutions, but also key changes and transformations. Some headings for this work are given here. They include: technology, politics, values, religion, family, work and environment. Much historical knowledge can be summarised in this way.

Moving up to the present the focus shifts to what is happening now. By 'now' we designate our space in time. This is best understood as a period of years, not just a fleeting moment. So what characterises this time? Here is a chance for students to look around the contemporary world and pick out its main features. The categories given above can be used as starting points. But others can also be suggested. The point is to try to gain an overview of the current 'state of play' of human civilisation. Students will need careful guidance here because they are unlikely to have a balanced and broad view of the present.

Having derived an overview of past and present, we may now turn to the future. Students may want to know how anyone can study the future if it has not happened. It is then useful to compare the human brain/mind system with that of other animals. It becomes evident that we have a richly-endowed mental environment that permits us to look back, look around and also look forward. In crude terms, we have the necessary 'circuitry' (though simple analogies with computers should be avoided). Students can then consider just how it is that people look ahead. Here are some focus questions to guide their enquiries.

1. How do people prepare for a holiday overseas, or a trip into the bush? What kinds of problems do they face, and what kinds of questions do they therefore ask?

2. How do students go about selecting courses in either Years 11 and 12 or for college or university? What kinds of concerns do they have, and how are these dealt with?

3. How does a utility or a large company develop a strategy or a product for a market five years hence? If a road, airport or power station is to be built, what kinds of questions must be answered to know if the project makes sense? How is this information gained, and by whom?

4. What methods do futurists use to study futures? (See below, 4.16 Creating a guide to the next twenty years.)

5. What organisations are specifically devoted to looking ahead?

1.10 A class project: making futures files

In many schools textbooks are in short supply and few library books deal specifically with futures issues. Many that do are dated, inadequate and tend to place undue emphasis on scientific and technical developments. In order to gather material on contemporary trends, issues, events and future possibilities teachers and students can begin to collect their own resources. This process of environmental scanning is an important aspect of futures research and is treated in some detail in section 4.1. For the present we can begin this process with an exploration using print and electronic media.

Decide what you are interested in, how much time or money you can afford, and which sources you want to monitor. The Internet, newspapers and magazines are usually the cheapest. However, if your institution has access to CD ROMs or other data bases these can be invaluable. There are many sites now available on-line that provide regular updates simply by freely subscribing to their newsletters.

All materials should be screened for quality. A few top-quality items may be worth copying and distributing to students or placing on a futures bulletin board. Some items will need a file category and can be exhibited briefly or filed for future use. A considerable proportion of incoming material will be rejected according to criteria such as: quality, level and applicability. Students can be briefed to carry out much of this work themselves.

Decide how to store the material you collect. The simplest method is to take physical cuttings and/or photocopies. Where appropriate, a more sophisticated method is to scan in material or create your own electronic data base.

You will need to think about a classification system. How will you categorise and group your information? You will need to make choices around what issues, themes and applications are of interest. You will also need a number of sub-headings for each file. Depending on the system you are using it may be possible to cross-index entries. It is important to note that the filing system is *not* an end in itself, and should be kept simple and accessible. If you are using a paper-based system, the simplest way to organise it is in separate file folders. Here are some suggestions for using futures files.

1. Have students select a particular issue of interest. Try to obtain background material on this issue. Have them monitor specific sources for new information. When enough information has been collected, have them write a short account of the way the issue has developed and changed over a period of time.

2. Using the above as a basis, have students attempt to distinguish three or more different ways that a particular issue could develop or be resolved. Try to indicate clearly what actions would be needed for each scenario to take place.

3. Decide on a focus for a class project. Have students collect material on different aspects of the problem or issue. Mount the results as a visual display. If there is enough material a 'public enquiry' or dramatisation can be held in the classroom. It may be useful to invite representatives of different interests into the school to explain their point of view.

4. Have students collect a series of advertisements for a particular product or service. Help them to analyse the material carefully and look for hidden assumptions, drawbacks, implicit values and so on. If there is anything they object to, or wish to comment upon, help them write to the manufacturer stating their view clearly and asking for a reply.

1.11 Social learning and social innovations

Social learning is always necessary when a society must adapt to changing conditions. Yet there is always a time-lag between perception, decision-making and response. In the previous century we have seen some highly effective group learning and innovation in areas like medicine, computing and space exploration. Yet in the wider arenas of public policy such as health, economics and the environment, we have witnessed a string of long-term failures. These are multi-dimensional failures of understanding, imagination, vision and response. Today our societies, environments and children are more at risk from a variety of significant threats than ever before. Something is clearly very wrong with the social learning processes now in place. They are slow, ineffective and non-systemic.

The metaproblem has been defined above. It suggests that the present world has been shaped by ideologies and epistemologies that developed in an earlier, simpler age. Many of the standard assumptions, meanings and practices which came together in what we have called the 'industrial worldview' succeeded for a while in creating a civilisation of enormous wealth and technical power. But, at the same time, this 'cultural programming' had serious defects. These defects are now showing up in all the major systemic difficulties that we are experiencing.

Social learning can take place at a number of levels and in a number of ways (figure 1.9). *Surface learning* refers to changes that can take place regardless of underlying structures. *Organisational learning* refers to changes in patterns of human activity within organisations and groups. *Deep learning* refers to changes in cultural programming at the level of epistemologies, fundamental values and ways of knowing (see section 5.11: Two deep futures). Social learning can occur informally, through planned incrementalism or via what has been termed '*crisis learning*'. A further option is that of deliberate systemic change. However it is not an easy approach to implement at the social/cultural level because the degree of understanding, consensus and 'steering capacity' are seen as problematic in pluralistic contexts.

Surface learning	Bike helmets	Play groups
	Speed bumps	No-fault divorce
	Credit cards	Safe sex
Organisational learning	Health insurance	Strategic planning
	Ethical investing	Neighbourhood watch
	Futures workshops	Institutions of foresight
Deep learning	Universal suffrage	Intrinsic value
	Deep ecology	Post-materialist economics
	Intergenerational ethics	Critical and integral futures studies

Figure 1.9 Social innovations

The modern crisis of social learning is at least five-fold

The world is too complex to be understood easily. This makes it very hard to achieve consensus.

The cultural programming now in use is defective in certain major respects (manifested, for example, in short-termism and lack of foresight capability). This means that major social formations (politics, economics, commerce, education, entertainment) tend to incorporate redundant principles.

Social and political leaders seldom have access to the necessary tools, understandings or policy options. They are hamstrung by questionable pre-judgements, self-interest and by unregarded industrial-era imperatives.

There are too few forums where social learning can be facilitated. The official organs of the state that could facilitate social learning (the judiciary, the parliament, the church, etc.) are, by and large, still playing old games by old rules.

Diversionary 'surrogate worlds' increasingly intervene between individuals and the reality of the social/economic/ecological context in which they live. They have come to play a powerful role in shaping perceptions of the world. But they occupy the human nervous system in closed and frequently unproductive loops, exerting a mystificatory effect that is like a pervasive fog actively *obscuring* systemic problems.

Clearly there are no simple solutions to this mismatch between a deteriorating world picture and inadequate human responses. Yet social learning can be facilitated in many ways. Some possible responses include the following.

- Exposing the theoretical and applied defects of the industrial worldview.
- Paying careful attention to the critiques presented by marginal groups.
- Seeking social support for necessary innovations.

- Highlighting the critical role of social innovation and the role individuals can play in supporting it.
- Seeking to re-write rules, norms, procedures that are now unhelpful.
- Developing foresight capacity in many locations, networking these and linking with long-term, sustainable visions.
- Reconceptualising present dilemmas as opportunities for human and social inventiveness.
- Social learning is not something that can readily be imposed from above. It is more subtle and diffuse. However, some conditions for the acceptance of specific innovations may include the following.
- Broad agreement on the necessity of the change.
- Appropriateness of the change to perceived needs.
- Practicality of the change.

Social innovations are not limited to grandiose plans and schemes. The Institute for Social Inventions in London has collected and published many more modest examples in its *Encyclopaedia of Social Inventions*. The collective impact of many small innovative changes, as Ken Sprague's image in section 1.6 above reminds us, could be significant in the long term.

1. Have students visit sites like that of the Institute of Social Inventions at http://www.alberyfoundation.org/ Have them review the site for their local news paper or school newsletter.

2. Have students visit the site of Paul Ray and his team of Cultural Creatives at http://www.culturalcreatives.org/ Ask if they are cultural creatives. What are the main characteristics of such people? There is a book of this title. Consulting it can help them explore this question further.

Reflection 2

1.12 The critical futures toolbox

Sohail Inayatullah developed this concept in order to explain how critical futures studies provides a body of knowledge and experience that enables change agents to engage creatively with social processes. Futurists and others seeking to engage with culture and its underlying processes need to place the following five skills in their critical futures toolbox.

Deconstruction

This refers to the breaking apart of social 'texts' — movies, news commentaries, a worldview, a person, etc...— and asking what is visible and what is invisible. This practice asks who is privileged at the level of knowledge? Who gains economically and socially, and who looses?

> 1. Have the students choose a movie or news item to analyse. Have them deconstruct this 'text' using Inayatullah's questions. What do they find as a result of this process?
>
> 2. Have students design their own textual questionnaire and apply it to a cultural text of their choosing.

Genealogy

This refers to the history of a term, cultural practice, assumption or belief, through time. This practice asks, which discourses have been victorious in constituting the present? How have they travelled over time and at what points were they contested?

> 1. Have students choose a current issue and explore it over time. You might want to start by showing them how Michel Foucault analysed the modern prison or asylum.
>
> 2. Have students take two ideas that have an historical intersection, say democracy and women's suffrage. Have them map out each separately and then examine the point/s of intersection. This can be developed into a series of time-line-tangles. It helps us understand how social processes and ideas develop, and influence one another.

1. Distance

This practice renders the present remarkable by critically exploring alternatives to it in the form of scenarios and other imaginative engagements with possibility. This makes the present less natural, more strange and unfamiliar.

> 1. Have students break into two groups. One groups is to dramatise a visit to the present from the past, while the other is to do the same from the future.
>
> What differences and similarities appear as a result of this process?

2. Alternative pasts and futures

This practice looks at past and future as open and undefined. The past is read as an interpretive selection of human action. The future is

challenged and explored to reveal which images of the future maintain the present and which images undo the unity of the present.

1. Provide students with extracts from various books debating the idea of a 'black-arm-band' history. Compare this idea with the notion that history has been 'white-washed'.

2. Make lists of the images and 'facts' that support both views of the past.

3. How do these two images represent conflicting sets of values and beliefs?

3. Reordering knowledge

Like deconstruction and genealogy, the reordering of knowledge looks at categories and how they define and validate current social processes. Its particular focus is on categories of meaning such as 'civilisation' and 'stages of history' and how these order knowledge and give it legitimacy over other knowledge. It asks, how does the ordering of knowledge differ over civilisation, gender and time?

Figure 1.10 provides us with an image of two different worldviews. This image also offers a synthesis of these. Have students discuss how knowledge is ordered and privileged using this image as a starting point.

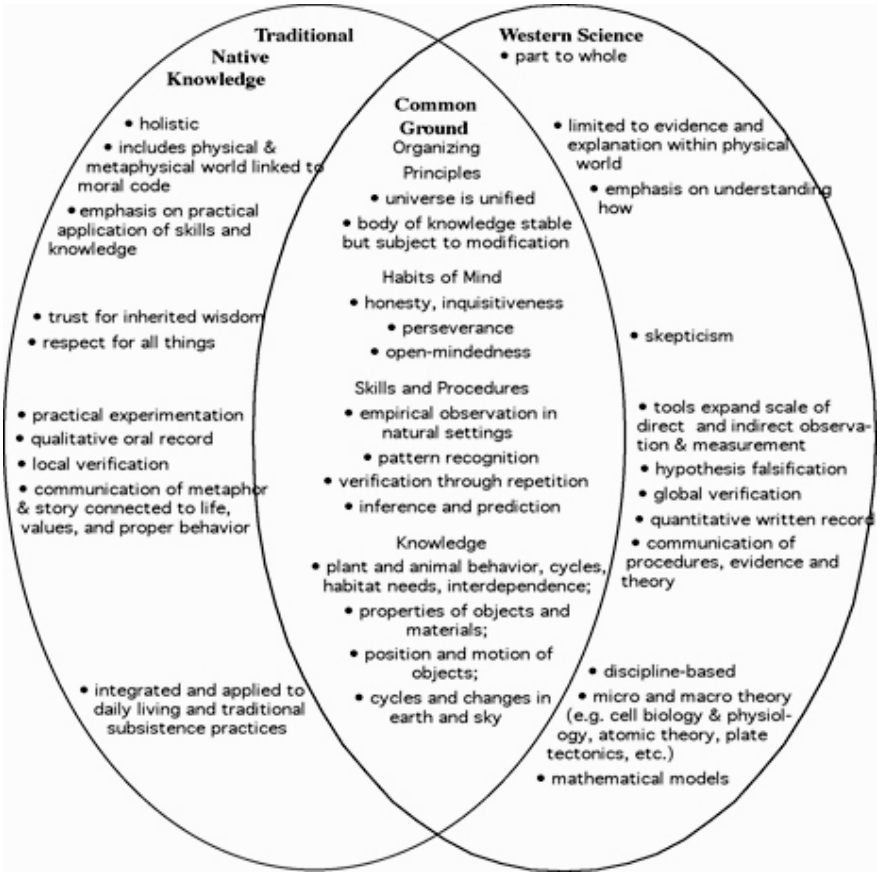


Figure 1.10 Ways of knowing

1. How might knowledge be ordered in order to develop a culture of Peace?

2. Look at the work on triple bottom line economics. How is economics being redefined here? Use figure 1.11 as a starting point for the discussion. Section 5.4 on constraining commerce offers further insights into this question.

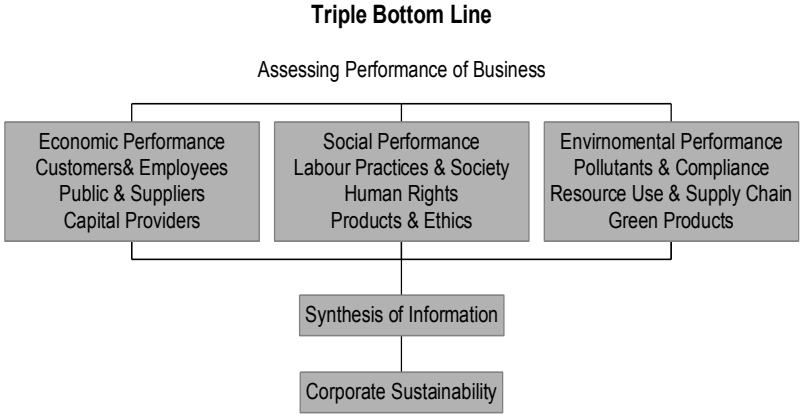


Figure 1.11 Triple bottom line

1.13 The futures field

The futures field is made up of a varied group of activities, interests and people. Many consider it a discipline. However, like other fields of knowledge (such as Geography, History and Engineering) it also embraces a range of disciplines and approaches. Figure 1.12 suggests that the field ranges from 'hard' (often quantitative) research work to 'soft' (qualitative) work. To put it differently, we can say that the field ranges from measurement through synthesis and criticism to values. Yet none of these categories are exclusive.

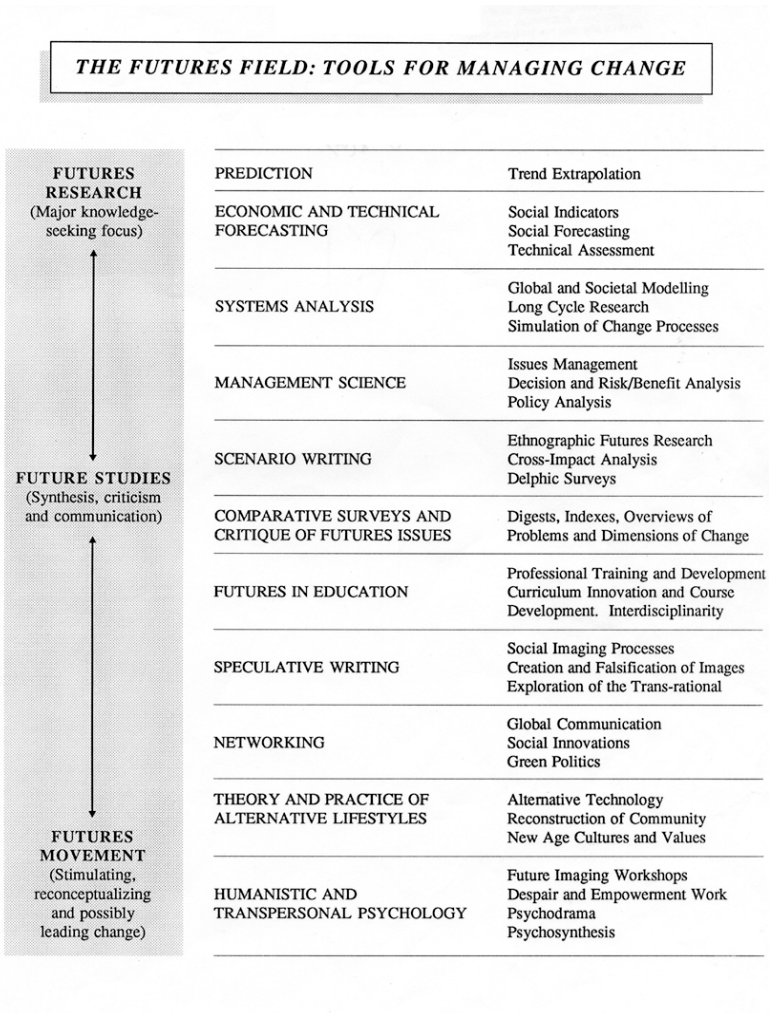


Figure 1.12 A spectrum of futures work

There are many kinds of futures research, by no means all of which are based on calculation. Similarly, futures studies embraces a broad range of activities. Futures education seems to us to fit best in this central synthesising area. The futures movements are easier to identify. They include the women's movement, the peace movement, the environmental movement and that which recognises the rights of future generations. Not all those involved in these areas would think of themselves as

futurists. But the result of long-term grassroots activity is to build the future 'from the ground up', and thus to invent it in the present.

Another way to look at futures work is to explore some of those elements that comprise its core, or knowledge base. These arguably provide the field with greater definition and intellectual coherence. They can be explored, studied, employed in research, used as tools in their own right, etc.

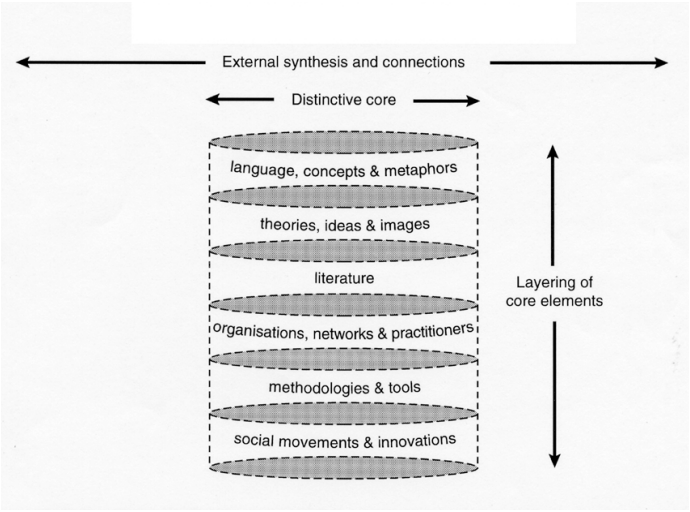


Figure 1.13 Model of the core of futures studies

So what are some of the key elements of futures studies? Here are some examples, followed by suggestions for follow-on work.

• Language, concepts and metaphors • Theories and ideas • Literature and data-bases • Methodologies and tools • Organisations, networks and contexts • Images and imaging processes • Social movements and social innovations • Practitioners

An article by David Hicks offers insights into how a futurist positions futures research as an 'issues based' discipline which is trans-disciplinary in nature and issues based in application.[2]

1. Have students make a list of five key futures concepts. Ask them to explain (a) what they mean; (b) why they are interesting or useful; and (c) to illustrate them graphically. What are some of the key ideas and theories in futures study? How can they be best understood and evaluated?

2. Ask students to select one or more items from the *Annotated Futures Bibliography* at www.foresightinternational.com.au, and to review it/them. How did the task affect their own views of futures? Have the class select the 'top three' items and summarise them in a short article.

3. Have students identify the products and services that are offered by several different futures organisations. Which of these do they consider to be the most useful, and why? Which are truly international in scope? What are the costs and benefits of membership?

4. Ask students to select a number of images of the future from magazines, advertising etc. Ask them to analyse the images. What messages about the future are being communicated? Are these valid or not? If not, why not?

5. Ask students to locate one or more futurists and/or some of their most accessible work. What are the central ideas involved? How appropriate are they? What evidence is there of success or failure in this area?

1.14 Layered futures

Like all fields of research and enquiry futures studies can be described from various positions. The following provides a simple typology. Such descriptions are useful for students as they allow them to see knowledge and meaning as layered. Encourage students to engage with this layered futures typology through the design of posters, the categorising of science fiction movies and the collecting of texts – from the media, comic books and novels – that illustrate the layers.

Pop futurism	Takes existing social relations as given; ideologically naive; provides unconscious support for status quo; futures constructed externally via science and technology, e.g. *Future Shock* (Toffler 1975).
Problem-focused futures study	Identifies problems and seeks to explore solutions at a superficial, taken-for-granted level, e.g. *The Limits to Growth* (Meadows1972).
Critical futures study	Comparative analysis of assumptions, pre-suppositions, paradigms; actively considers the influence of different cultural orientations and traditions of enquiry, e.g. *The Politics of the Solar Age* (Henderson 1988).
Epistemological futures study	Locates and problematises sources of 'problems' in worldviews and ways of knowing; sees 'solutions' as arising from deep-seated and unpredictable shifts at this level, e.g. *The Reenchantment of the World* (Berman 1981), *Eye to Eye: The Quest for the New Paradigm* (Wilber 1990) and *Futures Beyond Dystopia: Creating Social Foresight* (Slaughter 2004).

Figure 1.14 Levels of futures work

1.15 Questions about futures

Young people have many, many questions about futures. Some are given below. Generally, they are intensely interested in the forces, constraints and potentials that will affect the unfolding of their own lives. Hence, given the chance, most will participate fully in this kind of exercise.

Since many questions reveal fear, as well as hope, it is important that strategies for dealing with fears are readily available (section 4.3). Otherwise, 'looking ahead' can simply provide an opportunity for negative material to emerge and become exaggerated. We take the view that nearly all the problems facing humankind can be resolved in one way or another. Young people, however, tend to be heavily influenced by the mass media, with its powerful images of war, accident and disaster. So in dealing with young people's questions, one should be ready to deal with

negative material and also be open to the wide variety of 'good news' that is seldom presented by the commercial media.

I would like to know how we can stop pollution. If we can, I want to know!

Will there be a judgement day?

Will there be an end to war?

In the year 2020 what is in store for us? We really don't want to know because of fear. Who knows, anything could happen!

Will all the forests be destroyed?

Will people live on Mars?

Will there be families?

I am only 12 years of age and I would really like to grow up in a world of peace and happiness.

In the future will all of the trees and plants be gone?

Will pollution stop divers going under the sea?

How many animals will become extinct?

Will we still use pens and pencils?

What sort of jobs will we get in the future?

Will we still have cars? Will they still be run on leaded petrol or will they run on solar energy or some other fuel?

Will wars end?

Will I still be laughing when I'm 50?

Figure 1.15 Young people's concerns about the future

It has been said that 'the most important questions are those that are asked by intelligent 12-year-olds, but which, in receiving no answer, they then cease to ask'. Yet it seems to us that one of the most useful things a futures context supplies is exactly this: an opportunity to ask the big questions (as above: where have we come from; where are we now; where are we going?) and to keep asking them.

1. Have each student compile a list of their own personal questions.

2. Have a small group sort through them and rank them in order of interest.

3. Allow the class to vote for ten or twelve key questions. Students can then work in pairs or small groups to refine questions or groups of questions and to re-phrase them in terms of small-scale research tasks.

4. At this point the teacher can guide students toward the materials or resource persons that will be useful in developing the research topic. Once this has been done, the teacher can judge if the material in hand is suitable for being developed further, e.g. as a social innovation process (see section 1.9 above).

1.16 A map of knowledge

Implicit in all the above is the view that our ways of constructing the world are deeply implicated in our misuse of it and hence underlie all the threats to our common futures. So this section considers a simple model that holds out more optimistic alternatives.

What is a person?

If we were to describe a person we might say that he/she had long legs, a warm smile, dark hair and so on. We'd be aware of past contacts, personal habits and many other features. In other words, we tend to be most aware of a person's physical features and, to a lesser extent, the way these features are expressed. But the person we know is much more than a body. Much of what we think of as a person relates to the inner life of that person.

> 1. Have students design a 'whole person pie graph'. The sections and the relative ranking of them is a subjective thing but could include: the body, the mind, feelings, hobbies, culture, family and friends … (Hint: The graph could resemble the four quadrant model of Ken Wilber described in section 2.2.)

The inner life is made up of many elements. But Western culture has placed such great emphasis on empirical ways of knowing that it over-emphasises non-material phenomena. That is to say, it tends to overlook the inner life of persons, in favour of their looks, possessions and social position. Yet most people would probably admit to being aware of distinct areas or levels of inner life; for example, a mind, emotions and, perhaps, a spirit. According to most non-Western traditions it is a mistake to identify people exclusively with any level. Instead, individuals are seen as being grounded or embodied (literally) at the physical level and then, in some sense, extending up into other levels. Many have called the highest levels 'spiritual' and have suggested that here the concept of limits has no meaning. In other words, at the highest levels of human experience there appears to be no upper limit.

Ways of knowing

Figure 1.16 shows one simple map of knowledge. It distinguishes between the world of the senses (the body), the world of reason (the mind) and the world of contemplation (the spirit). Each realm, or level, has its own rules and procedures. Most importantly, *the rules that apply on a particular level cannot be transferred to another level.* This means that contemplation cannot be reduced to reason. Reason cannot be reduced to the senses. To put it differently, the truth of ideas cannot be assessed by the senses; the reality of direct perception cannot be assessed by reason. *To mistake a lower level for a higher one is to create a category error.*

One very major reason for the dilemmas now facing us is that Western culture has created a *double* category error. It has instituted powerful systems of belief and of practical applied power that elevate number and reason over direct perception. This is essentially why technical systems seem uncontrollable, why limits have become problematic and why human agency seems to be under permanent threat. *It cannot be over-emphasised that our technological culture has developed in ways which are largely uninformed by the highest perceptions available to the species.*

Much conflict and confusion has been created by failing to distinguish between different levels of existence. Numerous false solutions thrive on the resulting contradictions. For example, if someone is ill at ease, it is pointless for us to engage in an outer activity such as buying something, eating something or diverting ourselves by passively watching something. What we need to do is to attend to the inner life and find out how to manage the system from the highest level we can reach. Similarly, if we feel threatened by someone, we are missing the point if we respond by designing and building weapons systems to create a counter threat. These primitive responses developed during pre-history but they continue to threaten our present and future. They need to be understood, worked through and discarded, along with the insane weapons they have spawned.

	Realm	Method	Goal
Senses (Body)	Nature	Number	Empirical fact (science)
Reason (Mind)	History-Memory	Theory	Philosophical & psychological insight
Contemplation (Spirit)	Transcendence	Direct perception	Spiritual wisdom

After Wilber, K. Eye to Eye: The Quest for the New Paradigm*, Anchor, USA, 1989 & 1990*

Figure 1.16 Layered knowing

1. Have students ask ten questions about the world.

2. Have them situate them within the map of knowledge. What gaps appear? What kinds of questions could be asked to fill these gaps?

This simple map of knowledge also helps to explain why there may sometimes be no solutions to problems at the level at which they are first experienced or described. For example, a problem at the level of the senses may have no immediate practical solution. However, a shift to reason or to contemplation may reveal answers via informed insight or spiritual wisdom. In other words, *problems that cannot be solved may, in some cases, be transcended in a higher-order unity*. Such are among the practical consequences of higher-order human capacities.

The ability to distinguish between number, theory and direct perception also allows us to maintain some important distinctions between machines and people. At present the former are strictly limited to that part of the universe accessible through number. So long as this remains true, there are strong grounds for seeing machines as inferior and derivative entities (however 'intelligent' they may one day appear).

The consequence of this brief discussion is basically straightforward: Western culture is caught up in the confusions and dilemmas of inadequate ways of knowing, of false maps and false solutions. In order to make real progress, the last thing we need is a continuation of compulsive technical dynamism, linked to low-level human impulses (profit, power, aggression, etc.). This path will lead to intensification but no resolution. The logic is that in the 'war on terror' discussed above, by seeking to use terror to end terror, terror will be escalated. Solutions will tend to emerge in part by using higher level thinking to short-circuit such 'negative feedback loops'.

The most important kind of progress we could make at the present time is to move out of the sterility and irresolvable conflict of reductionist ways of knowing. We need a new, or renewed, worldview. One that recognises a hierarchically layered world and re-establishes at the peak of culture the highest motives and aspirations that humans are capable of.

A paper by Francis Hutchinson explores how false maps of reality have distorted our ability to respond to the metaproblem.[3] This is a rich article that opens up many questions for the reader.

1. Have students read the article and ask five questions based upon its central assertion that 'we need alternative mappings rather than a predictive cartographic gaze on the terrains of times to come'.

PART 2: CONTEXT AND APPLICATIONS

Four contexts of futures study

2.1 The metaproblem

The metaproblem has been described in Part 1. This term refers to processes of cultural formation that have sustained Western civilisation over the past two centuries but which are becoming increasingly unsustainable. It is common for people to feel paralysed when considering the enormity of the challenges that lie before us. Futures studies seeks to respond to this situation with strategies and processes that enable us to navigate the future and engage in processes of cultural editing that significantly shift the course of civilisation towards socially and environmentally sustainable practices.

The metaproblem sets the parameters of the possible. It is the contextual limit that must be challenged as it can be characterised as 'flatland', an impoverished worldview based on an instrumental rationality that registers a narrow slice of reality. Flatland is a term coined by Ken Wilber to describe the limited reality of the modern era. The consequences of this narrowing of vision have been devastating.

Individuals and cultures have been stripped of inner meaning and the external world (including the global ecology) rendered into a set of things, mere resources. Consequently the world of modernity has been built on an illusion: the illusion that only half of reality matters: the external, objective, measurable part. In human terms, the achievement and the disaster of the modern world is the disengaged ego. The cry 'no more myths' led to the abandonment of any possibility of further development and to the 'disenchantment' of self and the world. In other words, what Ken Wilber calls 'the big three': that is the world of 'I', that of 'we' and that of 'it', became dissociated each from the others. In this view the great task of post-modernity is to re-integrate them.

1. Make a list of some of the key features of flatland.

2. Develop skits that reflect features of the 'big three'.

3. Have students make lists of 'life priorities' then ask them to identify which priorities align with the 'I', the 'we' and the 'it' of Wilber's analysis.

4. Have students work on the worksheet, figure 2.1

2.2 Mapping reality

Wilber has divided reality into four quadrants, expanding on the 'big three' mentioned above and, in so doing, has provided a meta-map to take us beyond the metaproblem. This framework offers a simple division between inner and outer on one axis and between individual and social on the other. This may sound too simple. Yet this is only one aspect of a more detailed perspective (see section 5.11: The integral agenda). Each quadrant is used to trace the process of evolution in that particular field (figure 2.2). So what we get are four parallel processes, each intimately

linked with the other of: interior-individual development; exterior-individual development; interior-social development and exterior-social development.

1. Values, assumptions and practices driving the global system towards disaster:

2. Values, assumptions and practices involved in the push for sustainability:

3. Interest and constituencies supporting (1):

4. Interests and constituencies supporting (2):

Conclusions

1.

2.

3.

4.

Specific changes needed and actions suggested by the above:

What resources and support are needed to put them into action?

Figure 2.1 Global deterioration and recovery

Reality can now be seen as a number of processes running in conjunction. Health can be described as balance between and within these processes and cultural recovery as a reintegration of these processes.

A four-quadrant analysis considerably expands the context for futures studies. The object is to apply foresight and integrated ethics to exploring plausible and preferable futures with students.

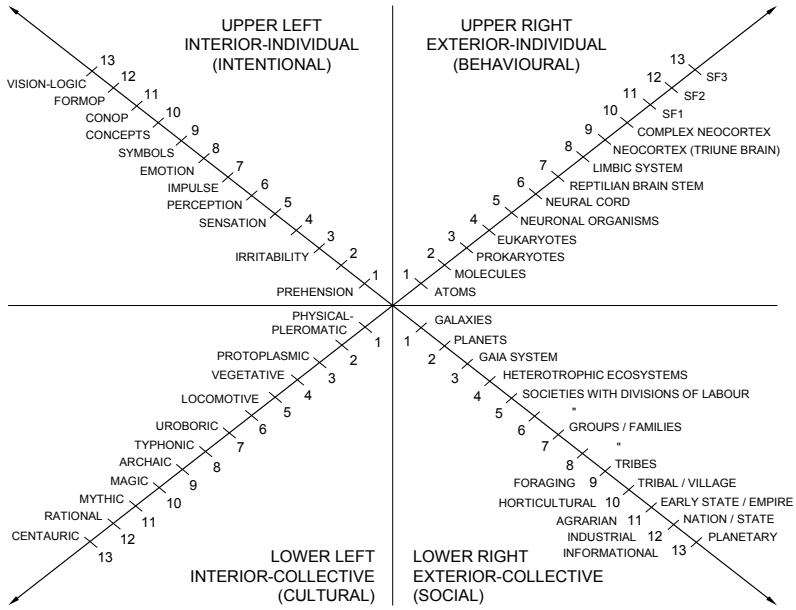


Figure 2.2 Some details of the four quadrants

Upper Left **Interior-Individual**	**Upper Right** **Exterior-Individual**
Lower Left **Interior-Collective**	**Lower Right** **Exterior-Collective**

Figure 2.3 Four quadrant work sheet

1. Use figure 2.3 to place aspects of student's contemporary reality in various quadrants. What do we know about the most? What is the hardest area to describe?

3. Make a list of questions you would ask within the various quadrants.

4. What is knowable within the various quadrants?

5. Choose another culture or period of history and apply four-quadrant analysis to this place/period.

2.3 Space and time

Our context is also set by the position of the researcher within tradition and culture. Futurists need to be aware of the nature of 'present thinking' as contextualised within the fields of space and time. David Hicks developed figure 2.4 to show how the field includes the local, regional and global and how past, present and future flow through this.

Such present thinking often forecloses on preferable and alternative futures. It is explored further in section 2.13.

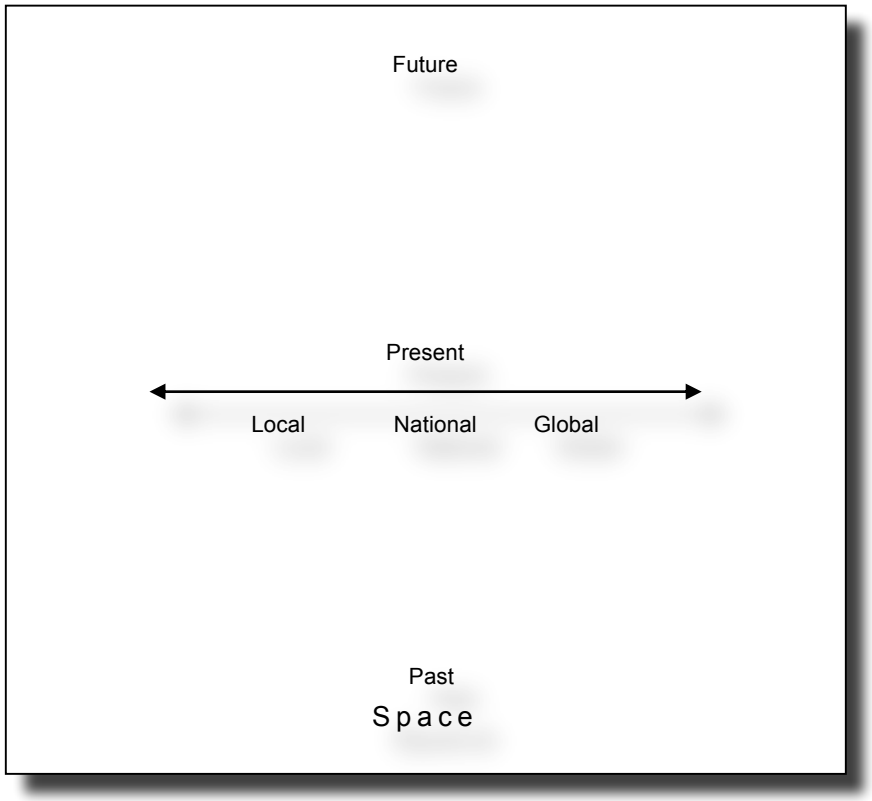


Figure 2.4 Time and space

1. Have students create a list of concerns for their future from the local, national and global perspectives.

2. Create three time lines for your local, national and global context.

2.4 Needs and responsibilities

The personal context is important in framing futures issues and directing futures enquiries. Richard Eckersley has pointed out that one of the great sources of anxiety in the Western world is the perceived mismatch between what we know about the environmental and social imbalance and how we live.[4] As people do things they know are bad for the planet they feel both powerless and implicated in the disorder. The result is a shutting down of their ethical sensibilities and a rising cynicism.

Figure 2.5 outlines the needs of young people and their responsibilities. These set the personal emotional and ethical domains from which to work towards personal and cultural recovery.

The recognition of needs and responsibilities maps out a significant dimension of the personal context. This is a domain in which young people often feel frustrated, confused and powerless.

Rights	Responsibilities
Self-knowledge and self-mastery	Look beyond one's own personal needs
Cognitive and ethical framework	Participating in global community
Practical competence and artistic skill (creativity)	Act as caring stewards of global environment and other species
Contextual insight — into global and cultural system	Conserving and reinventing culture
Meet basic needs: physical, intellectual and spiritual	Acknowledge the needs of future generations
Foresight, vision and skills in social innovation	Subordinating technical concepts to human ones
Joy and celebration — awareness of interconnections — situated individuality	Challenge flatland culture with human culture
Sense of participating in a greater social whole	Awareness reflected in social engagement

Figure 2.5 Rights and responsibilities of the young

1. Look again at figure 2.2. Which needs are met by which quadrants?
2. Put your responsibilities into their appropriate quadrants.
3. Design posters that communicate the needs and responsibilities of young people.

2.5 Empowerment practices

The following strategies provide a framework from which young people can regain a sense of control and purpose. They are designed to help those working with young people to help them respond to difficult times.

Strategies for young people

Develop an understanding of the effects of young peoples' media.

Look at the ways that such media portray the future in dark, violent, stereotypical terms. Ask 'What is going on here?' Direct attention to the constructed nature of these images. Look beyond the marketing imperative, its traps and diversions, to a wider range of possibilities and alternatives.

Change fears into motivations.

Show how energy is channelled into constructing fears or concerns. Explore strategies for re-directing this energy toward strategies of response. Explore the meaning of high-quality responses. Explore the empowerment principle.

Explore social innovations.

Use simple examples to illustrate how they work. Provide opportunities for young people to model or use the social innovation process described in section 1.11. Look at people, literature where successful examples are given.

See the future as part of the present.

Explore conventional notions of the future. Look at connections between past, present and future. Consider examples from this and other cultures of how future generations can be considered and valued.

Use futures concepts, tools and ideas.

Take up some of these and explore their implications with/for young people. Teach futures concepts with the express purpose of helping to develop a futures discourse. Introduce simple futures tools such as time lines and futures wheels.

Design ways out of the industrial era.

Show how the concept of design is inherently futures-oriented. Use concrete examples to show how the creative process works. Apply to problem solving, social design, social directions.

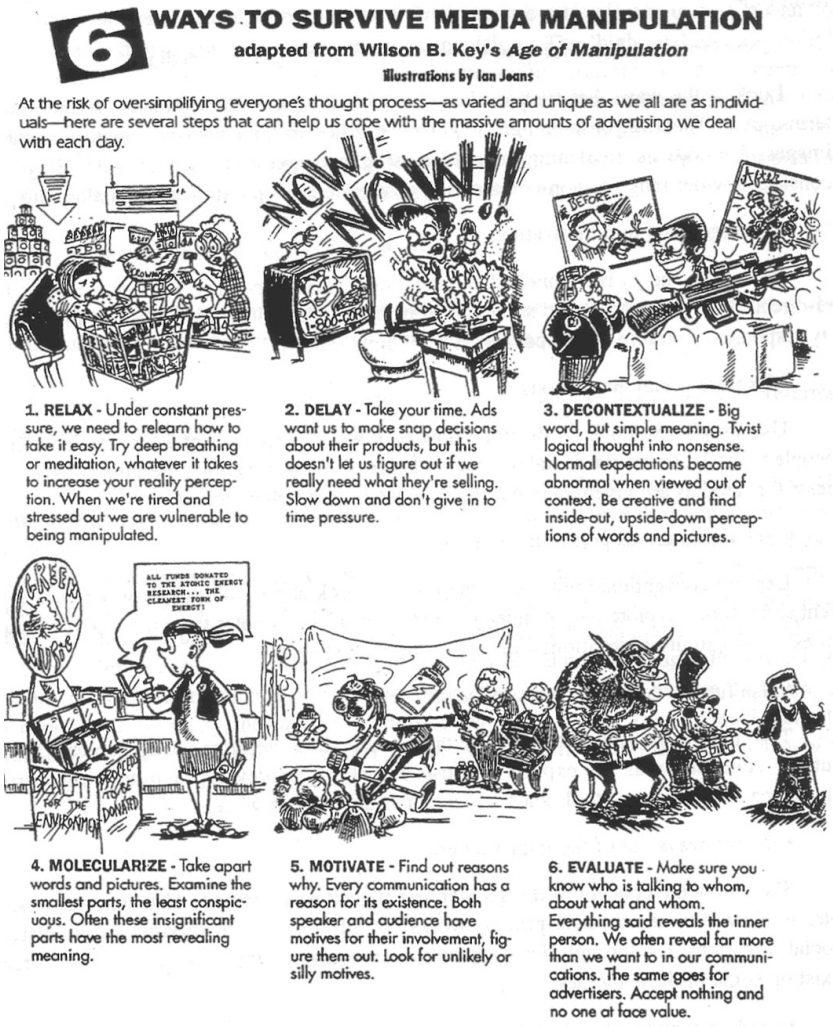


Figure 2.6 Six ways to survive media manipulation

1. Have students discuss figure 2.6. How important is the media to them? What do they think is the point of each strategy? Do they use any of these already in their personal lives?

2. Provide groups of students with copies of the list in figure 2.7. Have them cut each suggestion up and paste them onto another sheet in order of importance to them.

3. After the exercise, ask them how much disagreement the exercise created. How were these conflicting opinions resolved?

Look after yourself physically. Attend to the basics: diet, exercise, sleep, avoid toxic substances.

Develop a sense of purpose — what is your particular gift? How can it be expressed? In what contexts can it be deployed?

Retain a sense of humour. Humour has a healing quality.

Learn to network! There are active networks and support groups in every area of concern. Find them. Use them. Networking is powerful. (Five 'rules' of networking: be useful; don't be boring; listen; ask questions; don't make assumptions.)

Pursue excellence in at least one area. Everyone can do something!

Become a student of human affairs. Understand 'the breakdown' (i.e. the decline of industrialism) and routes beyond it, i.e. processes of individual and social recovery.

Look beyond Dystopia to the range of human futures based on other traditions and assumptions.

Don't get too involved in the 'unreality industry' and its diversionary surrogate worlds.

Study the grounds of solutions. e.g. the Ghita; the Perennial Philosophy (Huxley), Siddharta (Hesse); the words of Joseph Campbell (on myth); the Institute for Social Inventions (UK); and other social innovations, citizen activism and social movements.

Be critical of the uses of science and technology. They provide much to live *with*, but little to live *for*, i.e. no purpose or intrinsic meaning.

Look for ways to develop and strengthen non-material values.

Be prepared to re-think the nature of your needs (especially material ones). Try to keep them in a right balance with non-material needs and aspirations.

Don't simply opt out and let the future happen. Get involved in bringing about the future you want. Utilise the rich resources of the futures field to grasp every opportunity and move towards consciously-chosen goals.

Figure 2.7 Survival skills during hard times

For more on these ideas see section 4.6: The empowerment principle.

Reflection 3

2.6 Utopia and dystopia

Figure 2.8 Utopia

The attempt to imagine ideal societies has a long and honourable past (see the image from William Morris' book *News from Nowhere*, figure 1.4). For over four hundred years writers, scholars, and speculators of many different persuasions put pen to paper and tried to imagine how the ills of their societies could be overcome and new possibilities created. From Sir Thomas Moore's classic *Utopia* (1516) onward there was a vast and varied outpouring of such material. It prepared the ground for many social innovations that we now take for granted: health insurance, democratic government, courts of law and the emancipation of women, to mention only a few.

Perhaps the last great utopia was H G Wells' attempt to write what he called *A Modern Utopia* (1905). It was a bold vision based on the assumed benefits of science and technology. But there was also a darker side to the picture. Wells not only saw the rational organisation of human affairs

leading to an era of peace and prosperity. He also foresaw the armoured land tank and nuclear weapons. There is a powerful description of the latter in one of his later books. He worried endlessly about what he termed 'human folly'.

Four years after the publication of Wells' utopia, another writer produced a powerful story that considered the dark side of Wells' vision. The writer in question was E M Forster and his story was called *The Machine Stops*. It was, and remains, a powerful vision of a world in which all human life is dependent upon machines. It is a repressive, high-tech. future in which people have forgotten how to control 'the machine' and have also forgotten that technology takes away even as it provides.

Figure 2.9 Dystopia

So at the beginning of the twentieth century we saw the long tradition of utopia giving way to anti-utopia (or dystopia). The twin extremes represent two poles of our destiny: progress and disaster. The interesting thing is that at the beginning of the twenty-first century it has become progressively *easier* to imagine dystopia and *harder* to believe in progress. Utopia has even been subjected to negative reversals that suggest that notions of social improvement are 'unrealistic', pie-in-the-sky or oppressively overbearing. There have certainly been many dystopian images and events to draw on: overcrowded cities, polluted seas, dying animals and birds, stark images of famine, war and decay. The use of nuclear weapons at the end of the second world war, the growing fears for the environment and a pervasive sense of uncertainty and loss of control have made the future appear increasingly problematic. The

implications are far from obvious because the impacts of such shifts frequently take place in hidden, unregarded ways. After noting that people can be regarded as symbolic animals who seek meaning, Dexter Dunphy notes that 'it is at the symbolic level that change hits us hardest, because it so frequently tears apart symbols which have provided our lives with meaning and continuity'.[5]

In popular culture we have become so accustomed to moods of cynicism, violence and despair that it may not be immediately obvious how inhibiting they can be. The great dystopias of the century (Huxley's *Brave New World* and Orwell's *1984*) clearly articulated widely felt concerns about de-personalisation and other threats to our well-being. So far, so good. But they are succeeded by entire industries that now permeate the global village. It is now almost impossible to contemplate an evening's TV viewing or the week's films without noting references back to familiar dystopian themes of disaster, decay and dissolution. Clearly our pre-occupation with bright new technologies has not fooled the collective unconscious: something important is missing. This sense of loss is faithfully reproduced in the mass media. Yet they reveal little awareness either of the proliferation of negative futures imagery or of the human implications of ersatz surrogate worlds which arguably mis-represent social reality in major ways. In other words, the distortions of the technological screen between us and the natural world complicate the task of understanding it and of acting to preserve it for future generations.

We want to avoid giving the impression that dystopia is necessarily 'bad' in any simple-minded way. The great dystopias can also be read as warnings, destinations to avoid. As components upon a map of futures, areas of danger are as important as possible destinations. Moreover, the subjects of such warnings can be falsified by concerted action. Such is the power of applied foresight. On the other hand, anodyne or apparently positive images may conceal many dangers behind a seemingly harmless façade, making today's utopia tomorrow's dystopia. This should alert us to the fact that, like optimism and pessimism, utopia and dystopia are ambiguous. Care should be taken in believing and interpreting them. These simple oppositions have more to do with the preference of the human mind for binary pairs than with a profoundly interconnected world. The latter demands a deeper approach to the imaging dilemma.

1. Ask students to make a list of dystopian films.

2. Ask them to make a list of any utopian films they have seen.

3. Compare the two lists. Which predominate?

4. Show students figure 2.8. Ask them to work in groups to design their utopia.

5. Repeat this process with reference to figure 2.9 Have them create a cure for 'dystopic fever'.

6. If students are young enough, figures 2.8 and 2.9 can also be coloured.

7. What promises (i.e. utopian dreams) of the early twentieth century have proven to have unforeseeable, and possibly dystopian, consequences?

8. Students create a utopia file in which they collect advertisement imagery that offers a sense of utopian possibility linked with a product.

At this point we can introduce one of the most pervasive responses to the environmental and social crises of the past decades. Francis Hutchinson found in his research with young people that many respondents, particularly boys, felt that technology would overcome the dangers of the future. Ironically they also felt that technology was also going to be the greatest danger to humanity in the future. The tension between these two positions is the basis for a vision of the future called the techno-fix.

Figure 2.10 Techno-future

It is important to understand that it is humans who create, use and abuse technology. Figure 2.10 summarises some of the problems with the techno-fix mentality. Essentially it absolves us of responsibility and postpones the moment at which we need to act.

1. Ask students what technologies are going to solve the world's problems.
2. Ask them to create another list with those technologies most likely to cause problems. Is there an overlap?
3. Present them with figure 2.10 and ask them to discuss the concept of 'techno-fix'.
4. Run a debate on the theme: Relax! Technology will save our planet.

2.7 What can we know about the future?

From the point of view of empirical science, we can know nothing whatsoever about the future. It does not exist, therefore, it cannot be studied. Yet intuitively we know that something is wrong with this view. It is true that the future is not an object, nor can it be the subject of experimentation. But that does not mean that it does not exist. There are many features of the world that are important to people which cannot be studied, measured, or even detected, from an empirical perspective. How much is music worth? What does an ethical principle weigh? Neither of these questions makes a lot of sense because to ask them in this form involves category errors.

A category error arises when criteria for truth, reliability, etc. are taken from one domain and read onto another. The domain that futures questions are situated in is *not* the same as that occupied by empirical science, so the criteria of the latter do not apply to the study of futures. We need to look elsewhere for such criteria. And fortunately they are close at hand.

In his work *The Art of Conjecture* Bertrand de Jouvenel suggested that studying futures was not, in fact, a question of knowledge and facts at all, but one of *conjectures*. As his title suggests he likened it to a work of art, in part because it was an expression and a creation of the human mind. So, in this view, the act of studying futures is a construction within the present that takes place in the richly endowed environment of human minds.

Later observers have debated this issue at great length. Some have attempted to increase the accuracy of forecasting. Others have stressed a range of other methods for coming to grips with the future. Scenarios can give a very clear idea of different future alternatives. Delphic surveys tap expert opinion of developments in a particular area. Futures workshops encourage people to feel empowered to create aspects of desired futures. And so on. We do not want to undervalue these activities here. All are important, all have their place. But we want to take a different tack.

James Ogilvy has argued that instead of attempting to emulate the physical sciences, futures study and research should instead align with developments in the humanities. Further, that such developments actually lead toward, and imply, a need for futures work — which for him means normative (or value-laden) scenarios. We want to support this view because we too have found major correspondences between developments in linguistics, semiotics, critical theory, hermeneutics, etc., and the futures enterprise. It is easy here to diverge into a discussion of these theories and their importance. But this is not the place for such a discussion. Instead, we want to summarise the implications for futures study. This will show more clearly what kind of enterprise it is and in what sense the future can be said to be a domain of knowledge.

1. Have students develop a list of 'future facts'. Reflect on what we can know and what we can't and how 'knowing' is contextual.

2. Use Figure 2.11 to categorise knowledge. This table is based on the four quadrant model introduced in section 2.2 above. It should allow them to explore this idea while deepening their appreciation for the problematic and layered nature of knowledge formation.

Internal/Individual	External/Individual	Personal Experience
		Social Reality
Internal/Social	External/Social	

Inner Reality Outer Reality

Figure 2.11 Mapping reality

3. Even when forecasting is correct the time has to be ripe for it to be heard. Take the example of the 11th September attacks in the US. The attack on the Twin Towers was actually predicted in 1985 by security analyst Charlie Schnabolk and explicitly restated by him in 2000. In that year he was asked, what is the greatest threat to the World Trade Centre? His answer was 'Someone flying a plane into the building …'. Yet no precautions were taken. Get students to reflect on the ability to forecast and the ability to act. What is an acceptable risk?

2.8 A deeper view of futures study

The dominant (mainly American) tradition of futures work has been largely empiricist in outlook. That is, it invested a lot of time analysing time-series data, performing elaborate calculations and producing forecasts, time-lines, decision trees and so on, to guide present-day decision making. Some of this work, like that of Graham Molitor, is of very high quality. Yet, to our minds, it overlooks many of the deeper questions. Questions to do with language, meaning, fundamentally opposing interests and, most importantly, the social construction of reality. In passing over such questions this dominant tradition seemed to us to miss the point. One cannot discuss 'world problems' without giving due weight to the traditions, epistemologies and communities of discourse which arguably gave rise to these problems in the first place. This helps us to understand why many early futures books, with their

repetitious description of 'world problems' and solutions, were so unsatisfying. They missed out the most important 'layer' or domain, i.e. that which is concerned with constructing, negotiating and maintaining meanings.

The upshot is that the developments that Ogilvy and others had noted in other areas had immediate and practical use within the futures enterprise. In other words, instead of seeing futures work as something drastically different from other fields, it really has a great deal in common with them. *In this view, the essence of futures study is not prediction, nor even forecasting — but dialogue and scholarship.* The same general rules that apply to any non-quantitative field apply in futures: clear argument, fit with the evidence, clarity, fruitfulness, applicability etc.

The futurist may be distinctive as regards subject matter — i.e. the future — but not entirely so as regards methods and approaches. So, at one level, futures study is simply scholarship applied to futures problems. From this trans-disciplinary perspective futurists ask: Where have we come from? Where are we now? Where do we want to go? How do we get there? These important questions overlap with those being asked in many other fields and areas. However, it is also the case that futures study frequently involves a number of specifically futures-related methods and approaches. What emerges from this discussion is a view of futures study as being partly common with other fields and partly distinctive as regards subject matter and methods. This makes it easier to specify what kind of knowledge is being sought.

1. List related fields that would be relevant to futures work.
2. Create a histogram to illustrate the trans-disciplinary approach.

2.9 Knowledge and futures

It is very clear to us that futures people are unwise to try to predict events, let alone particular scenarios or the future of a social system. Social systems are just too complex to be approached in this way. They are comprised of many qualitative elements that include: values, beliefs, ideologies, pre-suppositions and so on. Furthermore, any successful social predictions would logically rule out the *active* role of human beings as agents and creators of history. If accurate prediction were possible, there would be no choices and hence no point in futures study. What futures people *can* do is much more modest, but very useful. By looking carefully at the past and present, they can derive an informed overview of present-day structures and processes. Careful use of this material makes it possible to create a broad-brush picture, or account, of the near-term future.

We want to stress that it is not a detailed, or a complete, picture. It is provisional, unproven, yet — and this is important — *grounded* in a clear set of understandings and propositions. It is clear why scholarship is important here. *Far from being a problematic enterprise that tests one's credulity, futures work of the kind described here actually calls for the very best work, the very highest standards (of clarity, insight, care, etc.) and the most careful and under-stated expression of any field of study.*

One result of such work is what we call a 'decision context'. This is a moment that spans past, present and aspects of possible futures. The context is rooted in the four settings described at the beginning of this section. It fuses information from

environmental scanning with an understanding of the contextual parameters. In this process we mix analytic and interpretive processes while harnessing the creative energy of the moment (see section 1.9: Looking back, forward and around; and sections 3.6 & 3.7: Linking past, present and future).

Such a process generates a field of knowledge that lies heavily in the upper and lower left hand quadrants described in section 2.2 above, but also requires access to and knowledge of all four quadrants' concerns. It follows that *knowledge of the future is not empirical knowledge (lower-right), but interpretative knowledge (upper-left).* What futures people do is to look back and to derive insights, data and knowledge about the past, drawing on the humanities (lower-left). They interpret that knowledge and use it to approach their understanding of the present. Within the present they look carefully at structures and processes, drawing on the social sciences (lower-left & lower-right). Furthermore, they explore the technological and social trends within science, business and the mass media, all of which falls squarely within the lower and upper-right quadrants. On the basis of these observations they look forward and create provisional knowledge about futures. They are helped with the study of processes in the present by the work of many other people. In other words, futurists are habitual skimmers. Another way of putting this is to say that they are always *scanning the environment* for significant signals, *interpreting them* and then *using them* to modify their work.

It therefore becomes clear in what sense we can have knowledge about futures. It is logically barred from us that we could ever have future facts about human and cultural systems. So we move to the next best option. That is a provisional, but fairly detailed and grounded picture, or view, of the terrain ahead. This is why we use the metaphor of the 'future landscape'. The view ahead is continually informed and up-dated as events occur and our interpretations of the world change. Such a view can never be totally reliable. Yet it tells us much that is useful in the present. Indeed, a thesis of this book is that *a carefully constructed forward view may be the single most important thing that we need in order to steer a sane course through the twenty-first century.*

2.10 The loop of futures scanning

Futures work is based on a series of exploratory loops that begin in the past or present, range out into the future and then return to the present as options and choices. A simple model is given here. It outlines a process that is widely used in everyday life. It is made up of stages: *scanning* (the view ahead); *interpreting* (what does this view tell us?); *responding* (including decision-making and action); *evaluation* (how did the response fit the context?); and *goal-setting.*

Such loops can be found everywhere. So they can be observed and studied. Walking, driving and sailing are three examples. There are many more. These loops generate feedback that we can collect as data of different kinds. As students become aware of this dynamic process, it can be seen operating in many situations. Hazel Henderson describes it well when talking about community life. In earlier days the consequences of anti-social behaviour were rapidly apparent and the community could deal with the situation quickly. The point Henderson makes is that effects are now displaced through time and space and may not be detected immediately. Futurists need to work carefully in order to 'read the signs'.

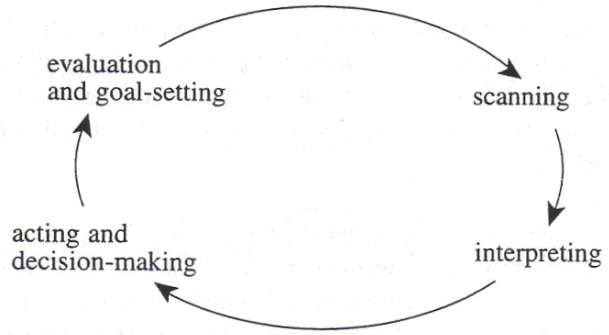


Figure 2.12 The loop of futures scanning

Once the loop is understood empirically, at a simple level, it can be used as a model of futures work in general. Futures researchers draw on a range of methods using broadly parallel processes. They use various means to scan their environment, to understand change, to analyse trends and to develop views of the near-term future. Briefly, they attempt to act as 'look-outs' for particular purposes. They are a bit like the headlamps on a car that probe ahead into the gloom to show us where we may be going. Of course, the knowledge so gained can be used to make decisions — including changing the destination. Many organisations link environmental scanning with strategic planning and the analysis of future options, again replicating the entire loop.

A further analogy is the use of pilots taken on board large ships as they negotiate unfamiliar waters (e.g. the Heads, in Port Phillip Bay, Victoria). Culturally futurists attempt the same role. They look ahead with every means at their disposal in order to understand the near-future context. This information is constantly up-dated. It is extremely useful in assisting individuals, organisations and societies to 'steer' around obstacles (i.e. detect and respond to problems) as well as to reach desired destinations.

This model of the loop of futures scanning can be understood even by young children. However, at a more complex level it merges into systems theory and studies of perception. It follows that futures work should not be identified merely with single forecasts, extrapolations or predictions, for these are only aspects of something larger. That 'something' is *a dynamic process*. It has more to do with judgement than with calculation. That is why futures work is primarily a humanistic, value-laden and scholarly activity, rather than merely a technical one. Here are some practical ways of investigating how the loop of futures scanning works.

1. Have a group of students set up the following experiment. They ask two groups of their friends to walk along a narrow path toward each other. They carefully observe and record what happens. They return to the classroom and explain what they saw. This is all carried out by observation only; the teacher does not tell the students what to expect.

2. Have the same group closely observe the behaviour of people crossing a road at an intersection. At this point, students should be encouraged to *ask the right questions*. For example, how does a person decide exactly what path to follow across the road? What happens when he/she meets an obstacle, or another person? How are collisions avoided?

3. Present students with figures 2.13 and 2.14. Here learning to ride a bike is displayed in terms of feedback. Feedback is a simple, but ubiquitous, concept from systems theory. When it is understood, students can begin to understand how it operates in successive scanning loops, moderating and guiding our responses. This leads on to the topic of futures scanning in general.

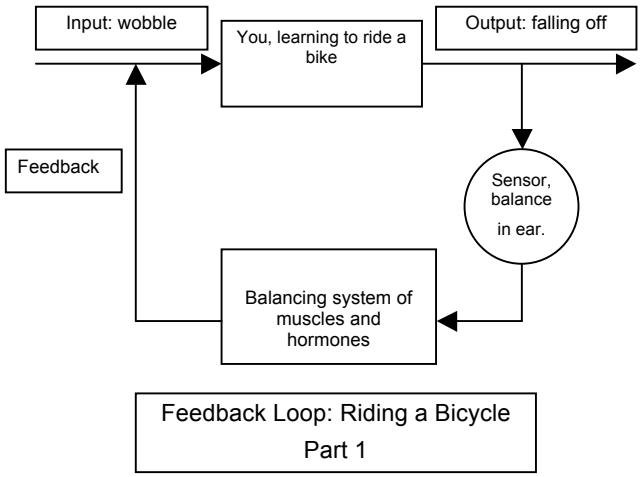


Figure 2.13 Feedback loop 1

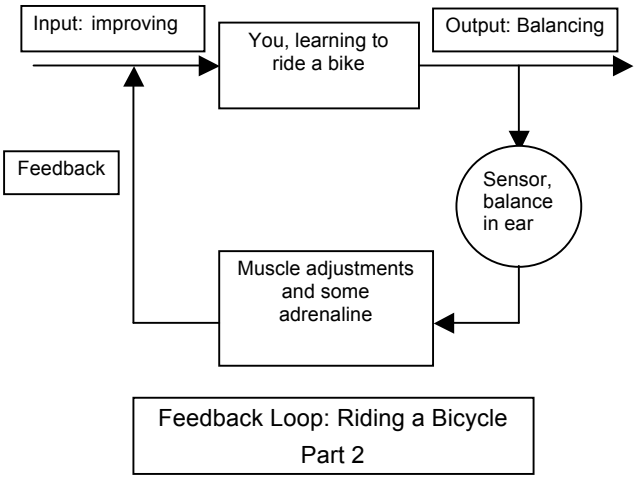


Figure 2.14 Feedback loop 2

4. Now give students the open feedback image figure 2.15 and have them form groups and create their own feedback sequences.

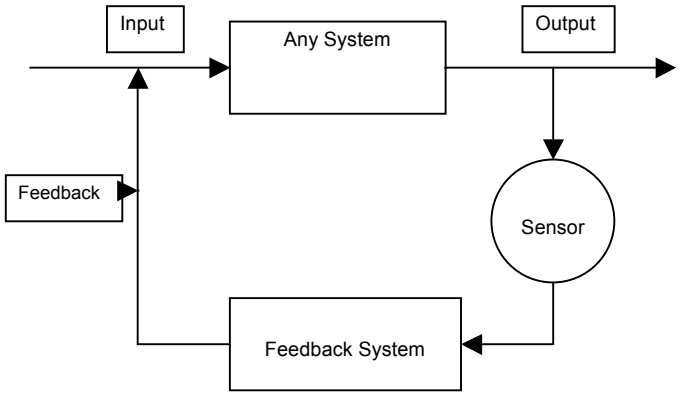


Figure 2.15 Simple feedback loop

2.11 Cultural editing

The emergence of futures studies as an educational imperative can be considered from a complementary point of view. That is, from an understanding of some of the ways that a culture conditions the view of those who developed within it. Back in 1935 Ruth Benedict published a book called *Patterns of Culture* which stated that 'no man looks at the world through pristine eyes. He sees it edited by a definite set of customs and institutions and ways of knowing'.

Despite the dated language, this is an important insight, for there is good reason to believe that the cultural editing that has taken place via the industrial worldview has had a number of powerful consequences. We have come to view the world in certain ways and these dictate how we utilise it. But many of these ways are not viable in the longer term. *If we want to create a sustainable culture we will have to find ways to 're-program' some of our cultural editing processes*. Education has a significant contribution to make here.

Current dilemmas suggest that we need to re-construct our worldview — literally change the ways we construe the world. But this is an historically unprecedented task. We simply don't know enough about how these processes work. Furthermore, the image of re-programming is itself flawed as it comes from the worldview it is intended to modify. Perhaps it might be better to say that education as a process of cultural editing can be designed to help us remember, from the integral perspective, our true potential.

For a start, this act of remembering allows us to see the following challenges:

- the dominance of instrumental rationality;
- the mis-representation of nature as merely a resource;
- the need for a renewed sense of limits;
- the need to recover a sense of the sacred;

- the need to assert ethical human priorities over science, technology, marketing etc.

Against these we may cite components that could perhaps be included in a renewed worldview:

- a sense of temporal process embracing past, present and future;
- a global and systemic view;
- a recovery of participatory consciousness;
- reflexive awareness; and
- a commitment to higher-order human development.

It is not entirely clear to what extent a culture can consciously change its own editing processes. However, looking back at successful examples of systemic change (such as have been to some extent achieved by the environmental and women's movements) there is sufficient evidence to justify cautious optimism. Change is possible when the time is right and the ideas involved are compelling enough to win wide support. This does not mean that all 'problems' can be solved. Many will only be resolved when their deeper dimensions are more fully understood and more widely appreciated. Yet even now a way ahead can be seen.

There is sufficient evidence at hand to suggest a new worldview is on the cultural horizon. David Hicks has summarised some aspects of this in figure 2.16.

The kind of cultural editing which has occurred within Western cultures has either ignored or misrepresented the higher levels of a qualitatively differentiated world as embodied in the four quadrants of Ken Wilber. It has made the synthetic approach appear mysterious or esoteric, the realm of gurus, mystics or charlatans. In fact this is simply part of a wider pattern. Just as a clock is more than the sum of its parts and a living organ is more than the sum of its cells, so the more highly evolved manifestations of human consciousness reach transcendent levels. Accounts of these processes suggest very strongly that higher levels of awareness tend to be inclusive rather than exclusive. They reach out to broader spans of space and time and have therefore become essential in healing the planet, creating peace and moving toward new stages of civilised life.

The social reality of the new worldview is captured in the right hand column of figure 2.16. It offers an image of a hierarchy of knowing which would facilitate the cultural editing required to realise this new world order. Wisdom occupies the highest level not because it is superior but because it is more highly differentiated. It does not involve a rejection of empiricism or technical rationality but rather an understanding of *where their appropriateness lies*, of where they fit. In losing this scheme of vertical differentiation, Western culture has cut itself off from some of the most potent sources of value and meaning. One result is that problems (of power, ownership and conflicting interests) genuinely appear irresolvable. They *are* irresolvable in these terms. Yet lasting solutions can rapidly appear in a vertical movement that transcends and resolves lower-level contradictions.

It cannot be over-emphasised that *insight depends upon the richness of the structures that enable it*.

Dominant Worldview	Emerging Worldview
Lower valuing of nature • Human domination of nature to produce more goods • Economic growth more important than environment	Higher valuing of nature • Holistic relationship between humans and nature • Environmental protection more important than economic growth
Narrower compassion • Exploitation of other people and species • Concern for this generation only	Wider compassion • Concern for all people and species • Concern also for future generations
Risk always acceptable • Advances in science/technology always for the best • Emphasis on technological sophistication	Risk minimised by foresight • Greater social/political regulation to protect from high risk • Emphasis on appropriate technology
No limits to growth • No real resource shortages • Continued over-consumption	Clear limits to growth • Many resources are finite • Reduce, reuse and conserve
Present society works well • Competition and hierarchy are good • Complex and fast lifestyles	Society needs transforming • Co-operation, participation , co-creation • Simpler, reflective life styles
Old politics • Often opposes pressure groups • Traditional left-right spectrum	New politics • Pressure groups act as vital antennae for society • A more participatory democracy

Figure 2.16 Changing world views

1. Give students the cultural change matrix (figure 2.17) and ask them to fill it in.
2. Ask them to form groups and develop a set of features for each domain.
3. Share the results and reflect on cultural editing as a process of selective perception.

		Value changes	Social and econ. changes	Technical changes	Major events	Shaping issues and problems	Other
Past legacy	Grandparents						
↓	Parents						
Present	Self						
↓	Children						
Future world	Grandchildren						

Figure 2.17 A process of cultural change

2.12 Probing beneath the surface

The struggle between a dominant worldview and an emergent one can be slow and tense. It is a struggle that is played out on a daily basis in the lives of each of us but it is also a struggle within all human processes including futures studies. The following image uses the parallel between architectural structure and human social structure to illustrate this point.

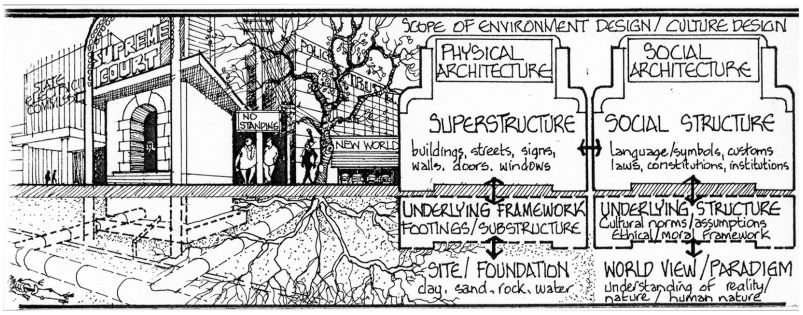


Figure 2.18 Architectural metaphor: the relationship between surface structures and underlying foundations

There are dimensions of futures studies that can be seen to be anchored in each level of the social structure. In short, as was stated in section 1.14: Layered futures, futures studies, like all human endeavour, is layered.

It follows therefore, that futures work that misses the shaping significance of socio-cultural foundations will increasingly be seen as naïve and superficial. This is so because it misses the richest opportunities for problem-solving, reconceptualisation and cultural renewal. The latter cannot be identified merely with changes in surface structures such as buildings and new technologies. We will have to deal in depth with the problematics of cultures in stress and in transition. So it is likely that distinct

levels will be recognised in futures work. Four possibilities are given in section 1.14. What we have called pop futurism tends to be technophilic, conservative and diversionary. It thrives in mass-market TV programs and in the popular press. It can be marketed. Problem-focused futures study is often earnest and well meaning, but its prescriptions lack credibility for the reasons given above. Critical futures study is still fairly uncommon, but some of the best futures work available draws upon critical sources and traditions of enquiry. Finally, epistemological futures study provides the necessary depth (see deep futures, Part 5: Reflection 9).

As one moves through these levels, so an increasingly rich array of options present themselves. At the most superficial level one remains imprisoned by unregarded 'givens' and unstated assumptions. The deeper one goes, the more demanding the work. But, equally, the greater scope exists to look freshly upon assumptions and meanings that have come to seem natural and inevitable, but are in fact not so. At the epistemological level, futures work merges imperceptibly into the kind of fundamental re-thinking that is clearly philosophical in character and orientation.

These are welcome developments. For it is here in the foundations of culture that all 'world problems' have their origins. Equally, lasting 'solutions' will emerge not from ill-founded analysis or superficial tinkering. Nor will they grow from the media hype of pop futurism. For 'solutions' to be effective they will necessarily involve deep-seated shifts of perception, value and understanding at the deeper levels.

2.13 Social ordering — the futures triangle

Figure 2.19 The futures triangle

Another way to appreciate the social processes that generate our perception of reality is to apply specific futures tools to lived contexts so that the processes of social ordering that create and maintain these contexts come into focus. David Hicks' image of the temporal and spatial nature of reality reminds us that existence is bounded by these two fundamental qualities. We come to understand through futures studies that such realities are far from hard and fast. Societies generate shared meaning by

accepting as natural certain forms of expression. They then 'forget' that these shared meanings have been 'negotiated' in some, usually shadowy, way.

Sohail Inayatullah has developed the futures triangle as a simple way to illustrate the constructed nature of the moment. It is a fine example of a simple tool that lays bare features that constitute reality. Figure 2.19 illustrates how the present is defined by three forces: the push of the present, the weight of the past and the pull of the future. These forces shape our expectations, hopes, fears and dreams. They are the ingredients for thinking about possible engagement with the future as a 'space' of becoming.

Social ordering occurs as the result of the dynamic interactions of these three 'social forces'. Applying the chart requires us to think both critically and synthetically as the triangle acknowledges that reality is as much shaped by interior dimensions of human action (desire, fear, vision and hope) as it is by physical realities emerging from technological momentum and inherited cultural and environmental conditions.

1. Apply the futures triangle to a pressing social issue. What surprises emerge from your analysis?

2. Use the futures triangle as a structure for a simple play that deals with an issue such as street kids, drugs or terrorism. Get individuals to play the three corners and have a fourth player interpret/synthesise the resulting interaction.

2.14 The transformative cycle

Much contemporary writing, journalism and even some of the futures literature concentrates on external change: new machines, cities, computers, space colonies, genetic breakthroughs and the like. But underlying such visible changes are more subtle processes that have much more to do with values, interests, cultures and language. These underlying change processes can often be characterised as *changes of meaning*. For example, changes in the composition and structure of families have less to do with crude demographics than with different expectations, the feminist critique of patriarchy, new technologies, new social and sexual values, etc.

If one examines many contemporary issues with care it is possible to distinguish four broad stages. These are:

1. Breakdowns of meaning (or simply 'problems'). These refer to understandings, concepts, values and agreements which once seemed sound and viable but which now no longer command wide and unquestioned support. Under this heading we might include concepts of work, leisure, health, progress and defence.

2. Re-conceptualisations (or 'new ideas'). These come in the form of proposals, suggestions, innovations, new — or renewed — meanings. At any one time there are many books, articles, papers and ideas being put forward by socially progressive observers and writers. Not all are associated with futures studies, but that is one of the places where new suggestions are given sustained attention. Among the new ideas now circulating we might include: the social wage, non-nuclear defence, ecologically sound ethics, small-scale production and self-reliance.

3. Negotiations and conflicts. It is characteristic of new ideas that they often tend to challenge dominant social interests. Similarly; far more are put forward than are ever

taken up and adopted. Thus new ideas are seldom adopted without a protracted period of negotiation and conflict. Indeed, most institutions have well-known strategies for resisting change. So it often takes a long time for ideas to filter through and receive serious considerations.

4. Selective legitimation (or 'winnowing'). Some proposals do get accepted and these become assimilated into everyday life and culture. Examples might include acceptance of the principle of sexual equality, organically grown food and universal suffrage.

These stages are illustrated in figure 2.20.

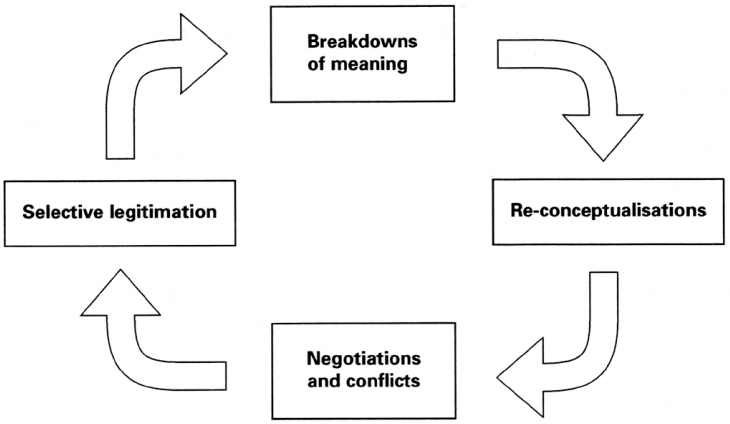


Figure 2.20 Simple T cycle

Notice that the cycle has no end. The cycle is one way to think of the continual process of social ordering with the old embedded in the new. The diagram suggests that once meanings have become accepted they are again subject to change and possible breakdown. One drawback of the transformative (T) cycle is that it does not show up important continuities of culture and tradition. Nor should it be taken as a theory of social change. However, as a tool for understanding the evolution of contemporary issues it does have a range of uses.

Figure 2.21 further develops this cyclic map of the change process.

1. Look at figure 2.20 and try to locate ideas from a *range* of different areas within it.

2. Pick an issue of interest to you and see if you can analyse it in terms of the stages given. Don't hesitate to omit stages or to put in new ones if you think they are needed. The cycle is only a guide and not an end in itself.

3. Have students explore figure 2.21. Look at their thinking in questions 1 and 2. Ask how this image will enhance the ideas they have already explored.

4. What does the centre of 2.21 mean: 'Autonomous recovery of meaning'?

5. Comment on the idea that understanding 'breakdowns of meaning' is a pre-requisite for resolving global problems. How might the idea be applied on a wider scale? See 'The transformative cycle' by Richard Slaughter.[6] This essay expands on the overview given here.

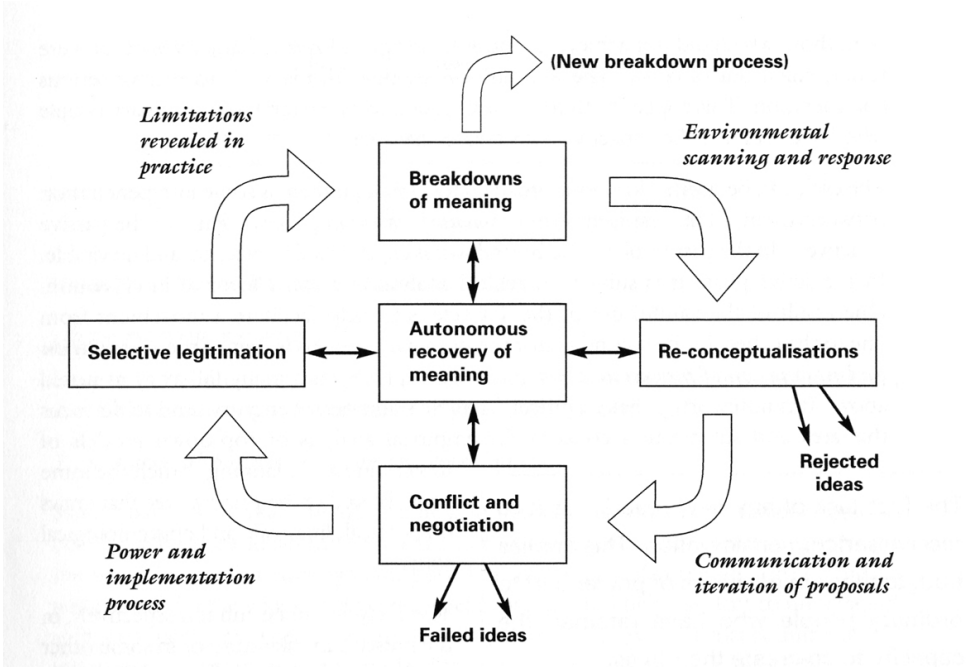


Figure 2.21 Developed T cycle

Here we can see how the process works as ideas are put to the test and accepted, modified or rejected accordingly.

Reflection 4

2.15 Education and change: an argument for education for the future

Critical futures studies is unquestionably a social project. Its emphasis on developing practical strategies to engage individuals, their communities, governments and business in developing sustainable futures is also unquestionably educative. It therefore makes a lot of sense to situate futures studies within educational settings.

Currently schooling looks to the future as a problem that needs to be addressed with very limited conceptual resources. Educators tend to draw on the past in order to project the future. In 1969 Neil Postman and Charles Weingartner wrote a scathing attack on the American education system. They felt schools failed to meet the future in any meaningful way. Change and schooling seems to be an oxymoron they declared. Nearly thirty years after Postman and Weingartner another American, Nicholas Negroponte complained that 'there is little fundamental difference between the way we teach today and the way we did one hundred and fifty years ago'. His point is that a surgeon from 1850 would no longer be allowed to practice medicine today, yet a teacher from that time would feel at home in a classroom of the twenty-first century!

The question of whether schools can fundamentally change is open for debate. What is clear is that futures studies has a contribution to make to schooling. It offers a rationale for shifting the focus of learning from the past – what has worked — to the future and what will equip us to deal with emerging issues that have never before faced humanity.

1. In the light of the transformative cycle, where would you place futures education?

2. Ivana Milojevic offers a clear over view of the current environment for education.[7] Have students discuss the alternatives and reflect on those areas that their own educational experience connects with.

3. What does the role of hope have in developing alternative futures for education?

2.16 Futures in education

To make anything new happen, we need a rationale. Futures education rests on at least four central ideas. First, *rapid structural change tends to make many past assumptions, meanings and purposes redundant*. For example, we can no longer assume that the earth is vast and inexhaustible. So the meanings of concepts such as growth, progress, health, defence, etc., change dramatically in a truly post-industrial world. The purposes that, to some extent, motivated earlier times (e.g. the conquest of nature, erecting national boundaries, defending exclusive cultures) are no longer appropriate or possible. Therefore, past experience becomes less reliable, less authoritative, because it relates to a world that is, in many respects, being left behind.

Second, *careful forward thinking — or foresight — is preferable to crisis management*. In a world that is physically and socially interconnected, many consequences are *displaced* in space and time. Acid rain, the mining of uranium, ozone depletion, terrorism and inappropriate educational goals are examples of a growing category of human activities that have their *origins* in one particular place at a particular time. Yet their *effects* turn up in many other places later. This fact makes it clear that foresight, futures thinking, and hence futures education, have an important role to play in our 'brave new world'. Successful foresight permits a saving of the time/energy/money that would otherwise be expended clearing up the mess. It also means that we can respond to early signs that a system is under stress and change our behaviour before the system collapses. The foresight principle holds true in many different contexts: in fisheries, ecosystems, atmospheric pollution and the depletion of resources. In other words, careful foresight gives us some protection against the dangers of exponential growth in a finite world.

Third, *images of futures profoundly condition the present and affect what people consider worth doing*. Individuals have their own images that help to define their present role and future ambitions. A group's images of future goals help to determine present strategies. Powerful groups use images to persuade others to buy products, consume particular resources or services and give support to projects. Such images are continuously negotiated at all levels of society, though often in implicit, hidden, ways (for example, through fiction, advertising, architectural panoramas and glossy project brochures). By focussing on these images and the way they function, we can gain new insights into social and cultural change. Moreover, we can use imaging as part of a deliberate process to move us toward the kind of futures we want.

Finally, and this is the key, *most young people are already interested in futures*. They do not need to be forced to consider it because they are naturally interested in the unfolding of their own lives. Many have fears about such threats as violence, unemployment, pollution, wildlife extinctions and nuclear war. It is responsible to help students channel the energies that support these fears into strategies that address the source of the fear. This is known as 'the empowerment principle'.

So, while educational institutions have strong roots in the past, they cannot simply try to reproduce the past. They require credible future alternatives in order to make sense of the present and to establish appropriate strategies and directions. Leaders in any field have a long-term vision of the future. But most politicians lack such a vision and are merely administrators. For their part, educators tend to be too inward-

looking and preoccupied with running the present system on a day-to-day basis. Both groups may be 'minding the shop', but few are 'scanning the horizon'. The lack of long-term vision translates into a lack of direction and purpose in the present. This is irresponsible, given the dangers — and opportunities — facing us.

2.17 Underlying purposes of futures education

Futures education is still being developed, so hard and fast rules should be avoided. However, four suggestions seem to emerge.

In the first place, futures education is about *providing the means to think ahead*. Foresight involves valuing the human capacities that enable us to move out of the here-and-now (and developing them to new levels), using futures concepts and applying futures methodologies. Second, futures education seeks *to provide facilitating contexts*. That is, places where people can safely hone their futures-imaging, futures-shaping skills. From these contexts spring the frameworks of support that unite people from different cultures in their search for a new world order. Third, futures education appears to be about *the re-negotiation of certain fundamental meanings and assumptions*. For example, the earlier meanings of terms like: growth, wealth, health, defence and sustainability tend to have decayed and need to be continuously reinvented. This is the particular focus of *critical* futures study. Finally, futures education offers an integral strategy that incorporates the four quadrants described in figure 2.2. *By recognising the layered nature of human reality* and actively developing processes that engage students and their teachers in synthesising within and across these layers, effective responses begin to emerge to the metaproblem as it is experienced in both the personal and social contexts. These four strands of futures educations are summarised in figure 2.22.

Foresight	Strategic responses	The application of futures concepts and methods
Participatory processes	Collective purpose	Facilitates opportunities to hone futures thinking and anticipatory processes
Critical thinking	Analytic insight	Re-negotiate meanings and assumptions by questioning the 'real'
Integral perspective	Synthetic vision	Synthesis of meaning in light of layered reality

Figure 2.22 Four strands of futures education

It is through the critical, that probes beneath the surface and looks more deeply at common assumptions, and the integral, which offers a way of understanding and engaging with layered reality, that long-term solutions and social innovations begin to emerge. Futures education, by establishing contexts for strategic foresight and collective processes, establishes a learning culture that facilitates the deeper processes of analysis and synthesis from which new frameworks of value and meaning may arise.

2.18 Implementing futures education

There are basically three approaches to implementation.

1. The introduction of discrete futures units or modules into an existing curriculum program.
2. The introduction of futures at the curriculum level.
3. The reconceptualisation of a schools' *modus operandi* according to futures concepts and methods.

Approach three is the most ambitious and it has not been widely tried. It does presuppose that adequate training, materials and leadership are present locally, and this is clearly not often the case.

Approach two requires that a 'prime mover', such as a principal or curriculum coordinator take on the task of a school-wide shift in content and process. In current circumstances this may be difficult. Nevertheless, given the right environment and support, it can represent a viable strategy. When teachers are given the time to familiarise themselves with futures concepts and tools, many will use them and change what they do in small but significant ways. Since futures is a cross-curricular dimension it can be approached in this way. However, the danger of a cross-curricular infusion model is that the innovation has no particular 'space' in the curriculum and may hence be disregarded.

The first approach remains the commonest since it means that highly-motivated individuals can innovate in their own classrooms without disturbing established procedures elsewhere. It is therefore becoming increasingly common for general studies, social and life-skills, careers, domestic science, languages, drama and design to include an explicit futures component and many new courses have been designed along these lines.

Very occasionally a new insight or approach will illuminate the taken-for-granted world in a new way. This was true of the theory of evolution. It was true of quantum theory and the view of planet Earth from space. In a more modest way futures in education represent another paradigmatic shift of perception. The weaknesses of some early approaches have now been corrected and a systematic basis for futures work is now available. This means that schools can take up the available tools and understandings and integrate them into every aspect of their work.

Futures is not simply another subject or curriculum focus entering into competition in an already overcrowded curriculum. It is a true meta-perspective grounded in a coherent body of theory and practice. Far from being a distant abstraction, the study of futures has now become indispensable within education, as there are few subjects not being transformed by the scale of social, technological and economic changes that are part of the fabric of twenty-first century life. Futures studies enables processes of cultural editing to be woven into educational settings in a manner that enhances the curriculum and actively engaging with student concerns and interests. To draw fully on this field of enquiry is to open up new options for innovation and development. It is to bring into schools the means to participate fully in the transition process and thereby fulfil their obligations both to individuals and to society at large.

1. Consider a paper by Marcus Bussey on 'educational scenario building'. Have students explore the scenarios offered, choose one that interests/inspires them and ask: What would we need to do to reach their chosen image?[8]

PART 3: FUTURES CONCEPTS AND RELATED TECHNIQUES

Working with time

How we think about time is central to how we think about the future. Temporality is one of the defining features of our humanity. Western consciousness has been driven by the clock for several centuries now and much that we take for granted, from school time tables to the three or four year electoral cycle, are inventions of our bureaucratic rational approach to order and the need to structure popular culture.

Advanced capitalism and globalisation have both reshaped our experience of time. Speed and instant gratification are hallmarks of success and enthral many of us. The various social actors (politicians, economists, bureaucrats and policy makers) can be seen adopting 'temporal postures' in order to understand and create the future. The logic behind such temporal strategies is that, as cultural historian Pitirim Sorokin put it 'time is the basic category of any becoming'. Much of the work of futurists is to challenge the dominant approach to time and the short-termism that lies at its heart.

3.1 Metaphors of time and the future

Time is a basic quality or condition of our lives. Our understanding of it is shaped by language and culture (see following section). Time has been measured for many centuries but the notion of Western linear time is relatively recent. It only became increasingly dominant when clocks became widely available in the Middle Ages. Before this period time was much more closely associated with natural rhythms and cycles.

The Western view of time suggests that it 'flows' in a one-way 'direction' from past to future. It is often embodied in the metaphor of a stream or river that bears us relentlessly forward and presents dangers that require careful navigation. Yet we are sometimes told not to 'waste' time — as if it were a quantity or resource. The saying 'time is money' reflects a particularly Western view and may contribute to the anxiety which is one of the features of Western linear time.

Other metaphors for time include the dice game and the roller coaster (figure 3.1). In the former case an underlying assumption is that history is a result of sheer chance. In the second everything is pre-determined and the important thing is to hang on and enjoy the ride.

Time is not a simple matter and no single metaphor or approach can describe it fully. As individuals we are always immersed in a particular web of metaphors about time. It is useful to become aware of how these shape our perception and order our reality so that we can begin to consciously choose between a variety of interpretations. The questions below can help to begin this process.

Similarly, the future is often seen in terms of particular metaphors. One of the commonest is that it is a blank space. This suggests that it is something that cannot be known. It is an absence, a kind of vacuum. This can be seen as a reflection on the poorly developed conceptualisations of the future found in Western cultures. Another is the crystal ball. If we peer into it, what we see will enable us to make predictions. Here is an occult, or non-rational, view of the future; one that owes

much to images of gypsies and fortune-tellers. Not too dissimilar is the view of the future as a blank screen upon which we project our hopes and fears in the present.

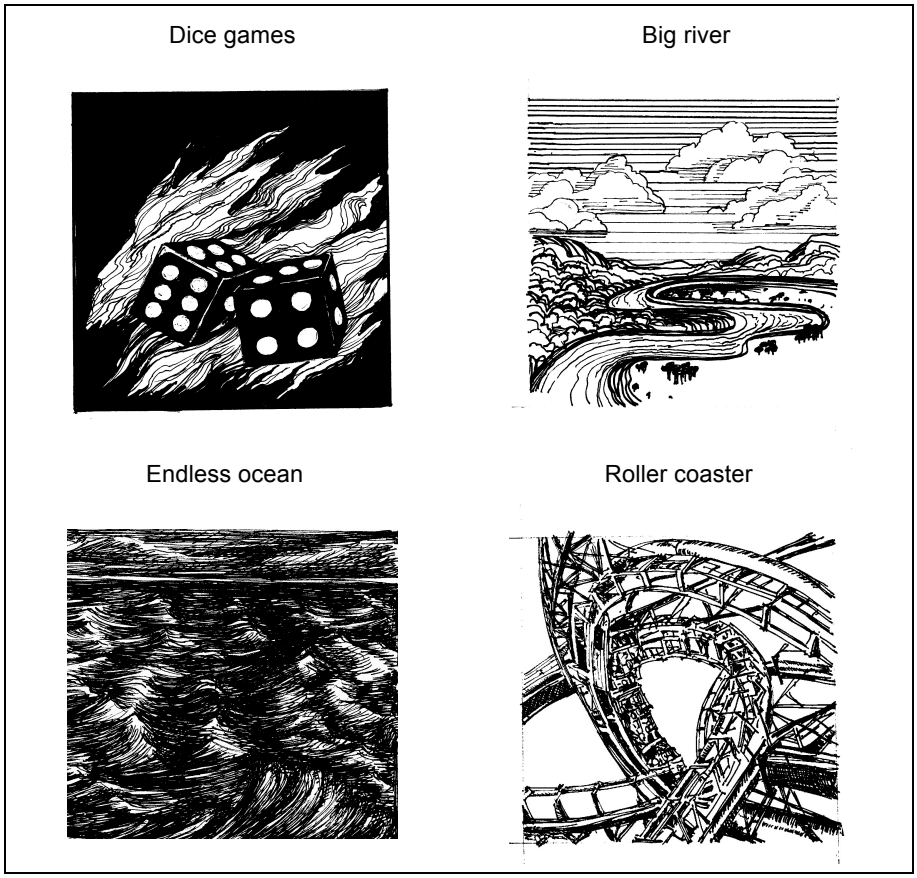


Figure 3.1 Metaphors for the future

Or the future can be seen as a machine. This is the default view of a technical culture where the future is very commonly over-identified with developments in science and technology. These tend to be seen not as means to carefully chosen ends, but as ends in their own right. The resulting scenarios have been exhaustively rehearsed in science fiction. Technological determinism is arguably one of the most powerful myths of the industrial era.

1. Having explored figure 3.1, have students illustrate three contrasting metaphors of time or the future in three different images. Have them comment on what the images are saying about each.

2. Have students choose some common sayings about time or the future and comment upon their validity and usefulness.

3. Have students invent a metaphor that expresses their own views of time. Ask them to describe some of the wider consequences of their metaphor(s) becoming accepted.

4. Have students carry out a small-scale study into the main benefits and drawbacks of Western linear time.

3.2 Exploring time and culture

Different cultures have understood time in different ways and these basic understandings have shaped the way that social life is organised. Non-Western cultures may use Western linear time for certain purposes and yet also retain more traditional models in which time is seen as cyclic or static. Some cultures tend to view the physical world as the outer layer of a largely intangible reality that is beyond time.

It is easy to dismiss non-Western views of time but in so doing we would lose much of its richness. The questions in figure 3.2 show some of the many concepts of time that permeate culture. It clearly plays a central part in conditioning our views of the world. The following exercises provide systematic ways of looking at time and its impact on individuals and cultures.

What is time?	What is 'deep time'?
How do we perceive time?	What is meant by 'subjective time'?
Why can't we see time?	Why is time said to be money?
How does clock time differ from other kinds of time?	How do summer and winter time differ?
What happened before clock time was adopted?	Why does time need to be saved?
What is Greenwich Mean Time?	Why do we sometimes try to 'make up for lost time'?
What is the date line?	Why do stories sometimes begin 'once upon a time …'?
What is a light year?	When did time begin, and when will it end?

Figure 3.2 Questions about time

1. Have students begin to explore their own experience of time; i.e. establish connections between their experience and the wider cultural sense of time. How is time perceived? What metaphors are in daily use? Have them identify how different areas of their experience are affected by time (e.g. measurements, ageing, time use, schedules, deadlines, seasonal variations, etc.).

2. Have students make some observations about time use. Encourage them to keep a log of how they spend time and of the surrounding circumstances. Have them outline a particular day and note how their perceptions of time change during different circumstances. Have them discuss the results. Identify the questions which most interest them and which warrant further attention.

3. Have students explore the social and cultural context of time. Using their own and others' logs, have them identify ways that the life of the community is affected by time. They can identify specific social activities for further study (e.g. recreation, leisure, work). They can identify and discuss some of the hidden assumptions and metaphors surrounding the social use of time.

4. The history of time. Have students find out how the Western sense of time developed. What are the origins of our dating system? Why do we have a twelve month calendar? How did the transition from agrarian to urban cultures affect the time sense? What were the effects of industrialisation and the idea of progress? What cosmic myths are associated with Western time?

5. A cross-cultural perspective on time. Have students investigate a culture that does *not* have a linear view. Examine cosmic myths, ideas of continuity and change, destiny, technology, personal achievement, etc. Have them comment on the similarities between their own and another culture's view of time.

6. In groups build time lines on various issues of current concern. The following is a list of some suggested topics:

- Forests
- Transport
- Industry/technology
- The family
- Sport
- Entertainment

3.3 Time lines and choice

Timelines of settings allow us to explore alternatives to the present and also alternatives to the future.

The time line in figure 3.3 illustrates how a child thinks about the future in terms of the possible and the preferable. Choice is an important ingredient in empowering students in the face of rapid change and the sense of anxiety that accompanies it. An awareness of choice and the uniqueness of the present is important when considering how to meet future challenges.

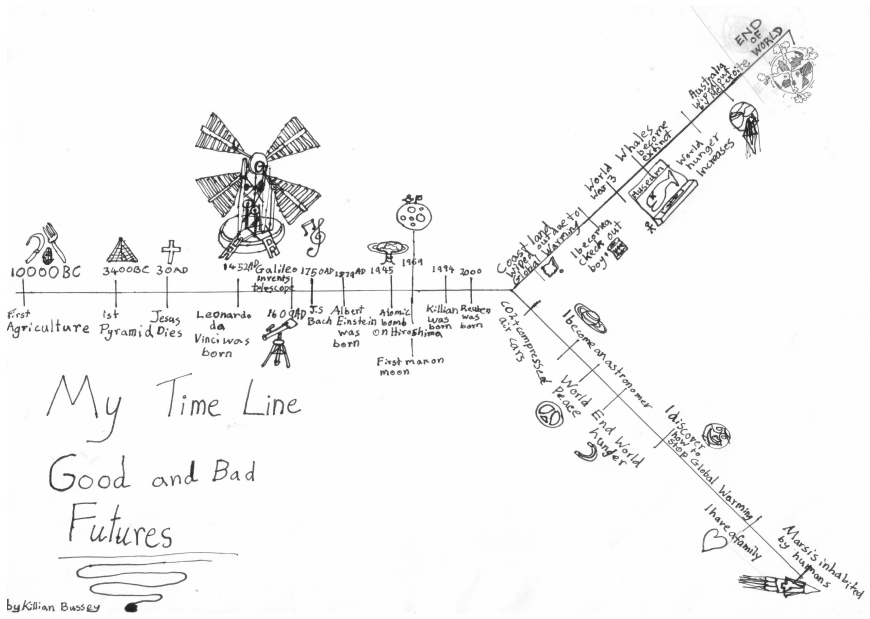


Figure 3.3 Time-line of alternative futures

1. Have students develop timelines for the past. Choose a point to interrupt the time line with an alternative. This activity helps us understand that the present is unique, being merely one possible set of circumstances that could have arisen.

2. Have students now construct thematic timelines (focusing on an issue like land clearing, globalisation, or war) and project them into the future allowing for two contrasting futures.

3. Have students display timelines and discuss the choices involved in leading to these alternative futures.

4. Have students select a range of choices from their discussion and explore the values that underpin them.

3.4 Backcasting

Backcasting turns time lines on their heads. This is a simple technique that allows people to think back from a desired future. Take a theme and imagine a desired future twenty years from now. Place this future on a time line and proceed to work back from it asking: what happened for this to happen? Keep asking this question until you arrive at the present. You may find you have more questions than time and that you need to extend the future to accommodate all the questions and responses you receive.

This technique is most effective when applied to real situations that affect the students and with which they can actually engage. It is having the ability to engage which really empowers them and gives a sense of excitement and practicality to what can otherwise seem empty processes. The whole point is to run a backcasting session and then actually try to implement the actions that it develops. Critical reflection — the futures loop and the change cycle — then steps in as the process unfolds and unexpected outcomes spring up.

Possible themes:

Truancy

Theft in School

Vandalism — in school or locally

Lack of resources

School tuckshop

Urban degradation

Lack of library books

More school excursions

Neighbourhood violence

Stress

Drugs at school

3.5 Ways to the future: the probable, possible and preferable future

Timelines allow us to explore choice. Choice does, however, need to be directed and futurists have found it preferable to think in the categories of probable, possible and preferable futures. This thinking allows students and workshop participants to look at issue from a number of distinct directions.

Probable futures are those that require the least amount of engagement to realise. They emerge from a business as usual mindset and simply require people to keep doing what they are doing.

Possible futures are those that allow for a degree of social engagement from government, community and key stake holders. Such futures usually soften the impact of the probable without challenging the deeply engrained values that order social reality. Still, they are better than nothing.

Preferable futures are those outcomes that most closely match the desires of the participants. They are not win-win situations as there are vested interests who will definitely perceive alternative futures as a threat to their interests. They will actively work against the vision. Yet the preferred future is one that still feels within reach. It is a future waiting on the horizon.

1. Use the grid below with students and ask them to pick an area to explore. Three are suggested. The exploration can be done descriptively in writing, with images or enacted.

Issue 2050	Probable	Possible	Preferable
Transport			
Environment			
Poverty			

2. Have students reflect on the figure 2.16 on worldviews. Get them to discuss the values that underpin both the industrial and emergent worldviews. Now ask them to think like a good industrialist and a social change advocate. Place their possible choices in the grid below.

Worldview	Probable	Possible	Preferable
Industrial			
Emergent			

3. How different are their visions of the future? What values do they hold that might lead to any such differences that may arise?

3.6 Thinking about the present: linking past, present and future

The English language separates past, present and future into three distinct tenses. Some of the meanings associated with the tenses are as follows:

Past — history, experience, memory, identity, upbringing, achievements

Present — the here and now, fleeting moment, focus of attention

Futures — images, intentions, purposes, projects, plans, hopes, fears

The point here is important but subtle. It is that past, present and future have to be *distinguishable* one from the other, but they are not *separable*. The boundaries between them are fluid. Consider how past events affect the present and future. Think about how present choices and actions draw on past knowledge and also affect the future. The futures that become our present develop from short- and long-term processes in which we are all involved. Decisions to 'opt out' are decisions nonetheless and they have consequences.

It is a fact that the human body is restricted to a fairly narrow present. But the mind, imagination and spirit can range out over immense areas of space and time. The diagram in figure 3.4 takes up this idea and suggests that the present cannot be understood simply as a fixed period of time. The question 'how long is the present?' can be answered in the following way: it may be short or long depending upon how it is understood and what the focus of attention is. In other words, there are choices.

The process of moving imaginatively out of the present can be escapist if one attempts to remain in the past or future. The most useful journeys into past and future are those that re-connect with the present. Figure 3.4 captures this interactive process. In this view the present is 'woven' or 'constructed' with the help of the insights and knowledge gained. To engage consciously in this process is to widen the boundaries of the present. It is useful to see the 'here and now' or the 'bounded present' as a point of origin for longer-term views. These re-connect us with the wider spans of space and time that, by virtue of culture, history and powerful technologies and processes at our disposal, we already occupy. This wider notion of the present is likely to be part of any sustainable worldview.

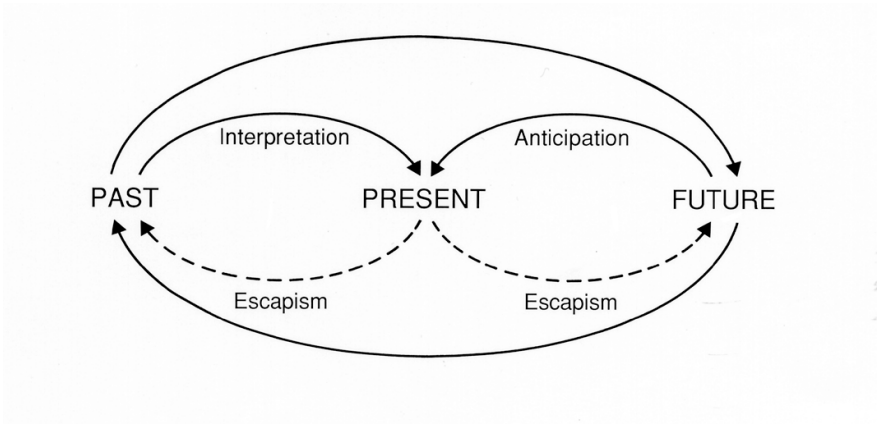


Figure 3.4 Interaction of past, present and future

1. Students can attempt to answer the following questions: How old is language? How far into the future do present decisions extend? How long is the present for (a) a racing driver, (b) an artist, (c) an architect and (d) a mystic?

2. The 'escape' into past and future can take many forms. Have students describe two of each which are familiar to them (e.g. TV, films, computer games, virtual reality, some young people's fiction.) What is the appeal and the cost of each, in terms of their escapist attraction?

3. Explore the notion of a 'self-fulfilling' prophecy — the way we create things the way we expect them to be. How does it work? What are the costs?

4. The 'bounded present' or the 'here-and-now' has a number of important drawbacks. Ask students to suggest what some of them may be.

5. Have students outline an argument for inventing new words to describe the links between past, present and future. Ask them to invent some terms that they consider suitable for wider use. Ask them to explain their choices.

5.7 Extending the present

How long is the present? A moment, a minute, an hour, a day? We do not often stop to consider such questions. Everyday activities such as typing and driving are two activities that require concentration within a fairly narrow time span. Yet there are other situations that require reflection, suspension of judgement, careful preparation or forethought. There are also processes that our culture has created which may extend over millennia. For example, plutonium is a lethal man-made substance with a half-life of about 250,000 years.

So on the one hand we have a common understanding of the present as a fleeting moment (the here-and-now) while at the cultural level, it may be a quarter of a million years. Clearly there are numerous choices to be made. We tend to utilise different notions for different purposes, but without thinking about them very clearly. For the purpose of obtaining a grasp of our own context in time, our own particular span of history, we require a notion of the present which recognises that we are: rooted in the past; responsible for creating our near-term futures; and also responsible for protecting future generations. In other words, by virtue of our deep connections both with past and future, we have a tangible need for *an extended present*.

The past has shaped us and the world we inhabit. We, in turn, add our own contributions to shaping the world to come. Some way is needed of recognising these relationships without overwhelming us. Elise Boulding has suggested that we use the notion of *a 200 year present*; one that stretches some 100 years back and 100 years forward. Figure 3.5 gives a visual description of this powerful idea. This time period has an organic quality because we are so richly connected to it through customs, institutions, values and, not least, through our families. The figure shows a chain of family relationships drawn from the viewpoint of our own time. The links in this chain are the people who have lived before us and those who will live after. Some of the people in our past can be consulted directly, through their possessions or through the historical experience of their generation. The people of our future can be considered by anticipating future conditions, by imaginatively constructing images and projects of futures and by extending forward the boundaries of the ethical community to which we belong. A simple matrix can be used for looking at some key aspects of this process of cultural change.

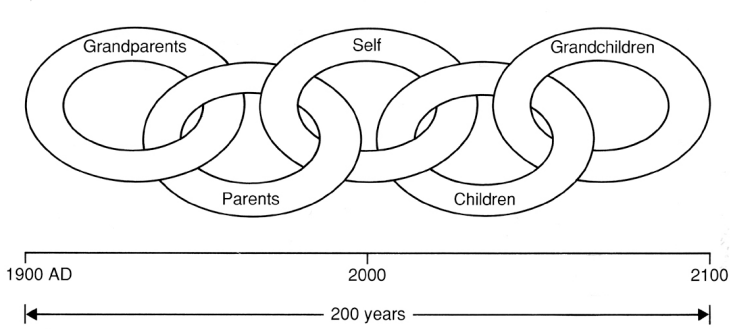


Figure 3.5 The extended present

To summarise, the present can mean many things depending upon the activities, purposes and perceptions involved. The idea of using an extended present as a new

'default' notion is potentially very powerful. If we choose to acknowledge our debt to the past and our responsibilities toward the future, such a notion could restore some of the important connections that exist between them.

1. Have students carry out a '200 year present' exercise. To begin with they can interview their grandparents, members of their grandparents' generation, or carry out some research among standard historical sources to investigate some of themes suggested in the diagrams.

2. With a view of the last 100 or so years in mind, students can then turn to the next 100, that is, to their own children and grandchildren. Here it is useful to provide them with material from newspapers and magazines that explores twenty-first century themes. Futures files are very useful here (see section 1.10: A class project). The object is to use the last 100 years as a springboard into the next 100. The themes they identified earlier now become strands that can be extended into the future. Over time they can develop these themes and outline their own perspective for this time.

3. The '200 year present' exercise can extend over some weeks. When done well, it can provide the basis for intelligent thinking about the twenty-first century. The material developed can be used for other projects, for art exercises, short plays and so on. While apparently simple, the overall process overturns the traditional idea of 'here-and-now' and opens students' minds to social processes over a much broader span of time.

3.8 Tradition / continuity / change

The previous two sections illustrate how the present is not simply a moment in time. It is built or constructed from the collective experience of the cultures that inhabit it. We can therefore suggest that the present is remarkable. Figure 3.6 illustrates this point. We all face choices regarding our orientation in time. Do we look fixedly forward, or long for the past? These choices are not black and white but negotiated and contested regularly within society. Individuals and societies must deal with tradition, continuity and change. Each civilisation privileges these according to the values that underpin and define it.

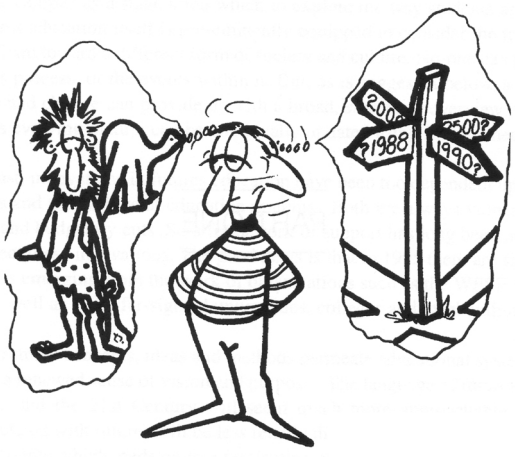


Figure 3.6 Standing at the crossroad of past and future

Most ancient civilisations held tradition in high regard. Just think of Confucianism and ancestor worship. Modern Western societies tend to privilege continuity — looking back but also demanding change. Capitalism itself is deeply psychologically dependent on novelty, hence it can be seen to privilege change.

Here is a quotation from the annual report of the Coca-Cola company from 1996 that encapsulates this deep admiration for the speed of change:

> A billion hours ago, human life appeared on earth. A billion minutes ago, Christianity emerged. A billion Coca-Colas ago was yesterday morning.
>
> *1996, Coco-Cola Annual Report*

1. Ask students to discuss how the quotation reflects an historical view of the present that privileges change over continuity and tradition.

2. Have students reflect on aspects of the tradition-continuity-change continuum that they feel comfortable with.

The figures 3.7 and 3.8 offer other ways to think about the constructed nature of the present. Like the idea of the 200 year present (figure 3.5) they illustrate how time folds around us and, from the human perspective, appears as a seamless flow. It is only when we analyse time that we break it up into units such as hours, days, weeks, years, centuries and so on. Time is relative to the one experiencing it.

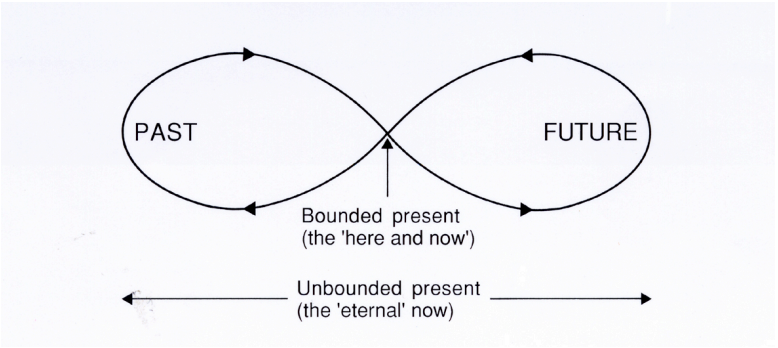


Figure 3.7 Weaving the present from past and future

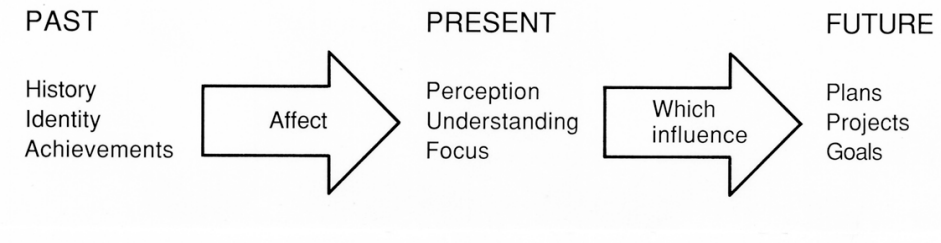


Figure 3.8 Connections between past, present and future

Have students look at the life of a butterfly:

1. Get them to draw a time line for it from egg to adult

2. Get them to compare this with their own life time expectancy. Where do they fall in the life line of the butterfly? Is the butterfly aware of how 'short' its life is?

3.9 The earth in one year

It is important to get time in perspective and to acknowledge how small our human presence has been in the scale of things. Look at figure 3.9. This image shows us that we have been active on the planet for the last few minutes of the 'year'.

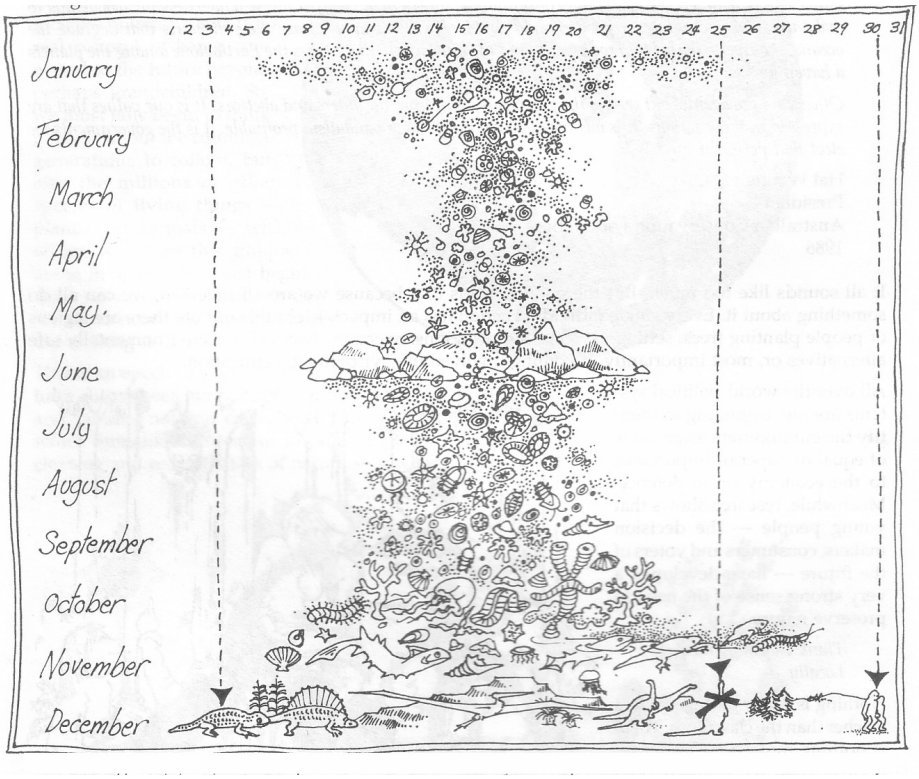


Figure 3.9 The earth in one year

Despite our short presence on the planet we have had an immense impact. Futures studies is a response to the impact of human activity over the past two centuries.

There are two concepts that can now be introduced. Both act as 'principles of present action'. The first is that *we are all ancestors of the future*. In the light of this understanding we need to ask ourselves: how will we be remembered by future generations?

1. Have students enact a scene from 2220: 'A Remembrance Day' for those who turned the planet around in 2020.

2. Have students develop a page from a history book from 2220 on any theme. Here are some suggestions: peace, trade, environment, school.

The second is that *the future is with us now*. As time is folded around us we do share a temporal space with our grandchildren. Our actions are directly linked with their experiences. We need to ask what are we doing now to ensure their well-being?

3. Have students enact being a grandparent with a grandchild on their knee. The grandparent is telling them about what they did when they were young. Have things changed? If so how and why?

Reflection 5

3.10 Participatory futures

Social processes are individuals working towards the expression of shared ideals. The classroom is a microcosm of these ideals and the forces that generate future possibilities.

It is part of the worldview of the industrialised world that the individual is the basic unit that counts. Democracy has been designed to mediate between this isolated individual and the structures that maintain society. Schools and the educational philosophy that underpins them have been designed to foster this idea, with individuals being either successful or unsuccessful according to individual merit.

Much of the alienation and powerlessness experienced today across the globe is rooted in this sense of the isolated individual. Critical futures studies recognises that the individual is not an isolated being, just as the present is not an isolated moment. The individual is nested in a raft of temporal, spatial and cultural processes but has been encultured into a sense of their own autonomy.

Here we can return to the evocative image by Ken Sprague (figure 1.7) above. Participatory futures are those futures that are generated collectively in order to meet broadly perceived needs and fulfil broadly shared goals. In this process individuals are united against problems that previously were perceived as too big.

Some individuals have a vested interest in maintaining their isolation. These people risk losing personal autonomy and power to the group. This risk may be real, as in a dictator, or illusory as in a school friend or worker. The risk is a powerful perception. Futurists work to develop strategies for inclusion of such individuals but also acknowledge that some people will loose power and prestige when the future is altered. One strategy is to work at recovery of the lost individual by welcoming them into a new order.

In a futures workshop the resistors are very important as they hold the key often to the opening up of alternative futures. Their resistance increases when core values are challenged and overturned.

3.11 From short- to long-term thinking

Now we continue exploring time and how we can think about it. A central strand in futures thinking deals with the temporal context of human action. If we think short term our responses will be narrow and particular. As our capacity to alter extensive social and ecological processes grows so too our capacity to think and act at this level needs to become more sophisticated.

Short-term thinking and the politics of reconceptualisation

You're paddling down a stream. You round a bend and there before you is a huge waterfall. You don't have time to reach the shore. So, you begin paddling frantically. But it's too late, a strong current grasps your canoe and over you go. There is a brief moment of disorientation, panic. Your last thought is crushed by tons of cold white water cascading over black rocks.

Now run the scenario differently. This time the story begins weeks before your canoe trip. This time you invest a lot of time in planning. You look at contingencies. You study maps. You plan where you want to go and how long it should take. You are very careful to locate dangers, including waterfalls. This time you are prepared. You know that before approaching a certain bend it is wise to move in close to the shore. So, long before the river speeds up, and long before the spray appears, you know what to do. You set ashore, go round the obstruction and continue downstream. It is a successful trip. You reach your destination safe and sound.

Which of these stories most closely fits Western culture today?

We suggest that it is the first. Why?

The quick answer is that hardly anyone is looking very far ahead or using the many tools and methods that are available. While all normal individuals have the capacity for foresight, and some institutions use it for specific purposes, nations on the whole have very little. Why? There are many reasons. One of them is public scepticism: too many believe that you cannot know anything about the future. Another is that, as noted, short-term thinking is endemic. Most of those charged with political leadership are not leading but managing or administering on the basis of past experience. Another is avoidance, pure and simple. At some level people don't want to know about tomorrow; today is quite hard enough. Not far away is fatalism. One educated person said: 'we know the planet is done for, so why should we bother?'.

Here, as in so many other things, the old adage 'a stitch in time saves nine' comes into play. For the fact is that we have the necessary tools to look far into the future to plot a safe and sustainable course. We know that the future of social systems cannot be predicted. But the outlines of many different futures can be understood through a variety of methods and approaches. For example, we can:

- look back and develop a view of the 'historical trajectory' of the culture;
- seek to understand the present in depth;
- diagnose the difficulties we encounter in the standard world picture;
- assess which historical continuities and 'heavy trends' are likely to be sustained;
- analyse existing processes of change;

- evaluate further sources of change in the pipeline;
- outline major choices and alternatives; and, most importantly,
- discern sources of inspiration and hope.

What emerges is not a clear and objective picture of the coming years but a useful broad-brush map or 'future landscape'. This can be used to guide decision-making and to make careful preparations for future contingencies.

As noted above, futures work can be characterised by a loop made up of perhaps four stages. First: futures scanning; second: interpretation; third: action; fourth: evaluation. Hence the futures map is constantly refreshed and up-dated by this process. So is our view of the past. In fact past, present and future are 'constructed' from this weaving process, back and forward in time. It follows that the future map can never be complete. However, it is useful. Here are a couple of examples.

First, it was suggested above that the human species may already be using about forty percent of the land-based biomass in the world. If our numbers double over the coming decades this proportion could increase dramatically. If, for the sake of argument, it reached eighty percent, what does this imply for the rest of the natural world? Is it not obvious that, while the numbers involved are certainly imprecise, the message is very clear?

Second, we've also noted that conventional economics takes the view that 'growth is good'. The more growth, the more wealth. The more wealth, the more societies can expand and have ever-higher standards of living. And so on. But when growth is conceptualised and measured so as to omit environmental impacts and other long-term costs, it becomes invisibly destructive, leaching away the shared foundations of life on the planet. So the economic prescriptions currently driving the global system are clearly taking our species steadily toward the edge. The politics of reconceptualisation (i.e. seeing the much richer array of options and alternatives that are available) have barely started.

In both examples the same principle can be seen operating. If one takes a short-term view then many problems simply vanish. But, take a longer view, say twenty-to-fifty years and the outlook is transformed: the scene changes and much that was obscured springs sharply into focus. In other words, *we cannot begin to comprehend the present without taking into account its long-term extensions and implications*. We do not just mean future implications.

1. Have students look at their local community. What are three problems faced by the community in the next few years?

2. List a series of short and long term solutions these problems raise.

3.12 Time-frames

Time is constitutive of the social order and is one of the foundations of futures study. Behind many of the methods and proposals of futurists lies a particular set of determinants related to the social construction of time. For example, it makes a world of difference if, say, a cyclic or a linear model is used. The meanings and imperatives within such frames condition all that is proposed and attempted.

Futures study attempts to negotiate extensions of the chronically short-term time-frames that have become characteristic of Western cultures. But the point is not merely to extend the boundaries of concern forward in an undiscriminating and wholesale way. Beyond this is the task of assigning *different time-frames to different purposes* and, in so doing, to provide futures-related projects with a more durable foundation.

1. Have students pick three issues that require futures thinking.

2. Have them determine what time frames are best for each issue.

3. Do they vary much? If so, can they explain why different time frames emerge in different situations?

3.13 Critique of the minimal present

In daily life people appear to juggle time-frames with a fluid, unconscious dexterity. A series of temporally-related concerns structure our lives in ways that are seldom considered or reflected upon critically. But there is plentiful historical evidence that our time sense today is quite different to what it was, say a hundred, or two hundred years ago. Numerous writers have shown how that prior to the invention of mechanical clocks, the time-sense of societies was tied to natural rhythms: sleep /wake, day / night, summer / winter, etc.

With the rise of mechanical clocks a variety of social inventions became universalised: schedules, time-tables, the measurement and calculation of precise periodicities. Time changed from its previous organic character and became highly structured and differentiated. This, in no small way, permitted the coordination of increasingly complex activities and processes. Without this precision, the industrial revolution would never have happened. It was a product of the new time-sense every bit as much as it was of the new rationality of the enlightenment.

Since then the pace has quickened and time has taken on a particularly modern character. Time is now money. There is a new urgency: time must be saved. There is anxiety too, for time stretches out back and forward. It exceeds the boundaries of our own lives and may therefore appear profoundly threatening. The sense of threat was well portrayed by Stephen Jay Gould and others who described the effects of the discovery of 'deep time' in the Victorian era. It powerfully de-stabilised the self-understanding of those who had regarded themselves as the proud masters of nature, God's special handiwork; not the contingent result of untold millions of years of blind evolution and random extinctions.

Today, the work of science has again altered our time sense, but the results are not yet widely appreciated. As the technologies of time measurement have become more precise (and yet obscured from public view — how many people have ever seen an atomic clock, let alone understand how one works?) so a new conception of the present has been created. The measurement of duration has become increasingly precise and has created a machine measure of time that falls below human perceptual thresholds.

This may seem to contradict my suggestion that people find their way through space / time with great ease and fluidity. So is this a false problem? We don't believe so.

For actively structuring our individual and social use of time is a default notion of the present that arguably interferes with our ability to function in a dynamically interconnected world. We are referring here to the minimal present. When we have asked students 'how long is the present' one answer we frequently get is that it is fleeting: 'as soon as you try to grasp it, it's gone'.

This poses a real difficulty. While it may make perfect scientific sense to measure time in nanoseconds, such fragments are of little or no human use. In fact, it seems clear that the rise of a machine-derived minimal present is dysfunctional for people and cultures. If one cannot grasp the present, if one is not, in any sense, 'at home' in it; if it is too brief to connect with wider realities, one is truly lost in a very profound way, cut off, disconnected. Here, then, is a hidden contribution to the profound feeling of alienation so typical of modern societies. While such alienation may spring from a variety of sources, the minimal present clearly reinforces notions of separateness and isolation.

The default status of a minimal present actively misrepresents cultural and empirical reality. Each individual and all social groupings are embedded in a vast number of interconnected processes which extend throughout time and space. The atoms and molecules of human bodies originated in ancient stars. Our genes echo the origins of life upon the earth. The food and oxygen that keep us alive are re-cycled endlessly. As Charles Birch puts it:

> Every breath we take includes about a billion oxygen molecules that have been, at one time or another, in the lungs of every one of the fifty billion humans who have ever lived. The simple act of breathing links us in this curiously intimate way with every historical figure and the most obscure of our forebears in every epoch.[9]

This is a powerful insight which stresses our immersion in a web of relationships past, present and future. Similarly, the languages and cultures that sustain us have ancient origins. The cultural foundation we stand upon is a synthesis of the work of many generations. It follows that the decisions we make, the directions we choose, the futures we extinguish and those we enable all frame and condition the lives of our descendants. This interconnected reality is one of the fundamental characteristics of life. Yet none of these relationships has any meaning in the context of the minimal present. The interwoven reality of the universe is extinguished.

1. Have students develop histograms that try to incorporate the interconnections that actually constitute our social reality.

2. Now repeat the process looking at our ecological reality.

3. The same can be done again looking at the geological reality and universal reality of living in a 4.5 billion year old universe.

3.14 Exploring time-frames

Now we can consider the application of time frames to various social realities. With figure 3.10 as our starting point we can consider a variety of temporal contexts from which to develop a nuanced futures thinking that is responsive to the personal, the social, the human species and the ecological.

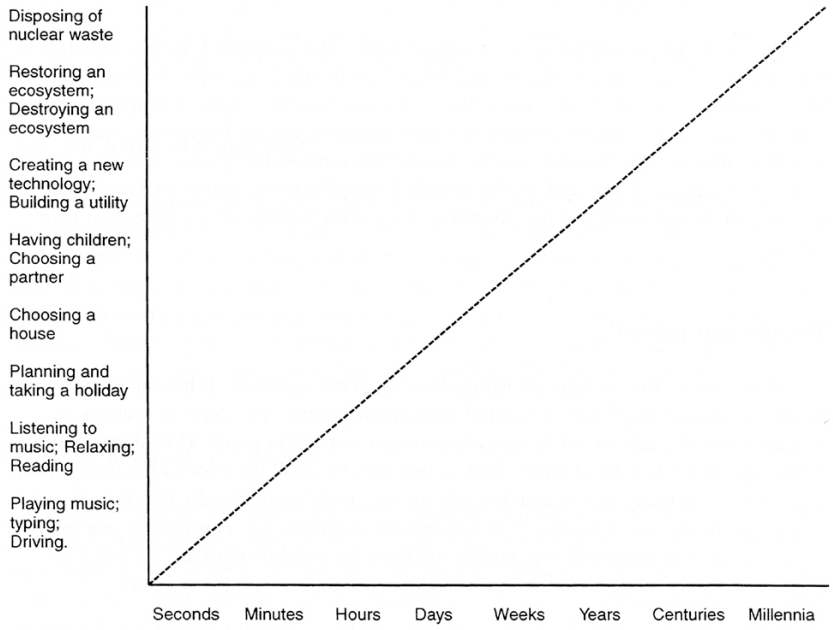


Figure 3.10 Different time-frame for different purposes

The one year present

A year is the time it takes planet earth to circle the sun once. It has therefore become a basic (if not the basic) unit of time measurement. The cycle of seasons, historical events, the duration of human lives are all reckoned in years. How does a year create a present? It is functional! That is, tied directly to all the cycles of annual periodicity. It is the primary time-frame for activities which fall into this rhythm: farming and crop rotation, finance, the delivery of educational programs, etc. Yet a year is too short to evoke the wider context and it is too short for strategic thinking. While it is convenient for many purposes, it cannot provide perspective on past or future.

The ten year present

Ten years is a sizeable chunk of a human lifetime, but not long on a cultural time scale. Yet it is long enough to provide insight into dynamic processes that exceed the annual periodicity noted above. It is ideal for noting environmental and ecological factors: changes in forest cover, sea level, atmospheric dynamics, animal populations, etc. In other words, the ten-year present is important in strategic thinking and in policy-formulation with regard to long term trends and processes. However, again there are limitations. It takes perhaps ten years to plan and build a major infrastructure item, such as an airport or bridge. But ten years does not allow for the medium-to-long-term effects of decisions, nor does it provide sufficient 'space' for one generation to consider the next in any substantive manner.

The fifty year present

We are now beginning to approach a more substantial time-frame. That is, one which can begin to incorporate some of the major concerns of a technologically advanced culture. Fifty years is long enough to have a clear picture of continuities, trends,

change processes over a culturally significant period. In this context the pattern of environmental and climatic change becomes much clearer. Similarly, enough social experience of various technologies (television, the automobile, computers, etc.) can be accumulated to make considered judgements about their impacts and implications. The choice of a fifty year present provides what is perhaps the *minimum* threshold for grasping the big themes (and problems) in human cultures and environments. The health of the oceans, de-, or re-afforestation, the growth and well-being of populations all begin to spring into sharp focus in terms of their longer-term status and the global dynamics associated with each.

The one hundred year present

At one hundred years we reach the present boundary of a single lifetime, so it may appear paradoxical to think of this as 'present'. Yet here the perspectives opening out above begin to settle into a long-term pattern. Long cycles can be distinguished. The rise and fall of regions, industries, ecosystems and cultures stand out clearly. In other words, a true historical perspective begins to emerge. Theories of history and of futures begin to flourish. Fleeting phenomena of long periodicity such as the appearance of (and threats from) astronomical objects such as comets become very clear. The long view begins.

The two hundred year present

We regard this as the ideal time-frame for cultures in transition, particularly if it is taken to embrace one hundred years of the past and one hundred of the future. As has been noted elsewhere, the view back over the last one hundred years provides the perspective with which to investigate the next hundred. Moreover, it is a time that we are organically linked with through our parents, grandparents and children. Even where such family continuities are missing, or unavailable, it is possible to make use of representative members of these generations. From these starting points one may begin to develop a kind of inter-generational biography or dialogue. Figure 2.17 provides an outline framework for developing an account of processes of cultural change over this time-span. This is one of many educationally productive activities which can develop from the use of longer time-frames.

Now we are not just looking at the rise and fall of populations and species communities but of cultures, empires and entire ecosystems. This is the threshold of the macro view of history, the panorama of the centuries, the big picture. Since this is the most significant of all contexts, it could be argued that the two-hundred year present is perhaps the *smallest* frame within which our long-term thinking, policy-making, educational planning and applied foresight should be conceived.

Beyond the two hundred year present

At this juncture the perspective shifts from the social to the species, from the familiar to the seemingly distant. Yet even here, the long view back to the origins can inform the view ahead. David Darling's excellent book *Deep Time* exemplifies this point.[10] Classical scholars, archaeologists, linguists and fossil hunters are engaged in the task of elucidating the past, of recovering from entropic decay the traces of past lives and cultures. These are noble professions. Yet, as noted, it seems to be one of the characteristics of industrialised consciousness that the view back takes precedence over the view forward. While these enterprises should be seen as complementary (to futures study), it should be obvious that we have reached a point in our collective

history when a great deal more effort should be devoted to developing long-term views of futures.

It is here in this vital imaginative/intellectual realm provided by the forward view that one can distinguish some of the most compelling options for human existence: a true rapprochement with the earth and its other life forms, a renewal of cultures in the light of higher-order human motives and ethics, obligations to future generations and an openly visionary view of what can be achieved beyond the sterile empire of machines and machine-led notions of progress.

It is at this point that the disciplined work of futures study merges with the speculations of the best imaginative artists and writers on the one hand, and the profound insights of spiritual wisdom on the other. This is the long view ahead. We do not confuse it with predictions or forecasts, both of which are creatures of the short-term present. This is the realm of vision, of inner sight, of the speculative imagination.

Springboards for the development of speculative imagination are plentifully available. They include: developing a vital concern for future generation, exploring the dynamics of cultural evolution, elaborating visions of sustainability, creating institutions of foresight and carrying out twenty-first century studies.

3.15 Choosing between time-frames

The purpose of the account so far has not been to lock our thinking into particular periods. The actual numbers of years used are merely a convenience. But the different, overlapping outlooks they provide suggest that there is a need to think more carefully about which types of activities fit into different notions of the present. So how can we decide? Here are some questions that may be helpful in particular cases.

1. What is the underlying purpose or focus?

2. Is there anything intrinsic about the focus or activity that suggests an appropriate time frame?

3. Can one foresee the time span over which decisions will be likely to extend?

4. Is there a precedent for choosing one period over another; was the choice a conscious one, and if not why?

5. Are there any distinct costs or benefits of choosing one time frame over another?

6. What interests or constituencies are involved, and what influence do they have over the ways the issue is framed?

7. What is the nature of the pressures to choose a shorter or longer time frame?

Such questions can help to clarify what time-frames may be appropriate in different circumstances.

1. Have students make lists of concerns that match the various 'presents' described above.

2. Have them look at the kind of actions that we are engaged in as a culture and place the implications of each within a present context.

Working towards transformation

So far we have focussed on the temporal concerns of futures studies. The discussion may at times seem philosophical and at one level it is but ultimately futures thinking is a practical activity. It involves people working with others to open up the present to alternative visions and thus return to us all some capacity to determine our own future prospects.

The following sections take up the idea of participatory futures discussed above in Reflection 5. Here we explore four other concepts central to futures thinking.

3.16 Images and their power

Images offer powerful clues to the future. They can carry strongly emotive energy and engage people in ways that their conscious minds might resist. Thus they are powerful tools in the futures' repertoire.

Here are three images to work with:

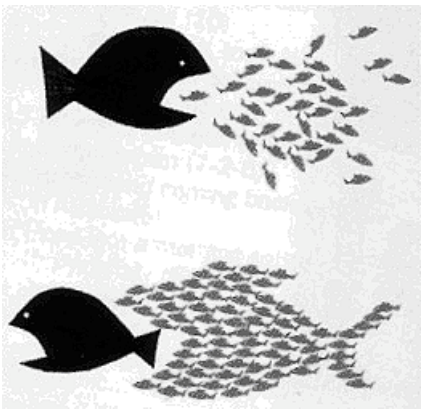


Figure 3.11 Collective action

Figure 3.12 Loss

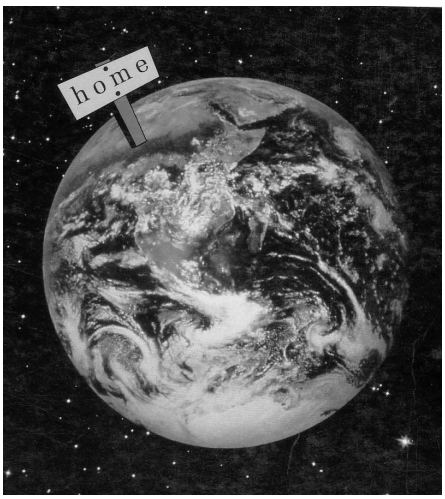


Figure 3.13 Earth in space

1. Discuss the importance of imagery. Ask student to break into groups and look at the values and messages being conveyed by these visual texts. Share the result.

2. List some of the dominant images of the consumer culture. How do such images define us?

Images are culturally generated tools that both maintain core social values and offer alternatives to these. The movie industry, particularly the American movie industry, offers strong mythic narratives that carry huge power. At the beginning of the twenty-first century there has been a proliferation of movies that explore some of the great Western myths. We have seen the *Gladiator*, *Troy*, the *Crusades* and *Alexander* to name but a few. There has also been the epic *Lord of the Rings* (made in New Zealand). Such movies confirm the West's belief in itself.

1. Have students discuss the dominant themes within these and similar movies. In the context of a post 11th September 2001 world, can they see how these movies reflect the West's, and particularly the United States', insecurity in the face of a growing critique of its global power? In what ways do such images provide comfort for a society under 'attack'?

Images also offer alternatives. The human being is an imaginative and creative being and it is in our power to actively dream and create alternatives. There have been instances in the past when new social orders emerged from a mixture of necessity and a desire for a better world. Both the United States and Australia have strong roots in dreams of a better future.

We do not, however, dream in a vacuum. Our psyches are permeated by many images that are often drawn from the popular media. Yet we can still approach the repertoire of images in our culture with a critical futures sensibility and create new visions. The human imagination will be treated more thoroughly below. For the time being consider the following image as permission to start dreaming (figure 3.14).

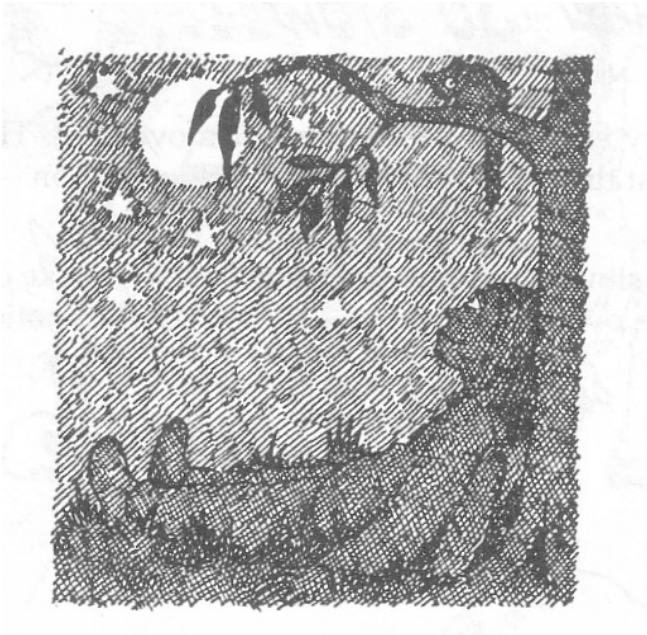


Figure 3.14 Dreaming

1. Get students to collect images that inspire them.

2. Have them list what it is about the image they are attracted to — the responses here need to be directed to affective states not acquisitive ones. They might write happiness, freedom or curiosity.

3.17 The foresight principle

Another application of imagination is the ability to foresee or anticipate. This ability has evolved over the millennia of human individual and social growth. It may well be the single most important gift of our species as it has the potential to enable us to overcome the current global and environmental and social crises.

Foresight is a defining feature of our humanity. We act and make decisions on what has gone before and what is expected or intended. The past has received ample attention from historians but until recently the future has been largely overlooked. It is now clear, however, that futures are at least as central a part of the human enterprise as the past is commonly held to be. The ability to pursue purposes, and formulate meanings, to decide consequences, to take responsibility for the consequences of actions — all these depend upon an open and undetermined future, which is continually scanned from within the moving present.

Experience is not simply a product of past events, nor simply a passive record of elapsed time. It is a product of the interaction of memory and foresight, of identity and purpose. In this dynamic process the yield of the past is symbolically transformed by being 'read-upon' as yet undetermined situations. The foresight principle is called into play through irreducible uncertainties created by the precariousness of life. Foresight is 'common sense' in that there is obvious merit in seeking to avoid dangers

and reduce risks. The principle is, however, easier to implement with individuals than it is socially.

Foresight cannot be identified with any single act or action. It is quintessentially a directed process broadening the boundaries of perception through careful futures scanning and the clarification of emerging situations: a vision of the mind rather than sight. It pushes the boundaries of perception forward in at least four major ways:

1. By assessing the implications of present actions, decisions, etc. (consequence assessment)
2. By detecting and avoiding problems before they occur (early warning and guidance)
3. By considering the present implications of possible future events (pro-active strategy formulation)
4. By envisioning aspects of desired futures (normative scenarios).

The first three perform guidance or early warning functions but the fourth goes beyond these strategic and protective interests to consider what is desired in positive terms. Here foresight intersects with creative and visionary work of many kinds. Since foresight springs, in part, from unconscious — or preconscious — sources, it cannot be reduced to a technique; it is grounded in innate human capacities and needs. Yet its social expression requires specific, rational institutional arrangements. So a balance is implied between the rational and the non-rational, between technique and the wider world of human significance supporting it.

To activate the foresight principle requires a measure of futures literacy, a command of a range of futures techniques and a commitment to an integral appreciation of human capacities. It needs both strategy and inspiration. This is a key to wisdom and an emergent wisdom culture. To avoid a flatland future we must turn inward and draw on our human capacities. This journey starts with us possessing enough foresight to recognise the imperative. It then unfolds as we collectively build the future into something approximating our dreams.

1. Have students work in groups and look at situations in the history that have required foresight.

2. A useful source is *Collapse: How Societies Choose to Fail or Survive*[11] by Jared Diamond. Look at situations described in this book and discuss when the foresight principle might have been applied. Ask how do groups become blind to obvious solutions?

3. Design a poster advertising the foresight principle.

3.18 Creativity and futures

When people begin to think about some of the major problems facing our civilisation, they often ask: 'what can I do?'. The implication tends to be 'I'm only one individual, how much influence could I possibly have?'.

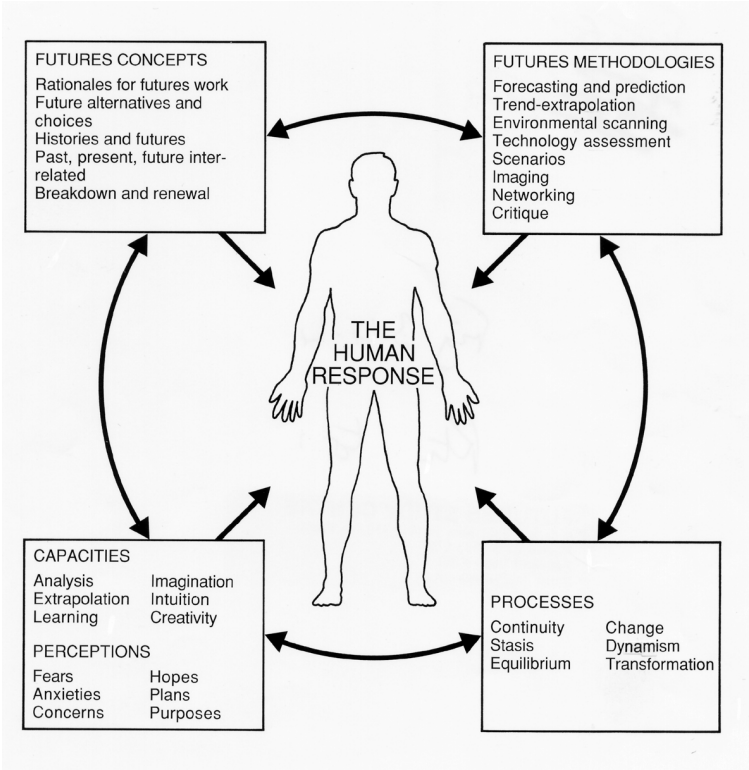


Figure 3.15 What can I do?

What can I do?

Figure 3.15 puts these questions in a context. It is a context supplied, in part, by the futures field. In the view taken here, the latter exists largely to answer such questions. So when they are asked, we can turn to some of the symbolic resources that are available. That is, concepts, capacities, perceptions, methodologies and processes. The point is that each individual has access both to the wider culture and to the more specialised resources available via futures. Hence, the 'what can I do?' question has very many specific answers. Four general ones might be as follows.

1. Deal with fears and explore high-quality images of futures.

2. Build up knowledge; develop confidence and understanding.

3. Explore issues and contexts via futures tools.

4. Approach problems and issues creatively, identify projects and proposals for constructive change.

This is one of many ways of applying creativity to futures. Yet if we explore the notion of creativity in a little more detail we will see that there are many more options.

How do artists, writers or architects go about creating new works? There is probably no single answer because creative people tend to be very different. Yet underlying these differences are certain common features. One would be that such people have spent some time getting to know their area and developing skills within it. Another is that they are not continuously creative. The old saying that creativity is one percent

inspiration and ninety-nine percent perspiration suggests that the ability to work consistently may be more important than creativity as such. Yet there is another aspect of the process that is often overlooked.

Creative people are by no means necessarily more creative than others. However, they may be better at *utilising* their creativity. That is, when an idea appears they are more likely to notice it, to record it and to apply it. Hence the saying that 'fortune favours the prepared mind'. What typically happens is that a new idea surfaces and provides an outline of a new project. It may only be the germ of an idea, a hint of a melody, a faint impression. But the next stage is crucial: time is spent working with the idea, testing it, sketching out alternatives. If one or more of these early sketches feels right then the chances are that it will be developed. Finally, perhaps after many months, the full-blown, final work will appear. What has this to do with creating futures?

Basically the process is the same.

In scanning the current environment one becomes aware of many problems and dangers. But the solutions are not always obvious. Time is then needed to inform oneself about a particular concern — say re-cycling or the environment. From these broad concerns there then follows a progressive focussing down upon a specific problem or issue. This preparation phase leads on to the creative one.

It may be that solutions are obvious and emerge as one proceeds. Or it may be that inspiration strikes unbidden. In either case, the important thing is to concentrate on possible solutions. It is the act of choosing and focusing that is important because *what we focus upon grows*! This is as true of negative states of mind as it is of creative problem-solving.

Creating futures, therefore, is a process made up of at least three elements.

1. Understanding the situation and the problems that have arisen in our culture.

2. Knowing how to respond creatively.

3. Relating the response to a vision or view of possible alternatives.

Creating futures essentially means 'acting creatively' and perhaps *linking* this personal work with social innovations (see section 1.11: Social learning and social innovation). Finally, note that all creativity, all innovations necessarily face resistance. So when a project or proposal is under development, innovators should *expect* to face counter-pressures (see section 2.14: A cycle of change).

Creativity can be taught and learned. It is not mysterious. It works best in a futures context when a person's inner purpose (direction, values, vocation) aligns with a clear external need, is augmented by futures-related skills and supported by some kind of effective organisation or network. When these elements are properly combined and working together, people no longer feel helpless. They feel, and are, empowered and powerful.

As well, the knowledge that each of us is not alone and that many people are working at solving the global problematique in their own personal sphere is important. Sociologist Paul Ray conducted a study on American social change and produced his results in *Cultural Creatives*.[12] Here he and his associates concluded that up to twenty-

five percent of Americans are creatively engaged with developing solutions and life styles that are sustainable.

1. Have students examine figure 3.16. Here we see a simple layout of Ray's findings.

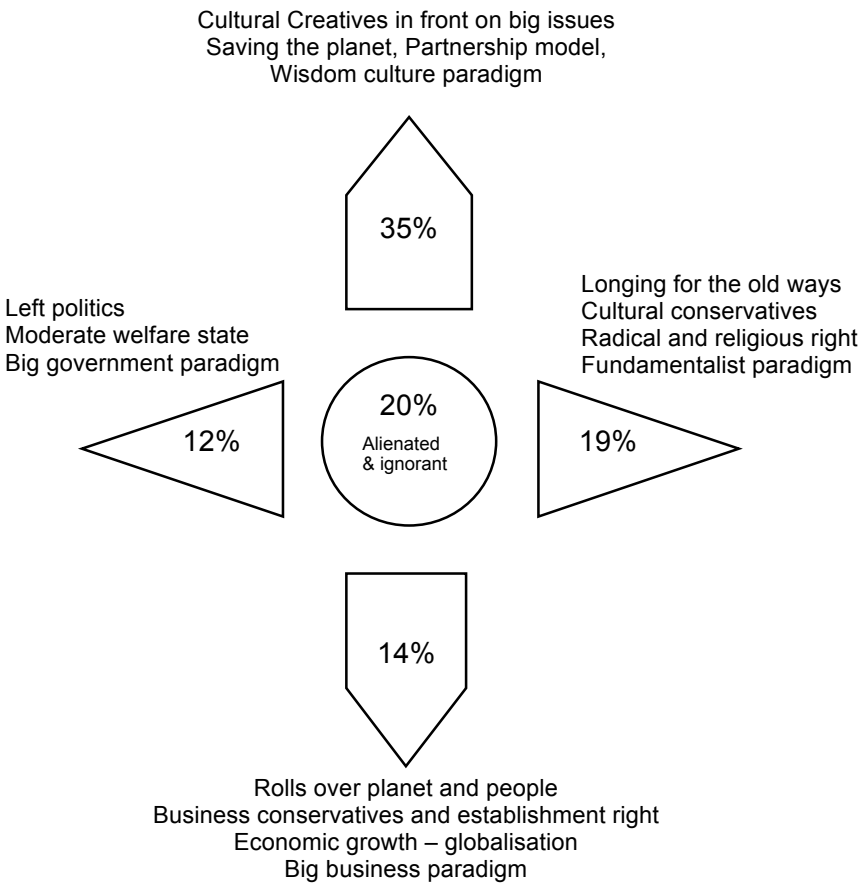


Figure 3.16 Cultural Creatives

2. Have students develop their own survey of culturally creative actions.

3. Administer the survey and collate the results. Do their findings reflect those of Paul Ray?

3.19 The transformative process

In section 2.14 we looked at the T-cycle. This is a subject that can now be explored in the light of a deepened understanding of time, the power of images to define reality, and our ability to creatively engage foresight in order to respond appropriately to the questions besetting us today. When we engage in this way we begin to transform our thinking and expectations. Reality no longer seems 'locked' into a future that emotionally we reject or fear.

It is regrettable that pundits, commentators, children's books and most media productions involving futures tend to misdirect many of us by their focus on the *external* construction of the future by technology. For underlying the surface of technical change are important human processes involving *transformations of meaning.* To begin to be aware of this deeper dimension is to open up whole new areas of enquiry and action. This brings us to the core of critical futures work.

When we question the future we gain insight into the present and the processes of transformation that lie at the heart of our social dynamic.

Look again at figures 2.20 and 2.21. The T-cycle can be summarised as follows:

- The breakdown of inherited meanings and a perception of social systems failing
- Reconceptualisation of existing social reality and a reorganisation of what is possible
- Negotiation and conflict over emerging meanings and values
- The selective legitimation of aspects of social reality as a 'new reality' draws meaning to itself

1. Have students review section 2.14 and the accompanying figures 2.20 and 2.21. Use these figures to conduct a scan of their social reality.

2. Have them place processes they recognise into the following grid.

Topic
Breakdown
Reconceptualisation
Negotiation and conflict
Legitimation

3.20 Re-negotiation of meanings

The notion that words simply mean what they say and that texts embody a coherent experience or account of the world is a deeply held and comforting one. It is comforting because it preserves a simple view of language and meaning which naturalises a commonsense, taken-for-granted, view of the world. Yet, like the boundaries they enshrine, the comforts of realism are illusory. They obscure the ideological character and uses of language and leave individuals open to mystification and exploitation. There is insufficient latitude here to permit the full flowering of human communicative ability and expressiveness. In order even to notice ideological and linguistic traps (let alone to penetrate the fog of misdirection and escape them) it is essential to yield some degree of comfort and certainty. Yet in so doing, what is lost in narrowness and naivety can be gained in breadth and freedom to 'speak one's own word'.

Traditional literary criticism concentrated on understanding 'what the author meant' and classifying his/her stylistic attributes according to a pre-defined system of taken-for-granted criteria. Today the writer occupies a less privileged position and texts have been said to provide an open framework for the *construction* of meanings. While this view may readily be overstated, the reader has become much less a passive observer and more an active participant in the communication process. The reader is fully capable of calling forth meaning, purpose and intentionality from a range of sources, including texts. While in practice some texts may be susceptible to only a limited range of interpretations it is, of course, always possible for the reader to reject textual assumptions and claims, indeed to leap beyond them to quite new areas of concern. This is a key point: knowledge is never 'finished' and therefore meanings are always fluid and negotiable. The ramifications of this view are of great significance for people facing up to the apparent inevitability of socio-technical systems.

This is so because, in presuming a more balanced relationship between author and reader, an important principle can be established which applies equally to other contexts: advertisements, editorials, newscasts, political speeches and images/projects of the future. The concept of 'text' can be used as a metaphor and applied to cultures and traditions. Hence the roles of passive recipient, observer and victim can be consigned to the rubbish bin of history.

Contrary to received wisdom, our present transition from industrial ways of life is not centrally a matter of economic and technical change. These features are 'noticed' and exaggerated by viewpoints founded upon or conditioned by, instrumental reason. Opposed to this perspective (which stresses externalities) it seems to us that *by understanding the present cultural transition not so much in terms of the external regulation or control of techniques and technologies, than as a transformative process involving breakdowns and renewals of meaning, we penetrate to the core of all our major concerns.*

In a critical futures context those concerns are perennial. They relate to the essentially human process of *constituting meaning, significance, purpose and value.* If individuals are free to reinterpret texts they are also free to reinterpret inherited traditions and normative views of 'desirable' futures. (In fact, we should doubt if they can do otherwise since meanings are never simply copied, duplicated, taken over intact.) If there can be no final or authoritative reading of history or futures, it follows that in principle each person has the same potential right of access to the crucial councils and commitments of the day. Those who so choose can, therefore, without regard for social status or academic qualifications, without needing or asking for permission, without fear or favour, participate in cultural reconstruction and renewal at a very fundamental level.

1. Have students look at their classroom. This is a text that can be interpreted and re-negotiated.
2. How is power embodied in the teacher?
3. How is the architecture representative of authority?
4. How are students ordered and recognised?
5. How do students themselves, self categorise?
6. How do they generate alternative power structures (fashion, language, posturing)?

Reflection 6

3.21 Wisdom culture

So far we have considered a broad range of futures oriented concepts and strategies. The central, but unspoken, assumption has been that we need to move towards a wise culture beyond the instrumental industrial worldview we currently inhabit. In this section we assert that wisdom is a way of knowing the world in its physical, social and personal dimensions. Being critically aware, having the creative instinct to problem solve and vision beyond what is fed to us by the popular media and having a range of skills to facilitate positive change are all dimensions of the foresight required at this turning point in history.

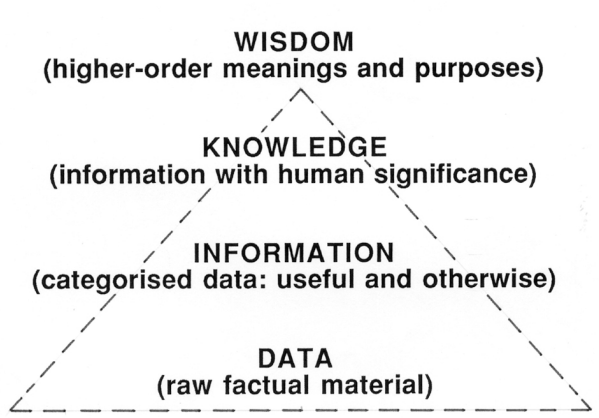


Figure 3.17 A hierarchy of knowledge

In figure 3.17 we see knowledge as a hierarchy. Wisdom is at the pinnacle because it is a synthesis of what has preceded it.

1. Have students discuss the differences between the levels.
2. Have them find examples for each layer.
3. Ask them to look at figure 3.18 illustrating the four quadrants and also figure 3.15 outlining layered futures work. What parallels are apparent?
4. Design an image to convey student insights.

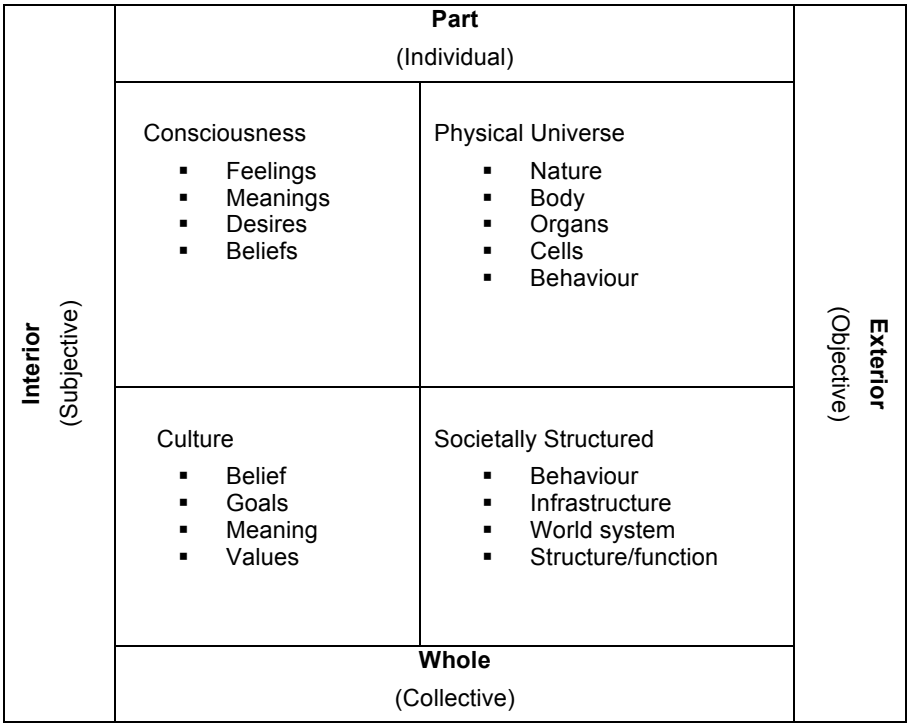


Figure 3.18 Wilber's four-quadrant model

Now consider figure 3.15 again. This offers a summary of all that we have discussed so far. The assumption is that a wise person is an empowered individual. When you ask, in a futures context: What can I do? The answers are now at your fingertips.

1. Have students discuss figure 3.15. Ask them to discuss the four sections and suggest what each refers to.

2. Have students make a list of futures concepts they are now familiar with.

3. Have students reflect on human capacities and how they themselves embody these. This is an opportunity for drama or visual representation.

4. Have them find examples of the social processes that define our reality. Which processes are sources of hope and which lead to fear or uncertainty?

The area 'futures methodologies' is yet to be fully explored. It will be the subject of the following sections. But before we move on to these we need to look at the concept of wisdom as a descriptor of the kind of culture foresight suggests we need to facilitate as we engage with the loss of vision and direction that is a central feature of the present.

What are the grounds for using a notion of wise culture in a futures context? First, it supplies a rationale and a method for transcending (literally 'going beyond') the destructive conflicts of industrial culture and establishing a different dynamic for cultural development. Second, it represents a humanly-compelling goal to aim for. The goal is quintessentially one that concerns human and social development. As such it may begin to correct the present imbalance between these and

our presently one-sided preoccupation with technical change and development. The loss of balance between the human and technical represents a major and continuing threat for all cultures. Third, the exploration of human possibilities at the peak of knowledge and experience reveals options for human and cultural development that are very difficult to reach from within an industrial worldview. Finally, if a compelling view of a wisdom culture can be developed, it may become a guiding image that positively encourages moves in that direction. Such an image would represent a more valuable contribution to culture than many of the more cognitive, quantitative and professionalised contributions of professional futurists.

Vivid understanding of common humanity
Move beyond roles based on race, gender, etc.
Balanced use of rationality and intuition
Higher motivations re-shape economic life
Methods and institutions to foster growth of consciousness
Education as a discipline in transcendence
Technology as aid to transcendence, not substitute
Local differences set in context of universals
All people and religions seen as one in spirit
Governance depends upon mastery of the system at each level: body/mind/soul/spirit

After Wilber: *Up From Eden: A Transpersonal View of Human Evolution*, London, UK, RKP, 1983

Figure 3.19 Aspects of a wise culture

So what might a wise culture be like? The above list gives some indications. Note that if one assumes the highest motives possible (instead of the basest) then many existing problems and dilemmas seem to vanish. This clearly suggests that the consequences of a vertical shift of consciousness can be intensely practical. However, it's important to recognise that this is a very long-term process! The reality of a wisdom culture could well take many centuries to achieve. But, in the meantime it has enormous present-day value as a goal, a direction and a powerful contrast to cultures that have become dominated by technical systems.

It may be that a wisdom culture, or something very like it, represents the only long-term solution to the human metaproblem. For it will take the higher-order imperatives of true wisdom to repair the earth, reconceptualise the relations between people and people, and attain a new balance between people and nature. It will take such wisdom to look beyond the instrumental (and finally, disastrous) imperatives of 'faster ... farther away ... bigger ... more'.

A wise culture inspired by the 'Perennial Tradition' (i.e. the universal spiritual heritage of humankind) would be fully capable of articulating new meanings and purposes. This, perhaps, is the nearest we can approach to 'solving' the human predicament. But such a view does have important consequences. For example, it means that our pre-occupation with tools and technologies may be diverting our attention from more vital possibilities. It also suggests that the present preoccupation with information industries and systems may be more of a passing phase than a

lasting solution. *Without being guided by higher-order ethical norms, information societies will remain crippled by some of the defective programming they have inherited from the industrial era.*

1. Have students look at the list 'Aspects of a wise culture' and discuss each point. Would the realisation of such values be a utopia?

2. Ask them what movements and organisations may represent complete or partial application of these points.

3. Have them discuss what aspects of self would need to be developed to enact these values.

PART 4: METHODS

Part four outlines a range of simple futures methods and tools. In any form of social research these are not neutral, and futures studies is no exception. Each method is shaped and informed by assumptions about reality and the human capacity to act and reflect. Some methods are more empirical in nature while others are more interpretive. All are useful to those who seek as comprehensive picture of the human social world as possible. Furthermore, some methods actively engage the researcher in the domain of the researched. These participatory methods are driven by a desire to achieve humanly desirable futures that instil hope and purpose in people.

This part opens with three techniques futurists use in trying to understand the contexts defining and informing their work.

4.1 Environmental scanning

Everyone scans, or monitors, their environment for a range of purposes, but few do it consciously. The weather dictates how we dress; governments make laws that place constraints upon how we act. Friends, parents, colleagues, children produce a stream of information to which we selectively respond. Drivers pay close attention to the road conditions in which they travel. Newspapers and magazines re-cycle current events for our consumption. All these involve environmental scanning. It is a skill that will become increasingly critical in a threatened and changing world.

It is a fact, however, that most types of scanning are *passive* or informal. That is, they are carried out unconsciously according to vague or taken-for-granted criteria. *Active* scanning makes the process conscious. It involves a search for specific types of signals or events in the environment according to criteria that have been carefully selected.

The purpose of active scanning is to obtain specific information for specific purposes. For example: monitoring trends (social, economic, technical, environmental, etc.); identifying major problems or opportunities in the local, national or international arena; developing an early warning capability in a particular area; directing attention to unusual subjects and carrying out special projects. Careful scanning is necessary because without it we lose the *lead time* necessary to respond to developing processes. It's no use waiting until toxic pollution, global warming or nuclear terrorism overwhelm us before we pay attention to them. The earlier we respond, the more time we have for strategies of response. So vigilance is essential. New issues, trends, dangers are arising all the time, but unless someone is watching and listening, the early signals are lost.

Emerging issues, trends and dangers provide notice of their existence in a variety of ways. Types of indicators include: the 'lone' signal (suggesting an unusual event), statistical information, reports of special landmark events (indicating a significant change), forecasts, conjectures, extrapolations and the speculations of informed sources. In each case the person who is carrying out the scanning process needs to draw both on analytical skills and on imagination. This is a directed process and it is summarised in figure 4.1.

Scanners will define the sources to be monitored and learn how to assess the significance of what they find. It is usually necessary to set aside opinion and to strip away the rhetoric that often surrounds contemporary issues. The timing of the changes observed may be important. Sometimes a great deal of material needs to be

sifted through in order to distinguish the useful from the repetitive. This is a skill that develops with time and experience. It is a vital skill for citizens of the twenty-first century who increasingly have to negotiate not only printed but also electronic and audiovisual sources.

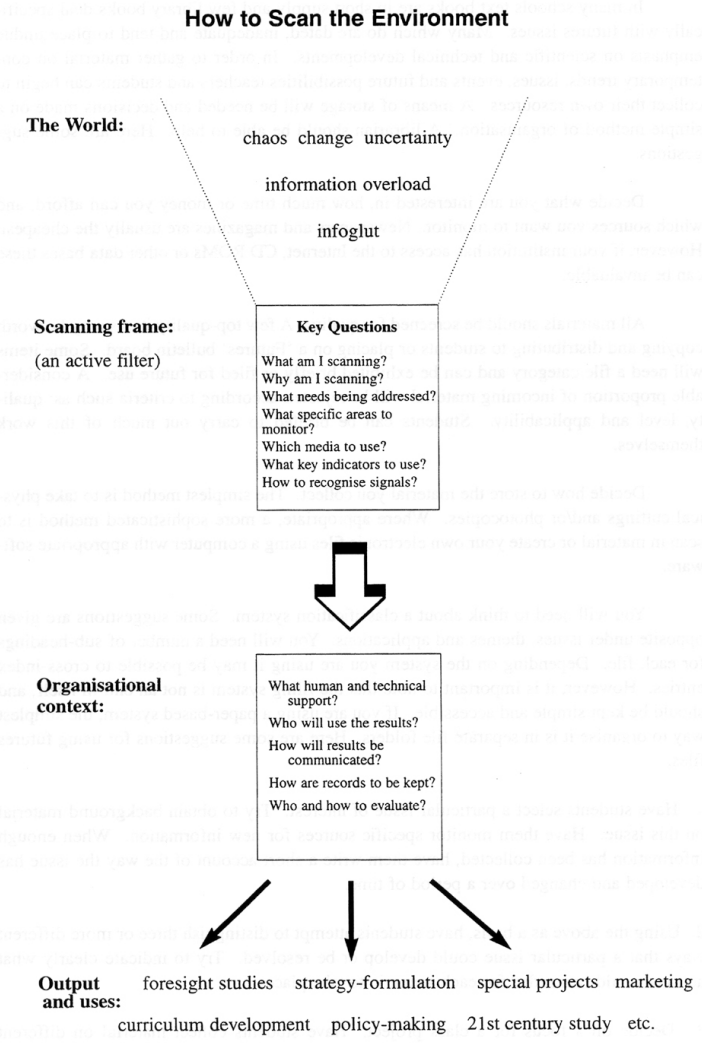


Figure 4.1 How to scan the environment

The result of careful scanning is a developing body of information with a range of uses. The ability to develop such a resource is important in a field like futures because, by definition, most printed sources report on the past, and text books date rapidly. The process itself is of value in sharpening observation and analytic skills while providing opportunities to hone discrimination, judgement and expression. As such, environmental scanning is a superb way to enhance human capacities in general as well as, more specifically, the foresight literacy this publication seeks to encourage. Here are some suggestions for getting started.

1. Have students pick a contemporary issue of interest to them. They should decide which sources of information are significant and develop explicit criteria for selecting material. They should organise a time-table for the scanning process, collect data for a specified period and condense it into a brief report.

2. Have one student monitor a section of the press, one monitor a different section, one look at specified journals, one can look at specific internet sites while another tracks television coverage, etc. Critically compare the results.

3. Have students locate a professional abstracting service. Examine its literature and find out how they market and present their services. Why do schools and school systems still tend not have routine access to such services?

4. Use the scanning process to identify future employment opportunities and alternatives to employment in the local area. Make the results available to other students, teachers, parents and local organisations.

4.2 A Delphi survey

The Delphi survey was developed by the RAND corporation in the USA during the 1950s to survey expert opinion in a particular field. The name derives from the ancient Greek city whose oracle became famous for statements about the future.

This method is based on several key ideas. One is that several opinions are better than one. Another is that by providing anonymity to the respondents a better result will be achieved. Finally, respondents are chosen who are acknowledged experts in their field. On the whole the Delphi survey technique has proved to be durable and highly successful. One drawback is that it tends to enforce consensus. This, however, can be compensated for by giving more weight or attention to dissenting or unusual opinions. A second drawback is that it can be complex to administer.

There are usually two or more rounds of questions. The first elicits a wide range of responses. For the second these are analysed and revised, providing controlled feedback to the participants. At this or a later stage divergent opinions may be explored to discover why they are at variance with the majority. Hence Delphi is a kind of 'equaliser of opinion'. It provides an authoritative overview of what a field of experts think, rather than giving prominence to vocal or well-known individuals. As such it is a tool for assessing the current status of any specialised area. It is obviously not a forecasting tool and should be used with care. At best, inferences can be drawn about possible future developments which can be subject to further enquiry. The basic steps are as follows.

1. Select and brief the team.

2. Select the panel of respondents. A minimum of ten experts is needed. But twenty or thirty will yield better results. However time and cost need to be considered.

3. Write the questions for the first round. These are likely to be fairly general. Test the questions for clarity, precision, lack of ambiguity, etc. before they are circulated. Use figure 4.2 as a pro forma.

4. Send the first round questionnaire to the expert panel with a covering letter, figure 4.3.

5. As the results come in, analyse them carefully. Locate the replies for each question on a spectrum of possible replies.

6. Carefully using the material in hand, construct a new set of questions that accurately reflects the first round opinions.

7. Mail out the second round questionnaire.

8. Analyse the second round responses and, if no further rounds are contemplated, prepare a summary of the findings.

Delphi Survey on _____

Please list in order of importance the key developments that you expect to see in your field in the next _____ years.

1. (Most likely):

2. (Next most likely):

3. etc

4.

5.

6.

7.

8.

9.

10.

Figure 4.2 Delphi survey

Delphi Survey

Date: _____

Dear _____

The enclosed Delphi survey is part of a small scale research project we have designed to explore likely developments in _____.

We are therefore gathering information on _____. Our survey is an attempt to gather expert opinion about likely developments in this field. Since you are one of the key experts in _____ we would greatly appreciate your help.

Our time horizon is _____ years. Over this time expect that the subject of this survey will impact upon our lives and our society in many ways. We understand that the field you are involved in is moving fast and will influence our future.

For the first round we ask that you kindly list what you consider to be the major developments in your field over the next ___ years. Your answer will be kept confidential and we will supply you with feedback from each round of questions. We are planning ___ rounds. We very much appreciate your time, experience, and your willingness to help us obtain a glimpse of the future in this exciting area.

Yours sincerely,

_____

Figure 4.3 Delphi survey sample letter

4.3 Trend analysis

There are two general approaches to trends. First, there is the need to understand existing trends on the basis of historical and contemporary data. Second, we need to use this information to extend, or extrapolate trends into the future. Clearly the former is easier. When we attempt to extrapolate trends into the future we must recognise a range of other factors that will inevitably modify, alter or even eliminate the trend. Hence extrapolation is mainly used for short-term purposes. The further ahead we look, the more divergence is likely.

Trend analysis is a matter of gathering data and then asking a series of questions. Reliable time series data is best. For example, population figures, energy production and consumption, the growth of road traffic and so on. Figures on such trends can be readily obtained from government and other statistical sources. With the raw data in hand, one may begin to ask questions such as the following:

1. Can the causes of the trend be clearly identified? If so, are there single-factor or multiple-factor explanations? Are these convincing? Do expert authorities agree or disagree about the source and character of the trend (e.g. global warming)?

2. Is the trend desirable or undesirable? How can we tell? Who gains and who loses? Why? Is the trend one that is, might be, or should be modified by human intervention?

3. What type of trend (or trend curve) are we looking at?

Once the past and present are clearly understood, it may be useful to proceed to extrapolation. Here are some questions that arise:

4. Will the causes of the trend persist? If so, for how long? What might change them? Are there any new developments 'in the pipeline' that might be relevant? Are there any conflicts with other trends?

5. Is there any evidence that a trend is likely to reach a limit or saturation point? If so, what are the main implications? If the trend appears undesirable what side-effects might it exert? How might the trend be modified or halted? Who may be responsible for this work?

One form of trend analysis was popularised by John Naisbitt in *Megatrends* (1982) and *Megatrends 2000* (1988). The basic methodology in both cases was the content analysis of reports in American newspapers. These supposedly gave insight into long-term trends occurring during the 1980s. Yet despite its commercial success, the method drew serious criticism. For example, it ignored world problems (what the Club of Rome termed the 'global problematique') and concentrated mainly on 'opportunities' of interest to business. It gave no rationale for selecting its subject matter. And the results were uncritically generalised as if they were applicable to the rest of the world.

After attempting some trend analysis as described above, it is worth looking critically at this material. The twenty so-called 'megatrends' that Naisbitt purported to identify are listed below in figure 4.4. Have students examine each of them and ask the following questions.

1. THE ORIGINAL MEGATRENDS	2. MEGATRENDS 2000
1. Industrial society to information society	1. Global economic boom of the 1990s
2. Forced technology to high tech/high touch	2. Renaissance in the arts
3. National economy to global economy	3. Emergence of free-market socialism
4. Short term to long term	4. Global lifestyles and cultural nationalism
5. Centralization to decentralization	5. Privatization of the welfare state
6. Institutional help to self-help	6. Rise of the Pacific rim
7. Representative democracy to participatory democracy	7. 1990s: decade of women in leadership
8. Hierarchies to networking	8. Age of biology
9. North to south	9. Religious revival of the 3rd millennium
10. Either/or to multiple option	10. Triumph of the individual
Source: J. Naisbitt, *Megatrends* (New York, Warner Books, 1982).	*Source*: J. Naisbitt and P. Aburdene, *Megatrends 2000* (London, Sidgwick and Jackson, 1990).

Figure 4.4 Megatrends

Figure 4.5 summarises some of the factors involved in trend analysis. As you can see this is an area that consists of a wide range of variables. As our comments regarding the work of Naisbitt indicate, the trends an analyst identifies are linked to implicit assumptions about the nature of reality and how it is constituted. Naisbitt's work drawing on the popular press overlooks the cultural and epistemological contexts that allow for deeper appreciation of change and transformation.

Personal: interests, background, values, cognitive style, favoured metaphors
Institutional: position, orientation (market, non-profit, interest group, activist etc)
Professional: training, constituency, disciplinary paradigm
Methodological: approach, methods, nature of significant data
Cultural: race, religion, region, history
Ideological: Marxist, socialist, capitalist, communitarian, radical, post-modernist
Level in global system: institution, area, state, region, globe
Level of analysis: events, practices, ideas, worldview commitments

Figure 4.5 Factors involved in identifying a trend

1. What evidence is there now inside and outside the USA for the existence of such trends?

2. Which of the trends still hold up, and why?

3. What interests are served by this approach to trend-reading? What key trends might have been included in a more comprehensive account? What would you include?

4. Some of the more subtle or unacknowledged factors in identifying trends are given here. How do these apply to 'megatrends' and other attempts to analyse trends?

Graham Molitor has done detailed research on trend analysis and forecasting. He maintains that for trend analysis to be effective:

> presupposes a wide-ranging familiarity with the factors that prevail in specific environments. This backdrop consists of the two great divisions that constitute any environmental situation: natural resources and the physical

environment; and human resources. Taken together, natural and human resources represent the panoply of materials that are available to work with. These two great constructs of reality and our very 'being' shape the very essence of capabilities and potentials. Things and people make up the whole.[13]

Molitor summarises environment factors in figure 4.6.

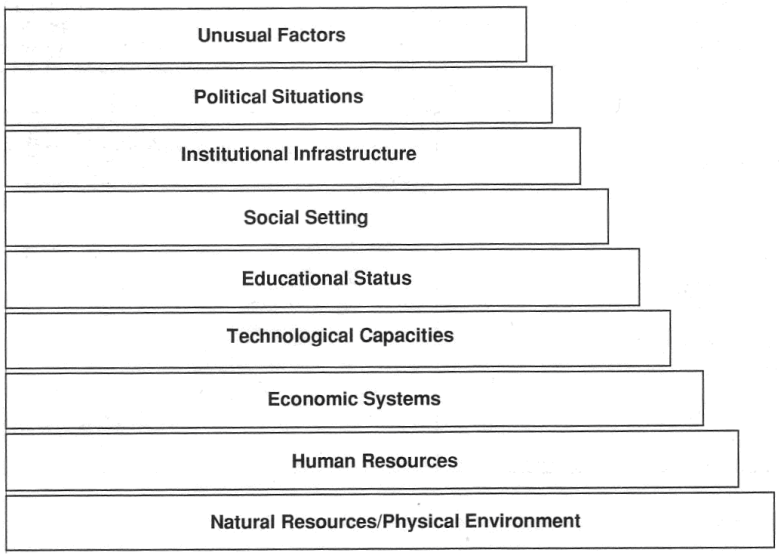


Figure 4.6 External environment

Reflection 7

4.4 Knowledge and ignorance

Ralph Waldo Emerson once quipped that 'education is learning what you didn't even know you didn't know'. Futures work is a research process designed to teach what we didn't know we didn't know. In some respects it can take the form of an issues based process that needs an object in order to function. Futurists must study something in the context of futures possibility. Furthermore, futurists are aware that we are bounded by the problem of what we know and therefore much of their work is designed to make us aware of how much we are ignorant.

Sohail Inayatullah has summarised how knowledge and ignorance determine both areas of certainty and uncertainty. His findings are represented in figure 4.7.

What you know	**What you don't know**
Certainty	
Type 1	**Type 4**
What you know Day to day given reality Uncontested - accepted Forecasts and data	What you don't know Day to day challenges to given reality Study – Trend analysis Learning from others Being Conscious
Type 2	**Type 5**
What you know you know Reflection Science, especially testing of hypotheses High degree of certainty – information	What you don't know you know Unconscious understanding Superconsciousness Intuitive Foresight Wisdom
Type 3	**Type 6**
What you know you don't know Scenarios are most useful tool as they help to contour uncertainty – frame areas of ignorance Knowledge	What you don't know you don't know Only way to approach this is by entering other ways of knowing, moving outside comfortable paradigms Epistemic futures The problem of consciousness – enemy, friend or transcendence
Uncertainty	

Figure 4.7 Knowledge and ignorance

1. Have students discuss the six types of knowledge/ignorance. How does our present worldview respond to ignorance?

2. Reflect on what makes a wise culture. How would a wise culture approach the 'problem' of ignorance?

David Hicks has developed a schema that illustrates how knowledge, skills and values function in order to develop consciousness of global citizenship. These areas are relevant to all futures work and are shown in figures 4.8a and 4.8b. These areas map how a futurist keen to respond to the global metaproblem can orient their thinking and develop sustainable strategies.

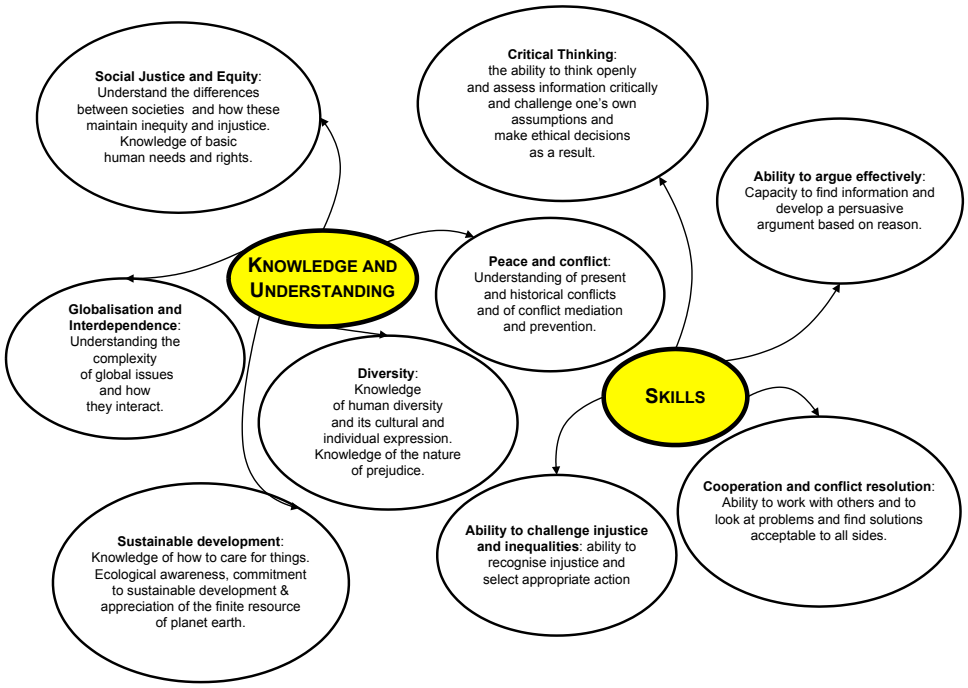


Figure 4.8a Key elements for responsible global citizenship

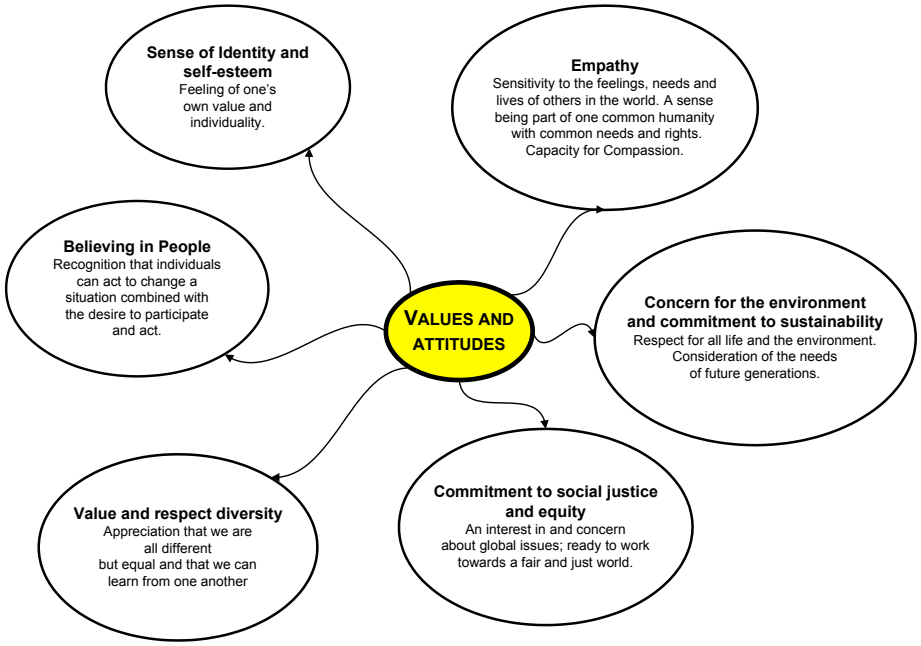


Figure 4.8b Key elements for responsible global citizenship

1. Have students use figures 4.8a and b as maps for dealing with a specific issue. Divide them into three groups and ask each group to focus on one of the three key areas.

4.5 Optimism and pessimism

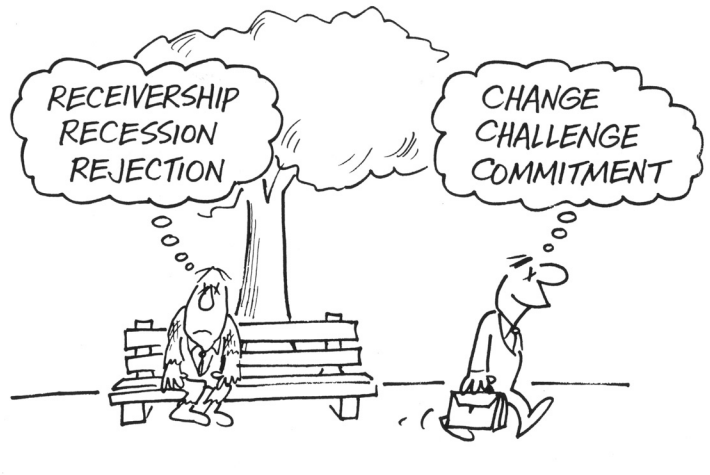


Figure 4.9 Optimism and pessimism

It has sometimes been suggested that optimists look forward to the future while pessimists fear it (figure 4.9). Views of futures are commonly classified in these terms giving rise to accounts of marvellous possibilities and terrifying disasters. The terms utopia and dystopia reflect these extremes, and it is true that images of future disaster are more common than those of peace and prosperity. But this simple division between optimism and pessimism is neither as simple, nor as useful, as it may seem.

It is true that pessimism may lead to despair. However, it may *also* stimulate a person to search for effective solutions. On the other hand, optimism may leave an individual's energy free for constructive projects *or* it may encourage bland, unhelpful, business-as-usual attitudes. In both cases the human response is crucial. Optimism and pessimism can both inhibit and encourage effective responses.

The key factor in dealing with fears is not the object of attention but the quality of understanding, the quality of response, brought to bear upon it. We call this 'the empowerment principle'. Students can try some of the questions below and begin to explore their own feelings and responses. This is a good starting point for the exercise that follows. It represents a useful way of beginning to deal with students' fears about futures.

A starting point with younger or less-able students is to build familiarity with 'plus or minus' words, 'positive and negative' words and finally, responses which 'encourage' or 'hold back' as in figure 4.12. The following questions can be posed for students.

1. What makes you feel optimistic about the future and why? What effect does this image (figure 4.10) have upon you?

Figure 4.10 Positive future

2. What makes you feel pessimistic about the future and why? Outline the effect this has upon you. Use figure 4.11 as a stimulus for discussion.

Figure 4.11 Threatening future

3. Using your answers to 1 and 2, fill in the matrix (figure 4.12). What can you conclude about your responses from the completed matrix?

4. What strategies could you adopt to alter your responses or to change the existing balance between enabling and inhibiting outcomes?

	Optimistic response		**Pessimistic response**	
Events or possibilities	Holds back	Encourages	Holds back	Encourages
e.g. school exams	Over-confidence	Work even harder to get disctinction	Resignation to the inevitable	Make up lost ground

Figure 4.12 Optimistic and pessimistic responses

4.6 The empowerment principle

This exercise was developed to help teachers and secondary students explore their responses to feared futures. Its purpose is two-fold, first to place negative images and fears in a wider context. Second, to draw attention to 'high quality' responses. The technique follows on from the previous work on optimism and pessimism. It is usually best to precede this exercise with a careful consideration of students' fears. Though these are not universal, they are widespread and, in general, more thoroughly negative than many adults realise.

Educational futurist Frank Hutchinson interviewed many Australian high school students and found a pervasive sense of foreboding amongst respondents. He summarised his findings as follows:

> Many of the young people in this study expressed a strong sense of negativity, helplessness, despondency and even anguish about the anticipated problems facing their society and the world at large. For a majority, negative imagery of the future ranged from perceptions of intensifying pressure and competition in schools in the twenty-first century to worsening trends in physical violence and war, joblessness and poverty, destructive technology and environmental degradation.[14]

The reading provided in the box gives some insight into the views of a group of Melbourne students recorded *before* they took a futures course. Significantly, their

views were much more positive afterwards. After considering fears, students can then be taken through the process outlined below and, finally, encouraged to explore the meaning of 'high quality' responses (in relation to a chosen focus). The main point of the exercise is to raise the question of what 'high quality' might mean in this context, without necessarily supplying all the answers. The reason for this is that the search for high quality responses is a life-long process with many applications, so simplistic answers and premature 'closure' on difficult questions should be avoided.

Young people's views about the future

I see the world becoming a place where technology is a major part and controls everything. There will be more wars because it is simply human nature for people to disagree.

I see the world as turning violent. People and trends will turn against each other. There will be more crimes and the world will eventually blow up. It will end in a nuclear war. People will try to fix the world but it won't work. Everyone will end up getting killed and our forests devastated. The world will end up just being concrete all around us. There will be no fresh air, with pollution there will be hot, hot days to burn us.

I think the future will be pretty stuffed if we keep wrecking ozone layer with pollution because then we'll have to wear oxygen masks etc. It will be cool because o the technological stuff that will be really advanced and it will be fun because of this. I would like to find a cure for cancer, AIDS and SIDS.

I am scared that there will never be peace in the world. If I could have a perfect future I would have a democratic and free nation in which all black and white people live in harmony with equal opportunities. I have a vision that in the future the fighting will get worse as when our resources begin to run out we will become selfish and everyone will only be interested in looking after themselves rather than their fellow countrymen. This is a negative attitude, but is nonetheless the way I feel.

My view of the future is that the earth will deteriorate. I think that our environment will become bad enough that we may not survive. Every disaster will become worse each time. I'm sure the earth's existence will be no exception. The hatred between countries and people will become very severe. People will find it more difficult to love. Marriages will split, people will fight, more crimes will be committed. People will have no respect for themselves or others. The technology in the world will undoubtedly improve out of sight. But this may be a bad thing. Technology could take over. The gap between rich/poor, beautiful/ugly will become greater.

The things I see when I think about the future is a mass of robots taking over and a huge tidal wave coming out of the ocean to let us know how small we are and that technology can't control everything.

Students can begin by focusing upon something that directly concerns them. They are asked to hold the images, feelings, associations, etc., out before them in a relaxed and non-judgemental way. They can then begin to explore possible responses as suggested by the matrix figure 4.13.

	Low quality responses	High quality responses
Acceptance of negative images		
Rejection of negative images		

Figure 4.13 Matrix for moving from fear to empowerment

In running this exercise many times, we have noted how some people have difficulty with the 'accept/reject' dimension. If this happens, it is best to simply explain the difference between doing something because your acceptance/perception of its reality becomes a motivating force, or because your first response is to reject it, that is, to want to take some kind of action to negate, alter or extinguish it. The 'high quality/low quality' dimension is less ambiguous, though it will be unfamiliar to most students. It is best not to spend too much time debating these concepts because it is in working with the whole range of possible responses that key insights are gained into how the empowerment principle works. Once the matrix is completed there should be up to four sets of strategies for dealing with the issue. Here are some next steps.

1. Can the strategies be placed in order of priority? (See the diamond ranking tool below in section 4.9.)

2. Is there a clear 'best' solution? (There may be valuable elements in one or more of the strategies that could be combined in a number of ways.)

3. What resources, changes, commitments and support are needed to put the preferred strategy into practice?

High quality responses to fears about futures may include some of the following features. The fears are now seen in a wider context — there is an enormous range of options to choose from. Students begin to see that most fears are overstated or illusory. It becomes clear that images of the future are provisional and negotiable. They represent opportunities for engagement, choice, action. Images of the future are just that: images, potentials, possibilities. They arise from and depend upon human vision and perception. The locus of power therefore resides in people and not the image. Finally, a high quality response is an imaginative response. It has the capacity to go beyond the given. It is creative. In summary, the empowerment principle states that the keys, or resolutions, to major fears reside not in the focus of fear or concern but on developing high quality responses to them.

4.7 An imaging workshop

Most images of futures are products of the past. In this exercise the aim is to *let go* of the past and make a leap toward a future state that is a product of one's own will and design. Any focus can be selected so long as it is one which is inspiring to the participants.

The images we invent are acts of discovery and purpose. Properly used they can open out new possibilities for action and change. The images may be purely personal or shared with others. For example, 'envisioning a world without weapons'. Workshops on such themes have been developed and run in many locations by Warren Zeigler and Elise Boulding. The following is one version of this approach.

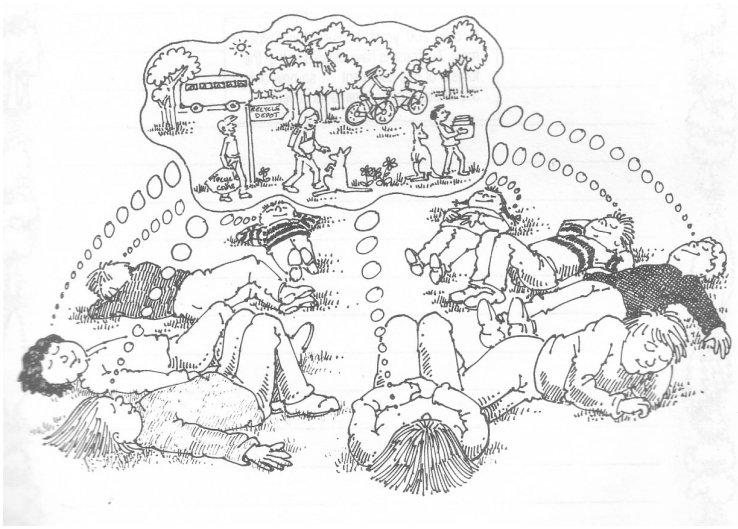


Figure 4.14 Dreaming

It is worth taking time to explore the process properly. It needs at least a whole morning or afternoon — longer if possible. The environment should be quiet and supportive. Art materials should be at hand and sensitive facilitation is essential. In this version the process can be reduced to the following steps:

Decide on the focus.

Situate it in a specific future time.

Relax and be there in that future. Allow yourself to *remember* your preferred image.

Allow the image to become specific and concrete.

Outline it as clearly as possible. This can be a written description, a drawing or design or simply a mind image.

Describe the image to a partner who listens passively. When you are ready the partner helps to *nurture* the image by asking questions that allow you to be clearer, more concrete and specific. Criticism plays no part in this process.

Begin to explore the *meaning* of the preferred future together. Try to tease out *central themes* and *compelling images*.

If there is time, examine the consequences of your future via a futures wheel. Place the title of your future at the centre of a large, blank piece of paper and trace out some of the likely spin-offs and their consequences. See figure 4.15 as an example.

Now think about this future. How did it happen? Don't use the future tense. It *has* happened, so look back and 'remember' how.

Once you have noted the main features of this process you can begin to translate them/it back into your real present. That is, you can set out some of the short-term objectives which lead in the direction of your scenario.

Next, search for *points of leverage*, *actions settings* and *key people* who could facilitate your working toward the preferred future. These are the 'seeds' of your preferred future in the present.

Repeat steps 5 to 11 with your partner.

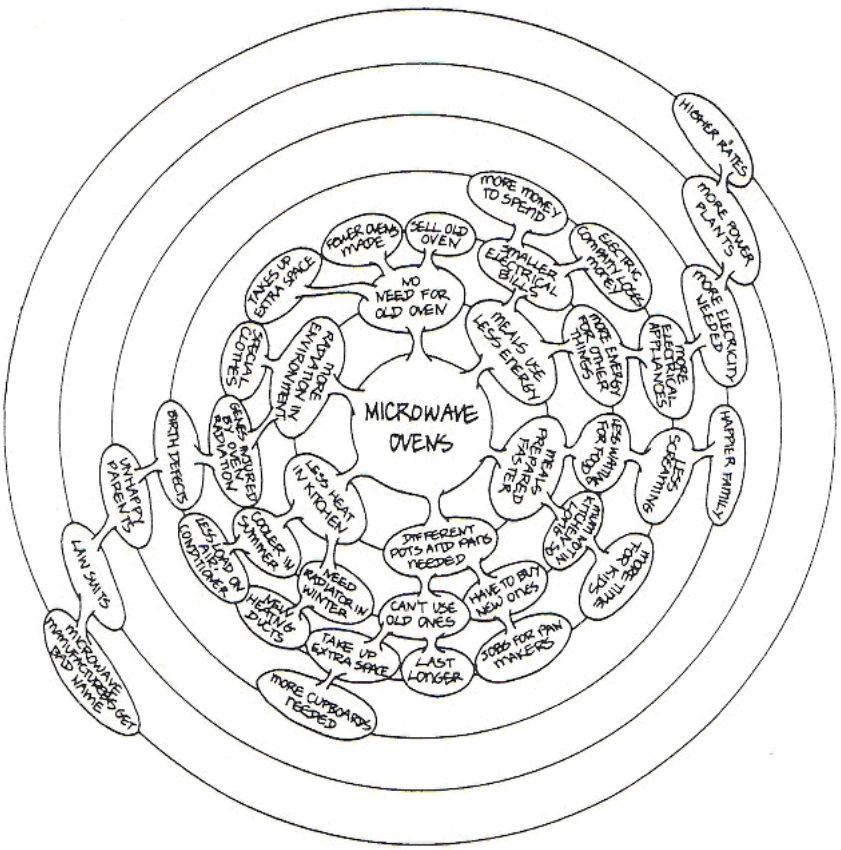


Figure 4.15 A consequence wheel

4.8 Values clarification for futures

The connection between values and futures is a close one. In general terms we study alternatives not to predict them (to say that they *will* happen) but to be better able to *choose* between them. Of course, not everything about the future can be chosen. One does not choose one's parents, the country one lives in or next year's weather. Those

who study futures sometimes exaggerate the extent to which futures *per se* can be chosen. Yet there are highly significant areas of decision-making and choice that directly affect the way that societies develop and the kind of futures they are able to realise.

Within those areas where choice is possible — politics, technologies, education family structure, personal attitudes and preferences to name a few — values play an important part. They help determine what we believe to be worth doing and why. Values are also linked to *interests*. That is, to structures of inequality and claims upon resources. Values are often implicit (hidden) and therefore affect behaviour without us being fully aware of them. To consciously examine values reveals processes we may have overlooked, providing leeway to make more considered choices.

It has been suggested that values should be carefully and freely chosen from among alternatives, be prized, affirmed, acted upon and persistent. Yet not too persistent since changing conditions often require that earlier values be reassessed, changed or even abandoned. Again we confront the issue of continuity and change. Values such as the sanctity of human life seem to remain permanently useful (though widely abused) while others (such as the imprisonment of the mentally disturbed and the morality of cigarette advertising) change with changing social conditions.

It was once widely thought that values were separable from facts. The view was held (and still is by some) that in certain areas of enquiry one could have 'value-free knowledge'. That is objective knowledge unaffected by values, interests, preferences. However, *all knowledge is socially conditioned.* It depends upon language (which is not neutral — it actively shapes meaning) on prior understandings, tradition and so on. So to recognise that futures study is very much bound up with values is not to set it apart from other fields. It is rather to emphasise a feature that all knowledge areas share.

The most obvious way that values enter into futures study is when we attempt to set out our views of *preferable* futures. That is, futures we would actively like to see come into being. Forecasting may appear more neutral but it is not since choices are involved at every stage and all the above considerations apply. In fact any approach to futures study involves the extension of present day values, interests and understandings. Different approaches lead to different views of futures and contribute different understandings. Here are some suggestions for values clarification in relation to futures.

1. Looking at students' own values. Have them make a list of some of their key values. Where did they come from? What alternatives did they not adopt? In what ways do they affirm these values publicly? Are they living up to them? How do these values affect other people?

2. Looking at social values. Have students focus on a particular social value or set of values and ask the following questions. Where did this value come from? What social interests are bound up with it? What consequences has it had? On balance, are these constructive and helpful? How may the extension of this value affect the future? In twenty-first century context, is it viable? How should we respond to it? Is it a value I/we would support? If not, why not, and what would I/we put in its place?

3. Values and futures. Have students explore values inherent n different approaches to futures. What values are inherent in each? Which approach(es) are favoured, and why?

4.9 The diamond ranking: a values clarification activity

This activity was designed by David Hicks. It comes with cards and is highly interactive being designed to engage students in thinking about their own values and what counts. They are to examine nine imaginary organisations all working to make a better world. Their purpose is to order them in importance. Before they begin students are given a card (figure 4.16) that outlines the purpose of a pressure group. They are then asked to pair up and look at the nine cards (figure 4.17) that represent fictitious organisations.

> There are many pressure groups in society today campaigning for change. This may be about local, national or international issues. A pressure group forms when people identify a particular problem or need and then work to publicise this. There are pressure groups on all sorts of issues, from poverty, homelessness and violence, to human rights, war and the environment. They play an important role in drawing people's attention to crucial issues, giving people information they might not otherwise have, working to improve situations, and pressing politicians to pass new laws.

Figure 4.16 Pressure groups in society

Card 1

> **Living Community** is a co-operative project based around a large country house. It was set up by a group of people who believed that by living together they could better support each other. So childcare, all household and garden jobs, and the office work are shared. The community embraces a wide age range, from young children to those who have retired. Living Community's vision of the future is one in which people learn to live, work and play more harmoniously together. They know this is often hard but believe that we can only change the world by changing ourselves.

Card 2

> **Working Together** is a network which identifies the needs of the local community and then helps set up new business ventures to meet those needs. The emphasis is on local ownership and local expertise. So far the network has helped groups to set up a community restaurant, a whole-food shop, a bookshop and a small market where locally grown fruit and vegetables can be sold. People are thus coming to realise that the community can be more self-sufficient and responsible for meeting their own needs. Working Together's vision of the future is one in which people work co-operatively together to meet as many of their own needs as possible.

Card 3

> **Justice Now** is an international organisation which reports on abuses of human rights in the world. It draws attention to cases of injustice against both individuals and groups – whether at the hands of governments, the military or other powerful bodies. It publicises the cases of those who have been abused, wrongfully imprisoned, tortured or silenced, and argues for their release. Justice Now's vision of the future is one in which all people are free and equal in the eyes of the law. It believes that putting pressure on unjust governments can bring about changes.

Card 4

> **Green World** is an environmental action group which has branches throughout the country. It is concerned about the problems of acid rain, global warming, the ozone layer, industrial pollution and the dumping of toxic waste. Its vision of the future is one in which people naturally choose to take more care of the environment. It aims to publicise 'crimes against the environment' by carrying out dramatic publicity stunts which will catch newspaper headlines and TV coverage. Green World believes that environmental concern will grow as public opinion changes.

Card 5

Fair Shares is a group that campaigns against world poverty especially in Africa, Asia and Latin America. It is concerned about underdevelopment and the way in which the rich countries of the world help to cause this. Its slogan is 'Enough for need but not for greed'. It helps local groups in Third World countries set up the projects they think will be most useful, from health care and water supply to new housing projects. Fair Share's vision of the future is one in which no one group of countries is rich at the expense of others. It believes rich countries need to follow a simpler lifestyle.

Card 6

Stop Racism! Is a national organisation which exists to fight racial prejudice and discrimination. It calls for full equal opportunities in education and at work so that members of ethnic minority groups are fully represented at all levels of the community. It publicises cases of racial harassment and assault, and the extent of racism in society. It works with both black and white people to change people's attitudes and behaviour, and to create a fairer and more equal society for all. Stop Racism's vision of the future is one in which racial justice and racial equality are taken as normal.

Card 7

Women Space is an organisation which exists to combat discrimination against women, at work and in the community. It publicises examples of successful women's projects and offers advice and legal support. It also draws attention to ways in which everyone can benefit from greater sexual equality. Women Space's vision of the future is one in which women have complete equality with men in all aspects of life and in which gender is no longer used as an excuse for discrimination. It believes that change comes about by women working to identify their own needs.

Card 8

Resolving Conflict is a local organisation which helps people to learn about more peaceful conflict resolution. It has helped neighbours settle disputes, and run courses on how to deal with conflicts at home and at work. It is also involved in mediating over cases of racial and sexual harassment, and helping to solve conflicts, for example, between property developers and local people, and in schools. Resolving Conflict's vision of the future is one in which people have learnt skills of successful conflict resolution and can apply them in daily life. They believe such change is possible through the training of mediators, as well as training people to resolve conflicts for themselves.

Card 9

Growing Older is a national organisation set up to highlight the needs of older and elderly people and to stress the important contribution they can make to the community. Far from feeling that life is over when retirement age is reached, the emphasis is on valuing the expertise and wisdom of older people. Growing Older's vision of the future is one in which older people are well cared for by the community and in which their contribution is fully recognised. It believes that change will occur through encouraging more opportunities for young and older people to do things together.

Figure 4.17 Nine diamond ranking cards

As part of their discussion, pairs ask the following questions about each project:

1. What is the projects focus or concern?

2. How does it want the future to be different?

3. What sort of action is it involved in?

4. How does it work to create change?

They then arrange the cards in the following pattern, figure 4.18

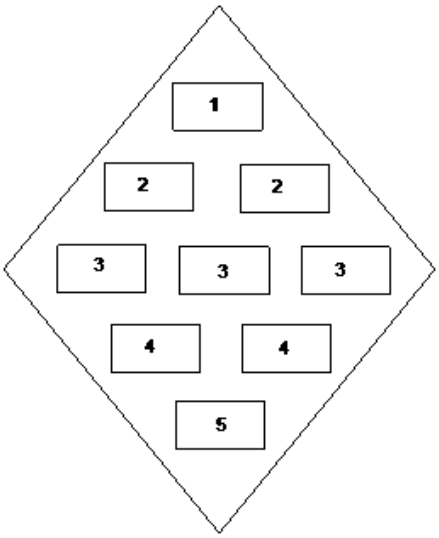


Figure 4.18 Diamond ranking layout

One represents the organisation they feel to be most significant, it is their first choice, two represents two other organisations they feel are highly important. Three, four and five represent, in order of significance the other organisations as they have prioritised them. This ordering process may take some time as students may get quite involved in the choice process.

5. When each pair has completed their ranking they meet with another pair to share the results. Each takes it in turn to explain their choices.

6. Reporting back to the whole class should focus initially on first choices. Which organisations proved most popular and why?

The activity can be extended and then varied.

Extension: Have students record their ranking on a sheet of paper with their names on it. A month later the teacher asks them to form random pairs and repeat the process. They compare the initial choices with their second round. Why are there differences in the ordering? (Choice is subjective and negotiated.)

Variations: Have students research real groups working in a variety of areas and make their own cards.

1. They then repeat the process with these cards and examine whether it was different doing the activity with real situations.

2. They run the activity with another class. The students who made the cards then discuss how it went.

4.10 Values and the rights of future generations

Do future generations have rights? There is an increasing number of people who think that they do, and that present-day people should consider these rights carefully. On what basis does this view depend? Here are some of the underlying propositions.

First, the human project is unfinished. In other words, each generation cannot assume that the world is for its use only. Rather, it should use the world in the full knowledge that future people will live upon it too. In short, we are the ancestors of

the future. Second, caring for future generations is ethically defensible. Many writers have outlined the principles of 'inter-generational equity' stating that future people have rights to the same natural riches that we do. Third, past and present generations are responsible for the existing threats to future generations (such as chronic pollution, resource depletion, deforestation and loss of biodiversity) and are therefore under an obligation to minimise these threats.

Fourth, to not care about future generations serves to impair the moral standing of present-day people, who, in this view would then simply become short-term exploiters (rather than stewards). The former is a diminished and irresponsible stance. Fifth, caring for future generation is a cultural force that is valuable now — for example, in dealing with environmental abuses that cause suffering in the present and, if left unchecked, would also do so in the future.

Obviously these are value positions. They cannot be proved, but they can be supported by careful argument and reasoning. Yet values are not mere abstractions; they are enacted in various concrete ways. How might a recognition of the rights of future generations be implemented? Here are some suggestions.

Ombudsmen could be appointed to speak for them in all important decision-making arenas. A group of people could form a 'Council for 2050' which would meet to consider the world of that time and then send a composite message back to the people now living. Individuals could consider the plight of future generations and write a pledge to them that reflected their own, present-day values. A class or other group could create a time capsule and place in it letters to the future, along with a number of significant items from the present as gifts. Finally, on a broader scale, present-day people could help to transform their families, work, societies from being 'past-driven' to 'futures-responsive'. One way to do that is to develop a futures discourse. Here are some suggestions for further work.

1. Have students organise a debate for and against recognising the rights of future generations. Have arguments for and against the proposition aired and a vote taken afterward. What does the result suggest about students' attitudes?

2. Have students who are interested in the future generations theme carry out some comparative research into how other cultures thought about future people and how they integrated those concerns into their councils and day-to-day lives.

3. Develop a project on responding to the needs of future generations. Use the list given above as a starting point and develop a concrete strategy. (Also see sections 4.23 and 4.24, also 1.11.)

4. Use the 'declaration of the rights of posterity' as a starting point for debate, and allow students to collaborate in writing their own version.[15]

Declaration of the Rights of Posterity

Those who live after us have no voice amongst us

We therefore declare and determine their right
to inherit a planet which has been treated by us
with respect for its richness, its beauty and its diversity

a planet
whose atmosphere is life-giving and good, and can
remain so for aeons to come

a planet
whose resources have been carefully maintained and
whose forms of life retain their diversity

a planet
whose soil has been preserved from erosion
with both soil and water unpoisoned
by the waste of our living

a planet
whose people apply their technology cautiously
with consideration for the long-term consequences

a planet
whose people live in human-scale societies
unravaged by population excess

a planet
whose future generations have interests
which are represented and protected
in the decision-making councils of those alive today.

Source: The Council for Posterity, London, 1990.

5. Have students explore the Earth Charter http://www.earthcharter.org/. Are there actions they can be part of, initiatives to be involved with? Positive engagement is profoundly uplifting and is itself an antidote to pessimism and passivity.

4.11 Futures wheels or webs

This simple tool permits an almost unlimited range of speculation about future possibilities. It is probably the most useful and flexible item in this publication, being limited only by the imaginative capacities applied to it. The more often it is used, the

more uses it seems to have. One example has already been met in section 4.7 above and is depicted in figure 4.15. There is more here than first meets the eye.

To draw a futures wheel (or web) students think of a future possibility or event that interests them. It is important that this qualifies as something with tangible consequences, rather than an idea, judgement or other vague notion. The event or possibility is written down in the centre of a large piece of paper. They next consider what *immediate* consequences are implied. These are arranged in a roughly circular pattern around the original assumption. Each of these consequences is examined in turn. If this ... then what? Each 'first order' consequence can be seen to give rise to consequences of its own. These are set out clearly. Students then go on to 'second-' and 'third order' consequences. They continue this process for as long as they like or until they run out of space. What is produced is a pattern of possible outcomes originating with the first assumption.

When futures wheels do not seem successful, it is usually because the originators did not choose a real-world possibility, or because their assumptions at the outset were not clear. Indeed, it becomes clear that the most important influences upon any wheel are the assumptions that go into them. This can be clearly demonstrated by dividing a group into two halves and asking one half to use negative assumptions, the other positive ones. Some of the features of the futures wheel are outlined below.

First, it is an *exploratory* tool; there are no right or wrong answers. The pattern reflects the openness of knowledge. Second, it can be used at any level of sophistication. With young children the teacher elicits responses verbally and writes them down; the developing wheel can be mounted on a wall and elaborated over a period of a week or more. Third, wheels can be 're-run' according to different assumptions (which can therefore be tested). Fourth, if a wheel seems unproductive, the focus or assumptions can be changed. Fifth, the exercise promotes a high level of dialogue and negotiation between partners (usually pairs). When the focus is chosen by the participants it engages their interest at once; a productive wheel gives rise to other interactions (e.g. accelerating and inhibiting factors) and suggests further lines of enquiry. Finally, futures wheels can be very simple or they can be developed into sophisticated forecasting devices. The more students work with them the more uses they seem to have. Here are some suggestions for getting started.

1. Consider the examples provided and have students pick a focus which interests them. Just see what happens!

2. Organise a group to create two separate wheels on the same subject. One is drawn according to positive assumptions and the other according to negative ones. Explore the differences. Which is the more credible version? Can they be combined? What does this exercise suggest about futures thinking in general?

3. Have students agree with another, or another pair, on a subject. Have them develop two wheels without communication with the other person or group. When both wheels are finished, compare the results. Have them account for the similarities and differences.

4. When students have finished a wheel they will have a ring of consequences. Have them examine this carefully and see if it indicates an area for further work. (Also see the cross impact exercise, below.)

4.12 The cross-impact matrix

This device, pictured in figure 4.19, permits students to assess the possible interactions between factors in a systematic way.

	SLOW POLITICAL CHANGE	HIGH TAXES	RATIONING	ATTEMPTS TO INCREASE SELF-SUFFICIENCY	CONFLICTS OVER CHILD-BEARING	TOTALS
SLOW POLITICAL CHANGE		0	+	+	+	+++
HIGH TAXES	+		–	–	+	++
RATIONING	+	+		–	0	++
ATTEMPTS TO INCREASE SELF-SUFFICIENCY	–	+	+		+	+++
CONFLICTS OVER CHILD-BEARING	+	0	0	0		+
TOTALS	+++	++	++	+	+++	

– = Negative impact (inhibiting or less likely)
0 = No significant impact
+ = Positive impact (accelerating or more likely)

An accumulation of + signs identifies major change factors. Here, slower political change (6 + signs) is revealed as a dominant factor and therefore worthy of further investigation. Differences of opinion about the sign in each square can reveal different values and assumptions. These are 'brought out into the open' in this exercise and hence made accessible to understanding and debate.

Figure 4.19 Simple cross impact matrix

In schools the cross-impact matrix is frequently used to assess a field of interactions and to pick out future possibilities for further study. In this approach a list of future events (perhaps derived from the outer edges of a futures wheel) is written down vertically and horizontally along the edge of the matrix. Each interaction is looked at in turn and some form of scoring system is used. The simplest is for students to decide if one factor has a positive, negative or neutral effect on the other. They then write a plus sign, a minus sign or a zero in the appropriate box. Another option is to give the interaction a score from –10 (for strongly inhibiting interactions) to +10 (for strongly encouraging ones).

When the matrix has been completed the results are totalled and analysed. They reveal which interactions are considered to be most important in terms of accelerating, inhibiting or neutral effects. Depending on the nature of the events under study, new foci — in the form of driving or inhibiting forces — will emerge as subjects for more detailed enquiry. In the second example in the figure, slower

political change has accumulated six positive signs and is therefore revealed as a dominant factor. However, as with the futures wheel and other such exercises, it is important to note that the outcomes are a result not simply of rational argument, discussion and analysis. They are equally a matter of underlying assumptions. Part of the value of the cross-impact matrix is the way that a framework is provided for the analysis of possibilities and the 'teasing out' of assumptions. Here are some student activities.

1. Have students consider a completed cross-impact matrix and discuss the proposition that 'underlying hard data there are always soft assumptions'.

2. Have students develop a simple cross-impact matrix to explore possible consequences of an event or possibility of direct concern to them. (Note: if may be necessary to draw a futures wheel first.)

3. Have students think of some aspects of their life that seem to be in conflict. Arrange these on a matrix following the pattern of the first example. See if they can learn something new about the subject chosen. For example, can they set priorities? How important is the issue of time? Can they discern new options? Do they need to consult new people or draw on new resources?

4. Have students select a very negative scenario and try to discover factors that may inhibit it. Can they shape the latter into some type of strategy that could prevent the negative scenario from happening?

4.13 Assessing a technology

Everyone is affected by changes in technology and by new technical innovations. For example, the private car has radically altered housing patterns, the structures of cities, the development of shopping malls and entertainment complexes. Television, computer networking and virtual reality exert impacts on family life, behaviour patterns and social values. Present decisions about transport, energy supply, communications and defence are now helping to create the infrastructure and the future shape of society.

Despite the pervasive impacts of technologies, many people feel unable to express a view, let alone exercise some kind of decision-making power over new developments. The view has been put forward that technologies are simply 'neutral tools' whose impacts depend upon decisions about applications and uses. But technologies do not spring into being as finished objects. They are outcomes of long social and cultural processes. The windmill and the nuclear reactor cannot be understood merely as different types of hardware. They embody different values, assumptions, purposes and serve different social interests. It is crucial to note that behind *every* large scale technical innovation and *every* grand project of the future lie interests that are served in the present.

In learning to assess technologies it is important to 'look beneath the surface' and to be aware that the publicity often given to new technical innovations may only be a marketing device similar to commercial advertising. Which advertiser ever draws attention to the costs and the drawbacks of a product? Consumer organisations sometimes test new products and publish the results. Social movements sometimes critique new developments and proposals. But the testing of most technical innovations normally falls by default upon the public.

It has been suggested that we are living in the middle of a vast global experiment in which new processes, products, pollutants, etc. are being introduced without any thorough knowledge about the long-term effects. This certainly seems to be the case with acid rain, tropical deforestation, ozone depletion and low level radiation.

There is a difference between technology forecasting and technology assessment. The former is often carried out by those interested in promoting or exploiting a technology. It tries to look ahead and discern future technical developments. The latter begins in the present and attempts to take a more wide-ranging and critical view of possible developments and their wider impacts and implications. Of course, assessment and forecasting are linked. Each can contribute to the other. But forecasting alone can conceal an attempt to gloss over important features of the technology in the present. It is therefore useful to begin with assessment and then to move on to forecasting. Remember too that forecasts of the future thus created return to affect the present. In this way forecasts and associated images of futures deeply influence present actions and decisions. Here are some suggestions for further work.

1. Have students paste a picture of a new technology on one side of a double sheet of paper. Ask them to begin to analyse it in terms of values, assumptions, purposes and social interests. If it becomes widely used in this form what could be main consequences?

2. Using the same picture (or a different one) have students make two lists: one of reasons it should be applied; one of objections. Ask them to state their criteria for deciding between the two.

3. Have students collect a number of publicity brochures or pictures about recent technologies and analyse them critically. Have them design some publicity for a technology they are prepared to support. Have them create some 'anti-advertising' for some they would oppose.

4. Have students use the stages listed in 'A technology assessment strategy' to research the human genome project, life extension or nanotechnology and write a brief assessment of the main social implications.

A technology assessment strategy

- What is the problem that the technology is intended to deal with?
- What impacts would occur if the technology were implemented?
- What benefits and costs are likely to be associated with these impacts?
- Who are the decision-makers involved and what body will make final choices?
- Which vested interests are involved and what are the goals of decision makers?
- Which options are open to decision makers and what other options exist?
- Who are the stakeholders and how will the technology affect each of them?
- What conclusions, recommendations, changes can be offered?
- In what form should these appear: e.g. a report, letter, article, etc.?

4.14 Simple scenarios

Scenarios exist in a variety of forms and have a wide range of uses. Essentially they serve to portray aspects of a possible future as clearly and as fully as possible. They may be highly specialised (e.g. depicting alternatives for a particular group, industry, institution, etc.) or wide-ranging (e.g. depicting social or global futures).

It is common for one or more contrasting scenarios to be constructed side by side. In this way different ideas, trends and assumptions may be modelled or tried out. Population data may be used as a source for scenarios of future family life. Energy consumption figures provide a basis for looking at future energy supply. Car ownership is monitored and fed into decisions about the need for future road building. In such cases there may be a split between high trend data, median trends and low trends, each giving rise to a separate scenario. But scenarios can also be used to give an impression of qualitatively different types of social futures. For example, some years ago, James Robertson wrote about a 'business-as-usual' future which he viewed with great concern, a 'he' (or hyper-expansionist) future in which certain worrying trends accelerate and a 'she' (or sane, humane and ecological) future which he advocated.[16]

Scenarios are often presented as written descriptions, often supplemented with graphs, statistics and the like. But many stories set in the future also qualify as scenarios. Some of the best can give a sense of the quality and flavour of a particular future that is entirely lacking in more analytic accounts. Again, the future may be pictured or symbolised as in figure 3.1 Some of the most interesting scenarios combine elements of each and are sometimes called 'future histories'. Many of these have been created by writers of science fiction, such as Isaac Asimov, James Blish and Fred Pohl.

The starting points for scenario construction are many and varied: trends, futures wheels, opinion surveys, students' ideas and preferences, etc. A list of aims or goals can be made, examined for consistency and re-cast in a scenario form. The scenario can reflect back upon the real world by high-lighting contrasts or conflicts which suggest certain lines of enquiry or possible changes. In examining scenarios developed by others, students can try to identify the major ideas, governing assumptions, value judgements, assess internal coherence and comment on other details. Here are some other suggestions.

1. Have students outline a scenario in which schools are dissolved in favour of alternative methods of teaching and learning. Ask them to dramatically depict some of the major consequences.

2. Have students design a class project using scenarios to depict possible futures in their locality. Assign two, three or four groups to cover the main alternatives. Have each group present its scenario as a mounted display. Ask some local people to look at the results and survey their opinions. Summarise the exercise and pass it on to the local planning office. Be sure to obtain an official reply!

3. Figures 4.20 and 4.21 provide some simple statistics from the work of Graham Molitor. Ask students to build scenarios from one of them. Then have them devise an alternative.

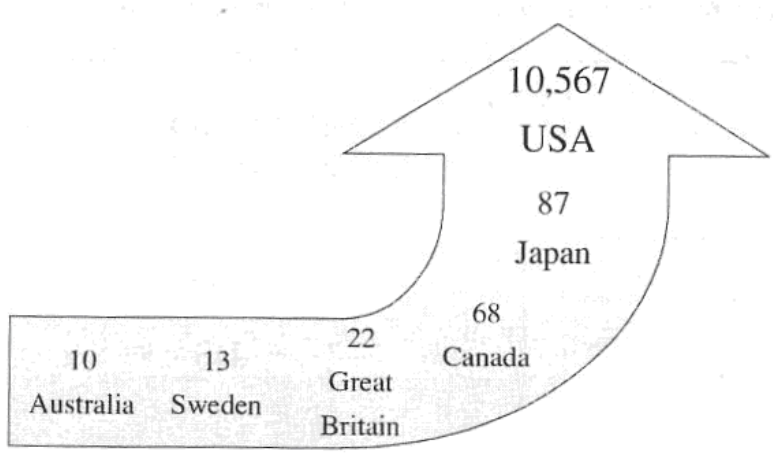


Figure 4.20 Scenario building 1

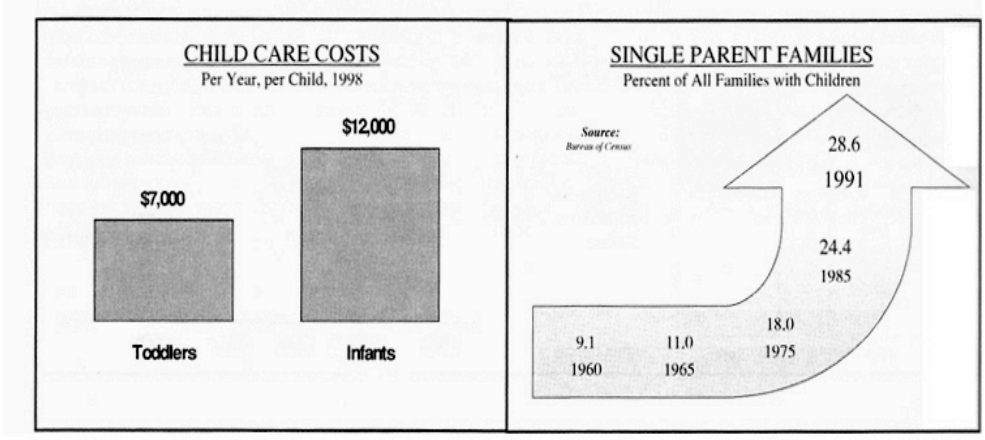


Figure 4.21 Scenario building 2

4. Have students outline a scenario for 'a world that works'. Encourage them to be as optimistic as they can. Once the scenario is complete help them to draw up a list of the projects it implies. If any particularly appeal to them, help them to organise and carry out a research project into possible solutions (see section 4.24: Social inventions).

4.15 Analysing images of futures

Where do images of futures come from? Young people are immersed in an increasingly image-rich environment. Films, TV, video, computer games, comics, magazines, books — and increasingly popular digital 'secondary worlds' — all contain a multitude of futures-related images. Science fiction is a particularly rich source of futuristic imagery, with robots, space ships, computers, aliens, alien planets and so on in a seemingly rich array.

Yet if we look carefully at what these images are collectively saying, there is a good deal less diversity. There are two main messages, and they are often contradictory. One says that the future will be a safe and pleasant place. The other says that the future is dark and dangerous. Why is this?

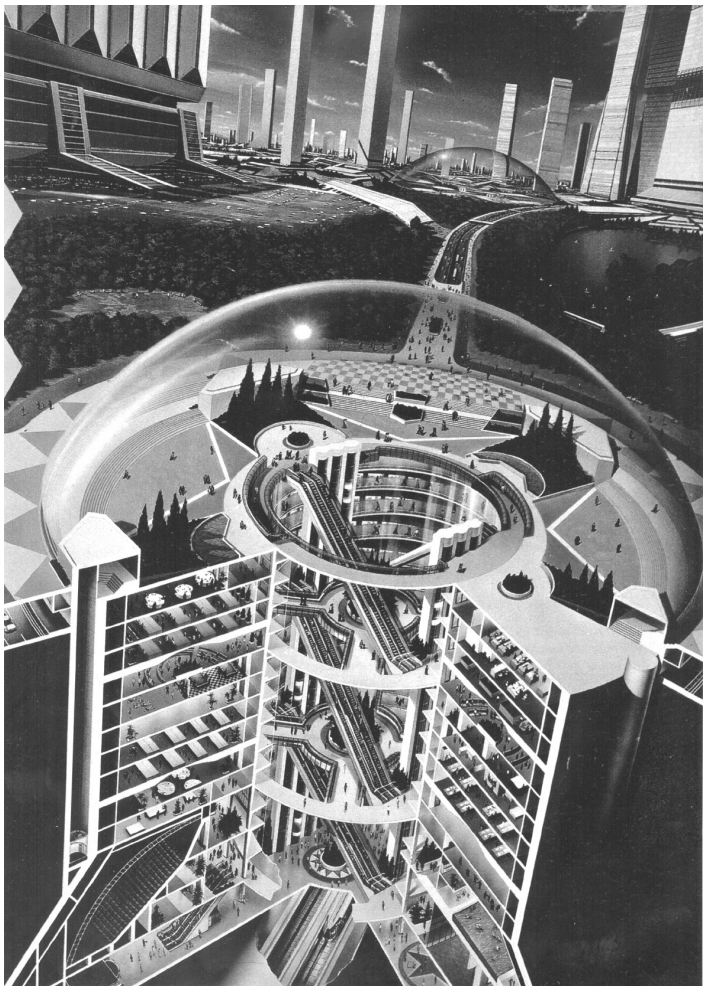


Figure 4.22 Future city

Figure 4.22 is fairly typical of those produced by governments and corporations in association with big projects. In this case the Tasei Corporation of Japan has engaged a skilful artist to render the concept of an 'Alice city' (after Alice in Wonderland) into a compelling image. The latter is intended to help create social support for this development, and hence it is deliberately up-beat, optimistic. By contrast, many images depict a dark, violent and dangerous future; one in which civilisation as we know it has broken down. Some, like the 'mechanical man' shown in figure 4.23, are more ambiguous. Images of this kind comment on the increasingly uncertain boundaries between people and machines. They emerge from films, youth sub-cultures and, more fundamentally, from the real fears which people have about technology and de-personalisation in the future.

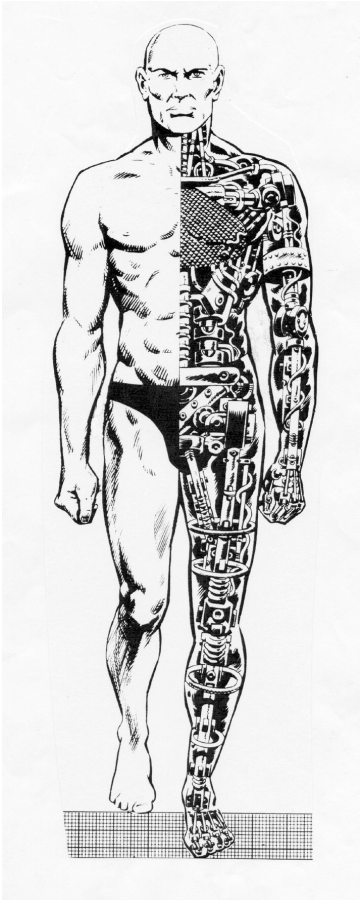


Figure 4.23 Mechanical man

In a survey of young people's media that we carried out a few years ago, we noticed a couple of interesting things. One was that images of futuristic machines and technologies were far more common than images of future people. The other was that categories of good and evil, right and wrong, science and magic were frequently confused in young people's media. This led us to suspect that the images were not as varied or as useful to the young as we had once thought. It seemed that the lack of variety could partly be explained by the dominant ideology of a market-oriented society that 'the future' is mainly constructed of things (science and technology — the dominant 'religion'). But the real range of alternatives and options are obscured because to explore the latter raises awkward questions about power and social control in the present.

In order to get away from the taken-for-granted assimilation of mass-produced images of futures, young people need first of all to examine a number of examples and ask 'what is going on here?'. Second, it is useful to compare standard, stereotypical images with the much wider range of options and scenarios facing humankind. Third, it is vital to allow the young to develop and explore their own image-creating capacities. Hence the following suggestions.

1. Ask students to bring in a range of popular images of futures. Have the group examine all the images and discuss them. Can they be categorised? What do these categories suggest or convey? What ideas and assumptions lie behind them? What social interests might be involved?

2. Have the students brainstorm as wide a range of possible futures as they can. Compare this range with that derived from the images. How can the differences be accounted for?

3. Play some music and have students take an imaginative journey into the future. Have them draw what they 'saw' on their journey. Later, ask them to account for the imagery they created. How influenced was this by media images? How did their pictures reflect their own views, hopes, fears?

4.16 Creating a guide to the next twenty years

Contrary to popular imagining, the near-term future is not a mystery nor a blank and empty space. Careful study and thought suggests that many aspects of say, the next twenty years, can be defined and understood. Metaphorically-speaking, we call this the near-future 'landscape'. This 'landscape' is not clear in all respects. Indeed, in some ways it is like a slightly fuzzy photograph. There is detail, but what stands out most clearly are the larger, structural features. To elaborate the 'landscape' in detail is a long-term, and constantly evolving project. However, artists have sometimes produced 'semi-serious' panoramas such as the one reproduced here (figure 4.24) from a 1990s issue of the World Future Society's magazine *The Futurist*. It depicts many of the key issues and processes of the near-term future, but the effect is markedly down-beat.

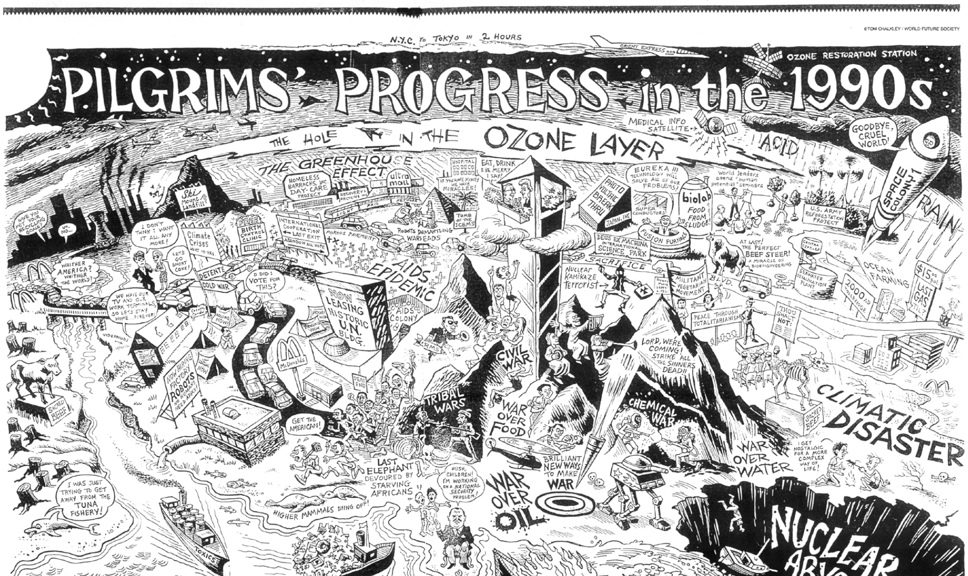


Figure 4.24 A pilgrim's progress

A more analytic and considered approach can be derived from a series of simple questions. These begin to illustrate how the more highly-developed views of professional futurists are developed. Here are some of the key questions.

- What are the main continuities?
- What are the major trends?
- What are the most important change processes?
- What are the most serious problems?
- What new factors are 'in the pipeline'?
- What are the main sources of inspiration and hope?

By asking questions of this kind, some key aspects of the near-term future spring into clearer definition. For example, continuities include: physical laws, seasons, languages and human needs. Trends can be detected in: populations, environmental conditions, societies and economies. Change processes also occur in these areas. In most cases such changes are the subject of careful study by scientists, scholars, critics and so on. World problems are studied by governments, research institutes, bodies like UNESCO and so on. New factors 'in the pipeline' are constantly being created by innovative people all over the world, and this work is reported in many places. Finally, the human sources of inspiration and hope are plentifully available. They can be found in social movements, social innovations, certain traditions of enquiry and in certain spiritual contexts. In other words, the raw material for creating the near-future landscape is all around us. How can it be developed in a school?

1. Assign a group of students to (a) examine the visual panorama reproduced in figure 4.24 and (b) to cover some of the key questions noted above. The students can compare the two approaches and write a short report on their findings.

2. Have them check their work with a recognised authority. Invite some informed speakers to the school for this purpose and to provide a more detailed view.

3. Begin to assemble the results generated by each of the groups. Represent this graphically, visually and in short written statements on a display board. Have the whole class contribute to the project over a week or so.

Finally, have the whole class comment on their 'future landscape'. What does it suggest to them about key priorities for this time?

4.17 Brainstorming and random words

A good deal of our everyday thinking tends to follow established patterns and assumptions. In a word it is routine. Conventional and routine thinking blocks creativity and encourages us to believe that the future will merely be an extension of present trends. This habituated approach is summed up in figures 4.25 and 4.26. The old business as usual approach to global development and its bag of problems no longer holds. As early as 1979 the OECD *Facing the Future* report suggested that 'the complex relationship between values, growth and structures now make any linear view of development untenable'.[17]

There are at least two reasons why creative responses to futures are desirable. One is that many aspects of futures cannot be deduced, extrapolated or forecast from the

present. A second reason is that in the process of negotiating understandings and images of preferred futures we need to go beyond the known, beyond the given. In both cases reason, rationality and analysis only carry us a short way before they fade out into the irreducible uncertainty of the future. But imaginative and creative approaches are not limited in this way. They can leap ahead of the present, make seemingly outrageous assumptions and overturn the conventional wisdom of the day. In so doing they help to free our minds from the limitations of the present — thereby opening up new ideas, new options, new lines of enquiry and aspiration.

Brainstorming is a simple method of stimulating creative thinking within a group. It is useful to have a facilitator who is responsible for the session. It is essential that the participants are relaxed and aware that all ideas will be noted without criticism. These are simply written down as soon as they arise. Once the problem or focus has been stated the session can begin. It is as well to have a tape recorder handy in case the ideas flow faster than the facilitator can write. No judgement whatsoever is made about the ideas as they emerge. In fact the more 'wild' they sound the more they may stimulate the creative process. After perhaps thirty minutes the session can be brought to a close. The evaluation of ideas should take place at a later date. Some find it useful to carry out a preliminary sort into lists: e.g. ideas for immediate use, areas that need further work, innovative ideas requiring special treatment. In this way a useful start can be made on a wide variety of projects.

The random word exercise is more suited to individuals or paired groups. The first stage is to state a problem clearly and in as many alternative forms as possible. Each of the latter can then be followed up in turn. Begin by opening a dictionary at random. By putting the first word you find together with a particular problem you may begin to see the latter in a new way. You can do this either by simply opening the book and choosing the first word you see or by choosing two numbers before you open the book: one for the page, the other for the line. It is important to take a few minutes for your mind to work on the associations generated by the new word. If the juxtaposition is fruitful you can briefly note down the new ideas. If it is not, you simply repeat the process until you are satisfied with the results. Here are some ideas to try.

1. Have a class brainstorming session on future careers. On a later day split into pairs, pick out some of the best ideas and use the random word technique to explore how you might personally *use* the suggestions.

2. Present students with figures 4.25 and 4.26 ask them to discuss the implications of each and ask them to design their own mini stories to illustrate each. Can they recall real-life examples from their own or friends experience that illustrate how we are frequently held back with old ideas and adequate patterns?

3. Locate a book on creativity and explore three new techniques with a class.

4. Brainstorm solutions to a major world problem. In what ways could some of the best solutions be implemented?

'While changing a wheel a man lost all five of the securing nuts, which vanished down a road drain. He had no idea what to do and set about thumbing a lift to the nearest garage. A little boy happened to be passing by and asked what the matter was. When he was told he said, 'Oh that's easy, you just take one nut each from the other wheels and that should see you to a garage.'

THE 'WHY' TECHNIQUE – A challenge to Assumptions

It is possible to use the repetition of the question "Why?" in a way which opens up an idea in an exploratory fashion.

The "Why?" technique is not easy. There is a tendency to run out of explanations or circle back to an earlier explanation or to say "because" if something very obvious is questioned. But nothing should be regarded as too obvious, and nothing is sacred.

Suppose you are a hotel manager and interested in the profitability of your establishment. The questioning is begun with some statement concerning this area of interest. The "Why?" can be focussed on a particular part of the statement.

"The most important point in running a hotel is to keep the occupancy rate above 60 percent."

"Why do you use that figure?"

"Because overheads are covered by this rate of occupancy and above it the takings are almost sheer profit."

"Why are overheads only covered at this figure?"

"Because fixed items like staff and kitchen facilities cannot be varied according to demand."

"Why can't they be varied?"

"Because in the case of the staff you could never keep them except on the basis of full employment."

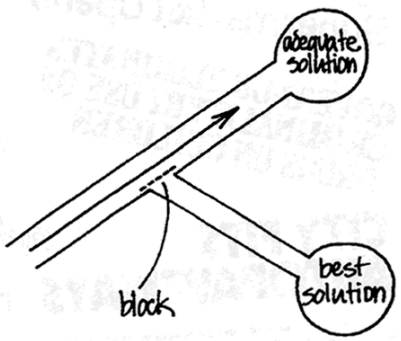
From this point, one could then take off to consider methods whereby the guests could serve themselves, methods of rotating staff, utilizing their capacity more fully, and so on.

The usual intention in asking "Why?" is to seek an explanation, to be comforted, however the "Why?" technique is a refusal to be comforted. It aims at breaking down old assumptions and patterns of thinking so that new patterns may emerge.

Figure 4.25 Escaping from old ideas

After having some friends staying in our house for a week. I noticed that the reading lamp would not work. I checked the bulb and the fuse box but still the lamp would not work. I was just about to dismantle the plug when it occurred to me that one of our friends might have switched off the lamp by the switch on the lamp base and not at the wall, which is what I usually do. This was, in fact, what had happened.

Patterns of thinking often produce perfectly adequate answers to problems and for that reason better answers are not sought.



It is only when something goes wrong that we look for other alternatives.

It is difficult to be aware of alternative pathways when the present path is open. Becoming aware of **what are** the alternative pathways is the purpose of creative forms of thinking. At this stage it is worthwhile to be aware that alternatives **do** exist even if the present path seems reasonable.

The story used at the beginning of the section concerning the wheel nuts is an illustration of an adequate pathway (thumbing to the service station) blocking the creation of an alternative (using nuts from the other wheels).

Think of other examples in your own experience which illustrate that adequate patterns of thinking can block recognition of better alternatives.

Figure 4.26 Blocked by adequate patterns

4.18 Future news

This exercise usefully combines reasoning and creativity with the more usual concern for basic reading and writing skills. Here are some ways it can be applied.

The simplest approach is to allow students to agree on a date some time into the future and to write reports on what may be happening then. Some prior preparation could usefully deal with basic futures concepts and possibilities. This is not essential but it is likely that without any preparation pupils may reproduce existing conventional ideas about futures. Boys in particular are prone to favour space-age imagery that may detract from the value of the exercise.

Another approach is to begin with a series of role-playing exercises in which pupils take on the roles of editor, sub-editor, columnist, local reporter, special correspondent, advertising editor, etc. From these are derived a number of assignments requiring research, interviews, comment and so on. Since this is a *future* newspaper the students will need to draw both upon their imagination and upon surveys, forecasts, scenarios etc. (This process is made much easier if the group has been keeping information files, outlined above.) As the examples in the following figure suggest, this can also be a humorous exercise.

Given the enormous impact of the new information technologies upon newspapers, a visit to an up-to-date office or a browse on the Internet may provide some insight into processes of information dissemination available in the future. In any event, as the work proceeds it can follow some of the stages of a real newspaper or bulletin board. It may be that editing duties could circulate. The end product could be a wall-mounted display complete with photographs, pictures, cartoons, advertisements, special features and news. If the standard is high enough some thought could be given to reproducing the finished product and circulating it locally. Here are some other suggestions.

1. Organise a visit the local planning office and produce a special edition based on the future of your locality/city/region.

2. Hold a competition for the most original future news report/the best cartoon/the most honest advertisement, etc.

3. Devote a special issue to the ways that world problems have been solved.

4. Have students produce a bulletin from the lunar colony in 2025.

5. Have students report on the consequences of a peaceful alien landing in a major city.

6. Help students develop an alternative future scenario very different from what now appears likely. Encourage them to write some reports of that future from the viewpoint of a visitor from another place and/or another time.

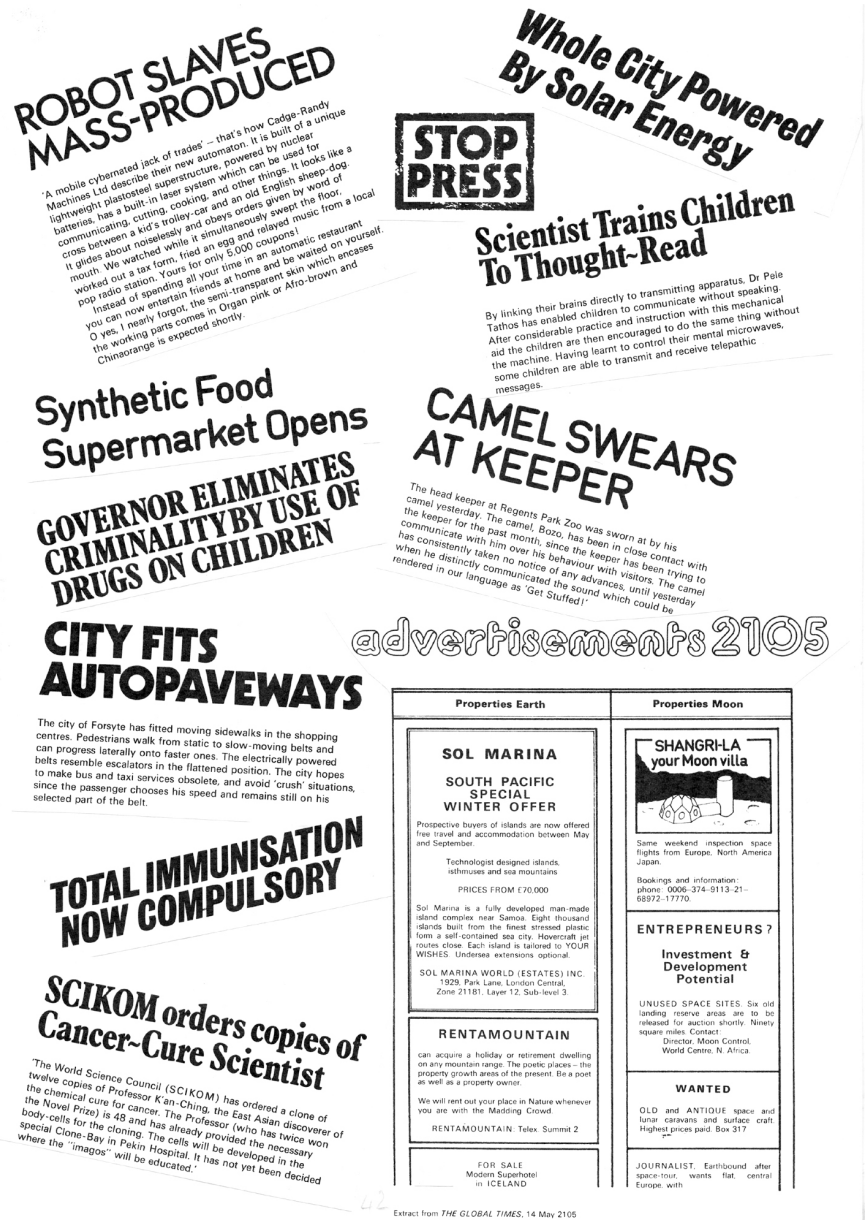


Figure 4.27 Future news

4.19 Jokes, cartoons and symbols

Schoolwork often tends to be too serious, too intellectual. Futures study certainly deals with some difficult problems but it can also be fun. It is well to remember that foresight and a sense of humour are two of the defining characteristics of human beings.

Figure 4.28 Progress at a snail's pace

Humour is also a powerful tool for learning. It helps to stimulate energy, insight and understanding. A good joke or cartoon like figures 4.28 and 4.29 stays in the mind long after more serious points have been forgotten. There is some quality in humour that stimulates mental structures and makes things memorable. The essence of many good jokes is an unexpected shift of perspective. Such shifts can often enhance creativity and imagination. These take on great importance in an area like futures study where reason and analysis have clear limits. Humour can help counter the all-too-common 'literalness' which pervades the life of high technology cultures. It certainly has a place in every classroom.

Figure 4.29 I'd like to be …

Symbols, such as figure 4.31, draw their strength from some of the deepest layers of the human psyche. Some are undoubtedly versions or manifestations of archetypes (or basic image structures which seem to be common to the human race). They are certainly capable of exerting very powerful effects. It is sometimes said that pictures

speak louder than words but a good symbol may be one of the most durable forms of human communication.

1. Have students collect some cartoons from newspapers, cover up the words and ask their friends to invent new captions. Later they can add in their own text and mount the result as a wall display.

2. Visit the Grinning Planet website dedicated to saving the world one joke at a time. They combine humour with political and economic critique. Does it work? http://www.grinningplanet.com/2004/11-02/food-cartoon-french-joke.htm

3. Pick a particular theme — such as computers or future transport — and have students collect as many jokes, cartoons and other visual images as they can. Put the collection in a scrap book and use it as a resource for students to write and draw their own comments on the theme. Run a competition for the best original effort and ask a local artist or writer to act as judge.

4. Have students read the article at figure 4.30 entitled 'Monumental nuclear gift' and design a symbol to meet the scientists' needs. Repeat the exercise for different types of monuments.

Monumental nuclear gift

By Paul Brown

Months of detailed scientific investigation of the best method of marking nuclear waste depositories to deter interference for thousands of years have resulted in a monument looking remarkably like Stonehenge.

The team studied the pyramids, the Great Wall of China and the Ancient Lines in the Peruvian Desert.

But their favoured option was 25 granite monoliths seven metres high and each weighing 25 tonnes to mark the boundaries of the site. The central monolith should be on a raised platform 200 metres across.

Three central markers would each weight 200 tonnes and each would be anchored into a piling. Only massive and deliberate human effort or a new ice age could destroy such a monument, says the report.

The proposals are contained in a 120-page report produced by an American group called the Human Interference Task Force on behalf of the US government. It is intended to provide an international code of waste depository marking and has been accepted by the Atomic Energy Research Establishment at Harwell.

Nuclear wastes are dangerous for more than 20,000 years and the longest recorded civilisation in Egypt was only 5,000 years. This poses the theoretical problem of warning new civilisations of the danger.

The scientists decided that marker materials should have low economic value and poor potential for recycling. Markers should be very difficult to remove, deface or destroy.

They decided that a series of pictures should be carved into the stone so that whatever the future level of understanding, the danger must be understood.

The pictures would be in addition to messages in several current languages. The scientists point out that the Egyptians had written in Greek and their own language since they had no way of knowing which language would survive the longest.

The scientists point to the need to find an internationally acceptable symbol for biohazardous waste. The skull and crossbones was rejected because of its piracy connotations.

They want the monuments to be big enough to be detected by satellites and marked on all future maps.

And the sites could be so attractive that they would attract tourists.

Figure 4.30 Monumental nuclear gift

5. The Foresight International logo is given here (figure 4.31). The design of this logo brings together two symbols: the human eye and a circle. It implies 'looking ahead' on a global scale for, and with, the whole world.

Figure 4.31 Foresight International logo

6. Have students design their own logo (or symbol) to represent their own perceptions of past, present and future time.

7. Have students write a number of jokes or funny stories about the future. Have them read aloud and judge the best according to the laughter level. Why was the winner considered funny?

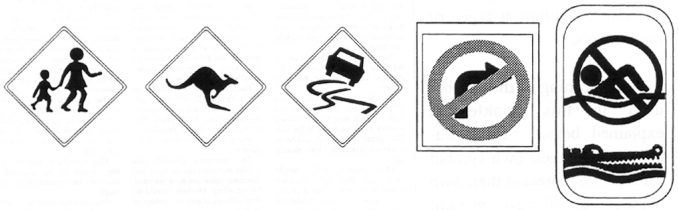
4.20 Futures worksheets

These provide one of the most flexible ways of teaching and learning about futures (but not just about futures). The technique has already been mentioned in relation to assessing a technology and it can draw on some of the skills described in the section on information gathering.

The technique is very simple and can be used by teachers and students. It is ideal for individualised learning programs and provides a simple way of introducing supplementary material into existing courses and modules. One way to begin is when someone comes across an item of interest in a newspaper or magazine the item is cut out and mounted on a piece of paper, it can then be used as source material by students who can add their own ideas or comments, or questions may be added as in the example figure 4.32.

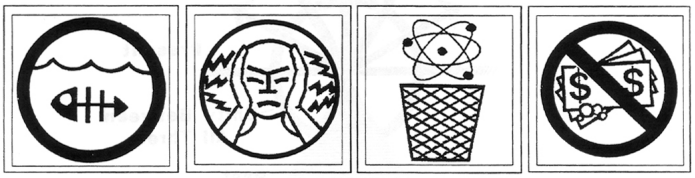
Access to a scanner or photocopier is vital. Master copies of worksheets or good copies should be put on file so that over a period of time a resource bank of material can be built up. The value of the exercise is that subject matter is unlimited, pupils can exercise a great deal of choice over the material and it can be tied explicitly to age, interest and ability.

Inventing The Future Worksheet



The first four signs shown above mean SCHOOL CROSSING, BEWARE KANGAROOS, SLIPPERTY WHEN WET and NO RIGHT TURN. The sign at far right warns swimmers of crocodile inhabited waters in Australia's Northern Territory. Such wordless signs have been commonplace for many years and are especially useful in parts of the world where many languages are spoken.

1. In the future we will probably require more wordless signs. Below are some signs that we might need in the near future.
   What do you think these signs mean?



2. Design wordless signs for the following messages (remember that a diagonal stripe is the usual way of indicating a forbidden activity):

DANGER: ULTRA-VIOLET ZONE	ELECTRIC AUTOMOBILES ONLY
CAUTION: POLLUTED AIR	ROBOTSERVICE STATION AHEAD
CAUTION; LASER CROSSING	NO-CLONE ZONE
REDUCED GRAVITY AREA	NO VERTICAL TURN
ANDROID SPOKEN HERE	GROKKING BAY AHEAD

3. What other wordless messages might be important in the future? Draw a sign that might be needed in 20 years time and one that might be needed in 100 years time.

Figure 4.32 Inventing the future

4.21 Fantasy and science fiction

These two branches of modern literature vary greatly in quality and substance. Yet they also contain some of the most significant resources available for futures study. Both represent attempts to come to grips with the revolutions in culture and consciousness due to scientific innovation. Perhaps the most crucial shift in this work has been from utopianism to the continuing elaboration of dystopia. That is, from fictions which attempted to explore visions of ideal societies to fictions that explore the many varieties of decline and breakdown now in prospect. However, fantasy and science fiction (SF) cannot really be summarised under such simple headings. Work in each area is so diverse, representing so many styles and concerns, that labels can be

misleading. There is much more of value than might at first be apparent from the sometimes lurid covers of paperback books.

The most useful stories for educational work tend to achieve a controlled balance between rational and intuitive elements. In so doing they permit us to explore aspects of futures which otherwise would have remained unavailable. Stories are uniquely set in social contexts but they need not be time-bound. Many serve to reveal elements of futures that could not be reached purely by reason and analysis. One example is the alternate world story. Typically one or more key events in our past are assumed to have turned out differently, thereby yielding an alternate present. This game with history underlines the fact that our present is indeed only one among many possible. From alternative pasts to alternative presents it is only a short step to alternative futures that we help create.

Stories have been written from many motives: satire, criticism, extrapolation, exploration and pure enjoyment. But underlying all these differences is an implicit invitation to look beyond the bounds of everyday life. The best works ask us to view our lives in a longer time frame and in relation to future generations whose reality literally depends upon our own. That essential connection is entirely missed by most mainstream literature.

Some guides to the use of SF and fantasy in schools are available. The *Encyclopedia of Science Fiction* (edited by Nicholls and Clute) is certainly a useful resource.[18] It contains a check-list of themes which covers many futures concerns. Some have argued that one cannot really study futures without a thorough grounding in this literature. SF and fantasy provide many opportunities for futures speculation but, more importantly, they provide a vocabulary of images and concepts that can help illuminate some aspects of futures. Behind the hardware and the metaphors lie critical issues about human well-being, control, survival and the differential evolution of human and technical systems. This is clearly illustrated in the Asimov cover below where human qualities are 'read upon' what is clearly a machine.

Speculation, in fact, is not a trivial pursuit: it is concerned with the nature of things as they are and as they might be. As such it has a legitimate place in every curriculum. Here are some suggestions for using SF and fantasy in the classroom.

1. SF and fantasy are often said to be 'escapist'. How true is this?

2. Have students consider the image of a robot at rest, figure 4.33. Ask them to consider what is being suggested in this image and why it seems to succeed. How do they respond to the idea that human qualities can be 'read onto' machines like this? What dangers might this entail?

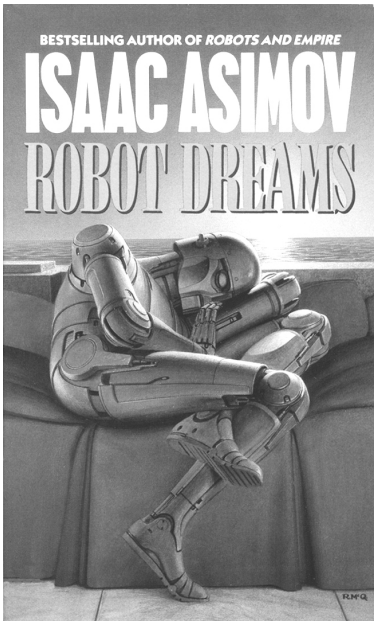


Figure 4.33 Robot dreams

3. Circulate the opening paragraph of an SF story and ask pupils to complete it in their own way. Compare the results.

4. Pick two stories to represent two very different futures. To what extent are their themes reflected in the real world? What are the critical 'branch points' between them?

4.22 Communicating with future generations

Communicating with future generations may seem an odd thing to do, since clearly they do not yet exist. However, there are many ways of doing so. First, there are ways of providing them with voices in the present. Second, there are ways of speaking directly to them. Various writers have proposed an ombudsman for future generations. That is, someone appointed to give them an official voice in the present. Such individuals could be located in offices close to government or in purpose-built institutions of foresight. A *Council for Posterity* was created in Britain a few years ago. The basic idea was to use prominent people to highlight long-term issues through publicity, competitions, staged events and social innovations. Another powerful strategy is to create what has been termed a *Court of Generations* within the judicial branch of national governments. One such proposal for the USA would delegate a citizen from each state and members of the Supreme Court for high-level national dialogue about current and future issues.

A different approach has been taken by Allen Tough, who has trialled a *Council for 2020* and also developed the notion of making a pledge to future generations. Such a pledge is included below. The case of a council 2020 requires a group exercise to be performed in which people think themselves into the frame of mind of people in the future. They then speak as if from that viewpoint in order to communicate with people in the present. This is similar to the *Council for all Beings* in which individuals

take on voices representing other species. Both can be surprisingly effective and very moving for participants. Composite messages can be derived from each, drawing attention to specific concerns. On the other hand, a pledge to future generations is a personal statement from an individual about their stance toward the future and the kinds of commitments they are willing to undertake. This is a useful way of making explicit some of the ethical concerns to emerge from the future generations debate, and of transforming some of them into personal actions.

Finally, there is one very practical way of communicating directly with future generations — the time capsule. This provides a rare opportunity to do two things. Firstly, to scan the present for items of particular interest or value as direct gifts to future people. Secondly, to frame specific and concise messages which will be left for them. It is an unusually moving thing to initiate a message that will not be read until long after one's death. It concentrates the mind very effectively. In such a message, one speaks from the heart, is keenly aware of passing time and is also deeply aware of the implicit presence of future people. Hence this is a consciousness-raising activity par excellence.

A Sample Pledge to Future Generations

Although humanity is far from perfect, it is definitely worthy of my respect, affection, compassion, and nurturance. I am fully aware of the pain, suffering, ignorance, selfishness and greed in the world, but I do not condemn human civilisation nor write it off as hopeless. I believe that a satisfactory future is possible if enough people care about future generations, understand today's options, and make appropriate choices.

For me, it is very important that humanity and other life on our planet continue to evolve in positive directions. Nothing is more important that the continued flourishing of human culture and society over the next few decades and beyond. Because I care deeply about humanity and its future, I do my best to live up to the following principles.

(1) I care about the well-being of future generations. their needs are just as important as those of today. when I am making a major choice in my own life, when I am facing a significant ethical or moral question, and when I am involved in policy making or decision making, I take into account the needs of the next two or three generations. no short-term or narrow goals should be allowed to jeopardise our long-term future, my choices support he principle of equal opportunity for each future generation: their opportunities and well-being should not be less that ours.

(2) I choose paid work or volunteer work that makes a positive contribution to humanity's flourishing. I do my work with conscience – ad with respect for the well-being of future generations and our planet.

(3) Because the institution of war causes so much harm over the years, I speak up against all wars, terrorism, organised violence, and arms manufacturing. Better ways exist for handling conflicts, greed, anger, and the urge for revenge. Because I believe the world's storehouse of weapons should be kept below the level capable of ending civilization as we know it, I support campaigns for a huge reduction in nuclear, biological, and chemical weapons.

(4) I play my part in halting the deterioration of our environment and I support efforts to achieve a sustainable relationship with our planet. I try particularly hard to avoid actions that might reduce the ozone layer or increase global warming, I understand that people who own and consume more than they really need do even more harm to the environment than the desperate efforts of the poorest one-fifth of the world's population to survive.

(5) I understand and support humanity's urgent need ot halt population growth in all countries. In my own personal decisions, I am strongly influenced by this, I take highly effective steps to avoid pregnancy except when I have made a careful and thoughtful decision to have a child.

(6) Through words and actions, I support some of the additional goals and direction that will help our civilisation to survive and flourish over the next few decades. These positive goals and directions include the following:

- the health and well-being of children;
- understanding and cooperation among diverse cultures;
- a deeper understanding of the universal and our place in it;
- a more profound body of knowledge related to world problems and our future;
- widespread learning and change;
- widespread human rights, civil liberties, and political participation;
- a designated spokesperson for future generations in all political and military decision making;
- experiments with innovative policy making and governance.

(7) I support local organisations, political parties, government policies, and international organisations that foster these six principles. I oppose those that do not take seriously our responsibilities to future generations,

(8) When deciding to spend my money and time, I seek an appropriate balance between my own needs and those of humanity. Instead of choosing luxuries and activities that hard the environment, I focus on my most significant underlying needs, such as relationships, learning, giving, contributing, vigorous health, a spiritual connectedness to nature, and other simple joys in life. I do not use material goods to meet my psychological and social needs.

(9) I continue learning about the world's problems in some depth, and about our various potential futures ranging from highly positive to extinction, I face my feelings about these problems and possibilities, and avoid becoming stuck in hopelessness and paralysis. I speak up to counter misinformation and untruths but I also keep an open mind to new ideas and perspectives.

(10) I live in a decade during which some of the most important choices in the history of human civilisation will be made. I happily accept the heroic challenges of this decade: turning away from the paths that probably lead to worldwide catastrophes, and switching to a path that dramatically improves humanity's prospects for a flourishing and positive future.

Thus, the fact that future people are still in the future can be compensated for in a number of practical ways. By giving them proxy voices, by 'asking' them to comment on our world, by 'listening' to them, by having an ethical stance toward them, by making a pledge, and by leaving time-capsules, we expand the possibilities for discourse and for influence to be exerted upon their behalf. There follow some suggestions.

1. Assign an individual or group to take on the role of ombudsmen for future generations. Have them select some issues that would concern the latter and address the group about these concerns.

2. Carry out the Council of 2020 exercise but change the date. Have students think themselves into 2050 and then create a composite message to people in the present. What are the key concerns?

3. Carry out a time capsule project. What aspects of the present would the group want to send to the future. What things would they like to say to future generations?

4. After carrying out some of the other exercises in this book, encourage students to develop their own personal pledges to future generations. Taken together, what do these pledges suggest about their attitudes toward the unborn?

Another way of tackling this question of inter generational communication is to look at parallels from indigenous traditions. The Native American story-teller Paula Underwood wrote a story called *Who Speaks for Wolf?* in which she describes a tribe negotiating space for a village with wolves. It is a poetic story and can easily be translated to a situation in which groups choose a spokesperson for futures generations. When planning things in the social and cultural spheres we can ask, 'Who speaks for tomorrow?'.

4.23 The values game

Values determine what kind of reaction we have to situations we encounter in life. Some of these values we wear on our sleeves while others lie hidden in our unconscious. Such values cause us to react in different ways. Take for example a man who has no trust. He will see the world and others as out to get him. He may also have fear, and therefore react either aggressively or with terror when faced with a threat.

The values game allows students to experiment with root causes to personal and social responses to situations.

1. Ask the class to generate a set of values. These need to include both positive and negative ones. They need at least twenty.

Put these into a 'hat' and divide class into groups of 4-6. Have each group draw four values from the hat and ask them to use these values to explore possible responses to the following set of unexpected events.

You win the lottery

A shadowy figure follows you as you walk through a dark park

A woman offers you a gift

A parking attendant books you for parking too long

You take a friend out for a meal and find they are vegetarian

These sketches can of course be added to by the class.

2. Have the class reflect on the way they chose responses according to the matrix of values they had.

3. Replay the game a week later and observe any growing sophistication on the part of students in handling the process and thinking.

4. Have the settings role played for greater effect.

5. In the light of this process look at history for further elaboration of the thinking involved. Choose figures from history and look at their actions and make educated guesses as to the values that underpinned their choices and actions.

6. It is also worth exploring the internet which has many positive sites devoted to values, their maintenance, elucidation and teaching. Check out http://www.livingvalues.net as a starting point.

4.24 What are social inventions?

Social inventions are as old as human societies. They arise in response to challenges to social order and are in fact conscious or unconscious responses to challenges that require shifts in the processes of social ordering. The earliest forms of social invention — the family, the hunting group, the tribe — are social inventions. Then came standing armies, government and marriage. Human history exhibits a continuous interplay between social and technical inventions. However the latter are more visible: the stone axe, the throwing stick, steam engines, bridges, aircraft, computers and communications satellites.

The dialectic between social and technical innovations is nowhere more clearly revealed than in the establishment of cities. As land was cleared for farming and other purposes, so people were driven into cities. This created the need for social innovations such as the poor house and the urban police force. But, equally, the bringing together of so many people in such a restricted area also created problems that were solved by technical means: the urban sewage system, new modes of transport and, more recently, the skyscraper.

During the twentieth century, technical invention sped up enormously to the point where it seemed to outstrip human and social capacities. Hence there's a widespread perception of an *imbalance* between technical and social inventions. In the context of a crowded and divided world, with major environmental problems and a series of powerful new technologies 'in the pipeline', the need for appropriate social inventions has taken on a new urgency. This was one of the reasons behind the establishment of the London-based Institute for Social Inventions http://www.alberyfoundation.org/. This organisation seeks to encourage the development of social innovations as a counter-balance to technical ones. It has published a number of books containing examples of social innovations and hosts the website The Global Ideas Bank found at http://www.globalideasbank.org/site/home/.

In fact many initiatives and institutions have sprung up around the world in response to perceived needs. There are many examples of local self-help initiatives, national and international NGOs (non-governmental organisations), and large-scale innovations such as the United Nations, UNESCO and so on. It follows that the

combined efforts of this diffuse, but powerful, constituency are substantial. They range from various forms of indigenous development, debt-for-nature exchanges, new economic indicators and the steady emergence of institutions of foresight.

Social inventions emerge because people see a need, or a problem, and act to deal with it. Thus many social inventions take the form of new and imaginative projects. By looking more closely at how these projects are created it is easy to see how social inventions can be created and implemented by almost anyone. Their egalitarian character means that people everywhere can take part in improving the conditions of their lives and responding constructively to the great problems and dilemmas of our age. Here are some suggestions for further work.

1. Have students look for a local example of a social invention. Have them discover what problem or need it was intended to address. What strategies did those involve use, and what problems did they face? How did they overcome the latter?

2. Have students create a simple taxonomy of social inventions. What areas are well-covered and which are not? What explanations can be advanced to account for any discrepancies? Choose an area that is under-served and propose an appropriate innovation.

3. Have students make a careful study of a significant (i.e. large, powerful or effective) social innovation. What explains its success? What lessons can be learned from it?

4. Have students use the 'future choice predicament map' (figure 4.34) to generate a list of possible future social inventions. Can these be prioritised? What might be the next steps?

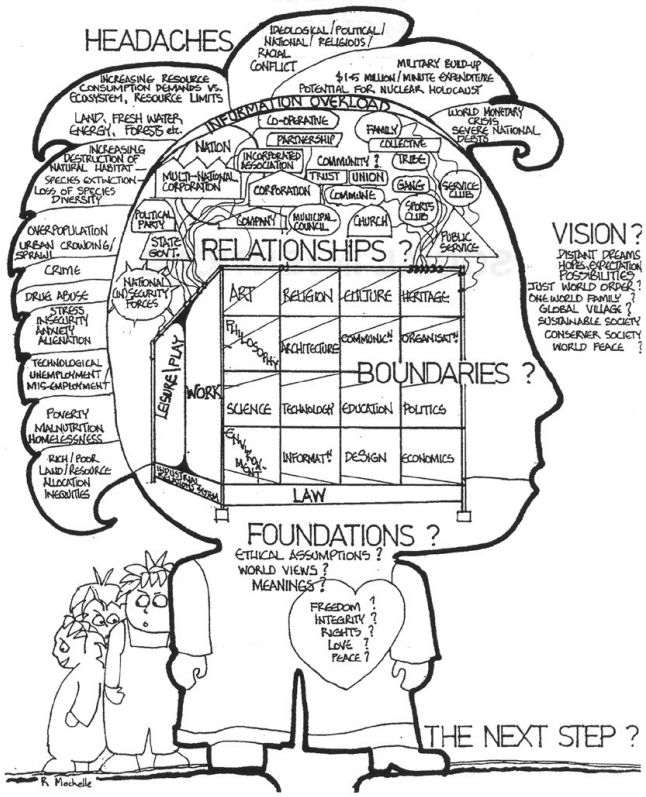


Figure 4.34 Future choice predicament map

4.25 A social inventions workshop

The purpose of this exercise is to introduce young people to the art of creating a social invention. It is taken from the booklet *Social Invention Workshops*, published by the Institute for Social Inventions. Many groups have used this approach before. Examples of the inventions produced include: a charity disco; re-decorating part of a school; videotaping students being interviewed by a local employer; girls making a video for younger girls about their relationships with boys; and the planting out of a community garden.

In outline, a project takes from about four to six weeks. The first week is spent listing possible problems; the second brainstorming possible solutions and selecting a project; the third refining the project, research and drawing up an action plan; the fourth week onward, carrying out the project. Go to the Global Ideas Bank found at http://www.globalideasbank.org/site/about/detail.php?articleId=29 and encourage students to explore the links from this site.

Session 1

Outline the timetable and main steps. If students are not used to working in pairs or groups some 'ice-breaker' or 'warm-up' exercises may be useful. Pairs are formed and each individual tells the other about things that concern him/her. The whole group makes a list of these items and may also add more. After a 'wish fulfilment' session in which students are encouraged to advance any wild ideas for dealing with some of the problems, the list is voted on. Each nominates three problems to be brainstormed in the next session. The group considers those chosen and the wording may be improved. The feasibility of the problems chosen should also be checked. After the session the problems selected are typed up and copied.

Session 2

Explain the rules of brainstorming (no criticisms, wild ideas are encouraged, state ideas briefly, go for quantity, not quality). The group is to look for ideas for projects they would like to carry out. After a warm up session, the group selects a problem to work on. It is written up and the responses are noted. When one or more problems have been treated this way, the group moves into an evaluation phase by asking questions. Is the idea new and imaginative? Could it have lasting effects? Could it benefit a large number of people? Could it act as a model? Could it succeed in the time available? Students then vote for the ideas they felt most worth exploring further. Again these should be checked for feasibility. For homework, students can begin to write down a draft action plan.

Session 3

The aim now is to draw up an action plan and to select criteria for evaluation of the results. Several questions are useful here. First, in formulating the problem: what are we trying to do? What effects are we hoping to create? Why have we chosen this problem. Next, the plan. How do we plan to do it? What are the likely obstacles? Now monitoring. How will we know when we are on the right track? What activities do we plan and when should each stage be started and completed? And assessment. How will we know at the end of the project if, or how, we have succeeded?

Session 4

At this point, each session should begin with going through the 'action minutes' — the things to be done, and by whom. Students will divide into pairs or working groups to carry out specific tasks. If some need to leave the school premises, issues of safety and permission will need to be covered. In many cases a project can be given an extra boost if a video is made of it as it proceeds.

Final session

Students gather to discuss if the project was completed on time (and within budget if there was one). They should fill in a personal assessment sheet with questions such as the following. What did I contribute to the project? How did what happened match up to what we intended? What went badly and well? What did other people think? How could it be done better or differently another time? How could it be extended or done elsewhere? In these ways students review what they have been practicing. The project should be written up and kept as a permanent record. The Institute for Social Inventions is always happy to receive these reports and to advise on future projects. If the report has something original to offer it can also be posted at the Global Ideas bank http://www.globalideasbank.org/site/home/.

Two Role Playing Workshops

Role-play is a powerful way to introduce abstract concepts like caste, class and ideological positions. Students can try them out and then think about designing their own futures workshops based on the power of role-play.

4.26 The Sarkar game

This workshop was developed by Peter Hayward and Joseph Voros to introduce students to the macrohistorical thinking of the Indian philosopher and mystic Prabhat Rainjan Sarkar. The material presented here draws from their paper describing the exercise and its effect.[19]

Sarkar's theory of the social cycle is concerned with the ways that humans, and their social organisations, have dealt with the existential problems of how their physical and social environment relate to one another. His theory of macrohistory proposes that civilisation has cycled through four major 'states': being dominated by the environment; attempting to dominate the environment with the body; attempting to dominate the environment through the mind; and, dominating it through the agency of the environment itself. His theory defines these four 'states' as both material power structures and as epistemic or paradigmatic forms of individual and collective psychology. Further, each state has a beneficial phase (*vidya*) and a perverse phase (*avidya*); thus, even though each state is successful in managing existential problems, it also contains the seeds of its ultimate decline.

The class contained about 20 students. They were placed in groups of five in the four corners of the room. Each group was given a 'script' for their group. Each script was simply a list of three to four sentences that captured the essence of the four 'social cycle' groups (worker, warrior, intellectual, merchant) without using the name. The teachers stood in the middle of the room and played the role of the socially engaged *sadvipra* who broke the cycle when it became negative.

First the worker group were asked to say what they wanted (food, shelter, safety!) and the warriors were invited to respond to the workers. The interchange between those two groups was allowed to continue until the form became *avidyan,* at which point the teacher held up a red card (as a referee does in many international sports) and stopped the process. The Intellectual group were invited in and asked to respond to each of the other two groups. That interchange was allowed to continue until it too turned *avidyan* (red card!). Then the merchant group was invited in and the process was repeated.

The first observation from the teachers was that the process was fun and lots of energy went into the game. The groups very quickly dropped into the caste roles, even with their very simple scripts. Second, the change process degenerated very quickly into chaos. Third, the warriors were quietly confident that they could bring order 'because we have the guns' and the merchants were also keen to 'do a deal' with all parties so that 'we all get what we want'. The lost group here was the intellectuals because they found it very difficult to find the ideational hooks with which to bring orderly change.

To close the learning loop the experience was followed with a lecture – the lecture drew out Sarkar's theory from the experience and insight of each of the groups. The lecture was very interactive with many people involved in suggesting, 'how the cycle works', and the observation made that the key role of the *sadvipra* was made very clear by the example of the teachers during the game. The lecture went for over two hours and had to be ended because of time pressure, rather than any lack of student interest. Days later students were still saying how much they enjoyed the experience and saw the relevance of the theory, some of them incorporating the insights in their class presentations on other topics dealing with global change.

4.27 The four classrooms

This workshop was developed by Marcus Bussey to introduce teachers to the value systems that underpin different approaches to classroom management and teaching.

These notes are for the facilitator who can use these notes as part of the reflection after the activity.

Teachers usually fall into three groups:

1. The old style authoritarian teacher (as authority) who has a paternalistic attitude to students and their families. [Positive values: respect, discipline, order]

2. The humanist teacher (as scholar) who has a devotion for the mainstream (middle-class) knowledge categories and a desire to share (in order to enlighten/inculcate) with children and their families. [Positive values: respect from sense of relationship, self-discipline, order, cooperation, curiosity, life-long learning]

3. The critical teacher (as revolutionary) who has an awareness of how knowledge and power go hand in hand and a desire to develop critical literacies in children and their families. Classroom is democratic and children have a say in learning. [Positive values: respect from sense of relationship, self-discipline, order, cooperation, curiosity, life-long learning, sense of justice, issues-based awareness, confidence, no fear of change, self-awareness and reflexivity]

Teacher one sees classroom practice in terms of discipline and information transferral (fear). *Teacher two* sees classroom practice in terms of collaborative learning, curiosity and a sense of knowledge acquisition as an end in itself – a passport to higher social status and value (engagement). *Teacher three* sees learning as a practical, democratic and libratory project in which students gain critical capacities and the skill and confidence to engage with social change (passion).

There is also a fourth: *the neohumanist teacher* (joy). This individual builds on the other three. They integrate and synthesise positive value structures with a spiritual context and a sense of depth, promise and joy. This inclusive incorporation of the other levels is reminiscent of Wilber's holonic evolutionary theory. This is not expressed so much in words as in practice. Meditation builds the foundations, clear sense of spiritual and social mission directs personal energy, devotion is contagious – children feel connected to something greater. Teacher is both co-learner and wise guide.

The four classrooms game

This game explores these four positions through role play and reflection.

Divide workshop into four groups.

Give them the four categories of teacher in the classroom as follows:

1. Teacher as authority: rule of law. Discipline and punish questions and dissent. Reward correct answers.

2. Teacher as scholar: rule of reason. Teach through fascination and curiosity. Reward interest and ignore dullness. Praise and dramatise.

3. Teacher as revolutionary (critical pedagogue): rule of questioning. Democratic process challenged by questions from teacher. Information shapes opinion and guides social action. Self-interest identified with the group and the globe. Classroom a microcosm of the globe.

4. Teacher as authority / scholar / revolutionary: rule of love. The rational is applied benevolent intellect. Classroom as continuing conversation – choice shaped by emerging process – teacher will initiate activities and processes that opens heart-head dialogue both for individuals and the group – collective singing and other creative none-language based actions. Meditation is either implicit or explicit according to sense of teacher. Wonder and awe a key feature as is sense of mission and the interconnectivity of all things.

Each group will team teach according to their reading of the profile given above. They are not to tell the other groups what their profile is.

Give each group a number on a card with their profile attached and allow five minutes (maximum) in private spaces to work out how they will run their class.

The facilitator then calls the groups together and sets some rules.

Follow instructions of the leading group;

Act quickly as there is only seven minutes for each group's role play;

Don't talk/reflect while in process;

Behave as you would if a student in a class;

Keep questions till after the four groups have run their class.

The facilitator then runs the classrooms in numerical order (1, 2, 3 and 4). It is important to progress in the correct order so as to get a sense of the opening up of the personal, psychological, emotional and spiritual space. The facilitator calls out the next number when seven minutes is up. There should be no time for reflection until all the classrooms have been run.

Facilitator calls stop!

Reflection time one

Allow five minutes for people to talk in their own groups about the experience.

Reflection time two

Entire group now discusses the experience lead by the facilitator who asks these questions:

Were there emotional responses?

What names can we give to each classroom?

Where would we find each classroom in Australia?

What are the strengths of each model?

What are the weaknesses?

If we were teachers, and some of us are, what do we need to do to work towards the neo humanist model?

How do we build a bridge between language (rhetoric) and practice?

PART 5: FUTURES THINKING FOR SOCIAL FORESIGHT

5.1 Futures literacy and engaged foresight

So far this book has worked on developing a futures consciousness by supplying teachers and students with futures concepts and a range of techniques for applying futures ideas to the present in order to deepen our thinking, develop social foresight and attune our actions to their future consequences. These concepts, techniques and the values that inform them are all part of an extensive critical futures literacy, this term covers the broad range of futures concepts and practices that constitute the futures field. Futures literacy results in an informed and engaged foresight.

Foresight, in the extended form discussed here, develops when we have synthesised this work and begun to feel a degree of comfort with the futures field. Critical futures work is always challenging and should never be too comfortable for practitioners. Yet there comes a moment when critical futures emerges as the intellectual and ethical ground upon which we stand and from which we work.

Critical futures work is sensitive to complexity and acknowledges depth in human individual and social action. It is value based and recognises that knowledge is constructed not absolute. It is sensitive to nuance and recognises the importance of context. Critical futures is also aware of patterns within human behaviour and takes varied perspectives on time from the short-term to the very broad macro-historical sweep.

To be effective critical futures is also participatory in that it acknowledges that groups build futures more effectively than individuals can. In this it recognises that *ideas are only useful if they can have effect*. Critical futures may therefore be driven by inspired vision and, at the same time, moderated by deep-seated pragmatism. Futurists develop methods to convey the lived reality of ideas and to open up groups and individuals to alternatives. They challenge the passive colonised future rooted in custom and habit in favour of more open and fulfilling futures to us all. In this sense critical futures work is a libratory project with a clear moral and ethical agenda. Yet, since it is participatory it does not impose morals or ethics on people, but challenges them to develop and articulate their own. Overall, it has a clear and inclusive core of values, celebrates diversity for its own sake, is aesthetic, intuitive and critical.

Finally, critical futures recognises the physical limits, the emotional limits and the social limits before us and seeks to develop sustainable pathways beyond the industrial flatland that characterises Western culture. This section looks closely at the idea of sustainability and then offers two sophisticated approaches to deep futures thinking.

5.2 Safeguarding the sources of life

These final sections make no attempt to be 'objective'. Here we openly explore some aspects of the shift toward sustainability. This is not a 'value-free' process. It is an openly 'normative' view of a future worth living in which stands in contrast to some of the dominant forces that have shaped the world since the Industrial Revolution.

The primary fact of our age is that *human impacts on the global environment are accelerating at exactly the time that the ability of ecosystems to support life are declining*. This steady opposition of forces is undermining the well-being of present and future generations. We have already exceeded many global limits and most of the major systems are in

decline. Fisheries are over-exploited, tropical forests with their wealth of species are still being cleared, the earth's atmosphere is warming, the ozone layer is thinning, and so on. It is mainly specialists in a number of fields who are keenly aware of the great extinction that is now taking place. All over the world we are losing species: flowers, insects, frogs and birds. Of the more than 9 000 species of birds in existence, some two-thirds of them are thought to be in decline. It is a staggering statistic and, overall, a very depressing picture.

Yet, as suggested above, the empowerment principle implies that the key to responding does not lie in the source of the concern but in developing high-quality responses. In this context, the latter includes: diagnosing deficiencies in the industrial worldview, envisioning futures worth living in and, more immediately, outlining steps toward sustainability. The fact is that we know in some *technical* detail how to begin the necessary shifts, but we remain caught up in complex learning lags that mitigate against them. So what are the essentials of a shift toward sustainability? For Lester Milbrath, caring for the ecosystem necessarily becomes a core value. This is what he says:

> viable ecosystems nurture all life, not just human life. Ecosystems function splendidly without humans but human society would die without a viable ecosystem. Individuals seeking quality of life require a well-functioning society that must be supported by a well-functioning ecosystem. If we follow the logic of those statements, we must give top priority to the good functioning of our ecosystem (and) second priority to the good functioning of our society; only when the viability of those two systems is assured is it permissible to seek quality of life in any way we choose.[20]

What this amounts to is a revolution in our ways of thinking and valuing. Western culture, based on the powerful tools provided by science and technology, has pursued the fantasy that the future can be secured by these alone. But we can now see that the values driving the global economic machine are wrong: if they continue our over-extended societies will ultimately collapse in chaos. However, instead of merely being depressed by this outlook, we can use it as a powerful stimulus for system change. We can change the worldview, revise our values and begin to act as compassionate stewards of all life.

1. Have students discuss the dilemma noted above and then carry out the following exercise. Use the table opposite to list the values driving the global system to disaster and the values inherent in the push for sustainability. Have them identify the interests and constituencies associated with each and to draw conclusions.

2. Obtain a copy of Milbrath's book *Envisaging a Sustainable Society*. Have individual students read a chapter each and summarise it for the class. Have the whole group summarise the argument and their response to it in their own words.

3. Have students consider the notion of 'stewardship'. What does it mean? If it were adopted as a dominant social value, what changes might we expect to see in the way we approach and utilise our environment?

5.3 Choosing limits

In the first *Limits to Growth* book, published in 1972, the Meadows team suggested that the basic problem for humankind was to either choose its limits and halt the process of deterioration, or have the limits imposed on it by nature in the form of famine, disease, war and environmental decline. This uncomfortable message was widely reported, but later neutralised by analytical criticisms of the computer modelling, and by the influence of powerful groups with an unconditional commitment to earlier values, patterns of thinking. Some twenty years later the authors revisited their thesis in *Beyond the Limits*.

The new book examined exponential growth in the world and comes to broadly similar conclusions. It begins with a lucid account of exponential growth as a driving force, and the dangers it brings with it. It is an insight that is seldom articulated, either locally or globally. It continues with an accessible account of the nature of limits on the planet: the sources of raw materials and the ultimate 'sinks', or final destinations, of wastes and pollutants. It then considers the dynamics of growth in a finite world. Near the end of this chapter is a passage that encapsulates a key part of the message of the book:

> Because of the time it takes for forests to grow, populations to age, pollutants to work their way through the ecosystem, polluted waters to clear, capital plants to depreciate, and people to be educated or retrained, the economic system can't change overnight, even if it gets and acknowledges clear and timely signals that it should do so. *To steer correctly, a system with inherent physical momentum needs to be looking decades ahead* (emphasis added).[21]

Finally, their *Limits to Growth: 30-Year Update* was published in 2004. Here the authors reviewed the evidence they had gathered over the whole period, including the feedback they had received. They re-calibrated their 'World3' model and presented new evidence to suggest that our civilisation may already be in 'overshoot' mode. For example, they refer to research carried out on the human environmental 'footprint' (see next section 5.4) which suggests that 'human resource use is currently some twenty percent above the global carrying capacity'. They explore a number of strategies for avoiding collapse and put forward a series of what they term 'tools for the transition'. These include: visioning, networking, truth-telling, learning and loving. Taken together the message contained in these three books suggests that the human species is dangerously over-extended on this small planet and urgently needs to take active measures to re-assess the currently unsustainable nature of global demands.

The *Limits to Growth* series act as primers for the greatest challenge facing humankind. Here are some suggestions.

1. Have students examine the basic thesis in *Beyond the Limits* about exponential growth. Have them probe the assumptions, argument and methodology. To what extent do these stand up?

2. If the basis thesis is sustained, have students consider each of the strategies outlined in the book, evaluate them, and also suggest their own. What stands in the way of each?

5.4 Constraining commerce

The view of people as mere consumers was never satisfactory because it only addressed a part of human beings. As Erich Fromm showed with great clarity, material goods may provide the means to live *with*, but they were never able to supply anything to live *for*. This lack of purpose is part and parcel of late industrial times and has helped produce the spiritual vacuum that lies behind the marketing glitter.

So a priority for commerce in the twenty-first century is to recover a broader vision of what human beings are and the nature of their real needs. The confusion surrounding this key area means that the people of the affluent West are suffering from a lack of meaning and purpose, while on the other, the poor of much of the rest of the world are suffering because their basic material needs have not been met. As is well known, the contrast between the two is a breeding-ground for endemic violence, hatred, jealousy and anger. This is unsustainable in a closely interconnected world. It can only be borne now because of geographic distance, the protective role of short-term thinking and future-discounting. When these are removed, our eyes look out on a fragile, interconnected world steadily slipping into profound crisis. Yet a wider, long-term vision suggests that both sets of needs can be addressed as part of a successful transition to a safer, saner world.

The logic seems inexorable. The rich West is challenged not only to reduce its material consumption and its impacts on the global system, but also to help the less well-off to improve their own lives. From within the confines of a rapacious, materialistic culture, commercial imperatives have 'constructed' whole populations as mere consumers, overlooking their innate potential for meaning-making and the limits of the global system. But as our view extends forward and we clearly perceive the logical consequence of the old system, so we discover a new stimulus and rationale for change. This idea has been lucidly articulated by Susan George and her colleagues at the Transnational Institute. Their book *The Debt Boomerang* clearly shows how the debt crisis in the Third World re-bounds on affluent populations through several routes: environmental deterioration, the drug trade, abuses of the banking system, lost jobs and markets, immigration, conflict and war.

Commercial interests therefore need to think what has hitherto been unthinkable: how to function in a way that is consistent with the new world picture. In this challenging context, old certainties will be turned on their head, old principles abandoned and old priorities changed. Out of this process can emerge a different ethical foundation for commercial activity based on low impact, long-term use and sustained yield. Perhaps the most useful single source is Paul Hawken et al.'s book *Natural Capitalism*. This book outlines the essentials of 'a restorative economy'. They describe many practical initiatives in business and industry. Their interest is in how business is rethinking its processes in line with a growing sense of limits that in an earlier generation had been invisible. Hawken and his colleagues argue that capitalism as practiced to date has ignored its foundations: the natural and human systems that sustain it. In short,

> Capitalism, as practiced, is a financially profitable, nonsustainable aberration in human development. What might be called 'industrial capitalism' does not fully conform to its own accounting principles. It liquidates its capital and calls it income. It neglects to assign and value to the largest stocks of capital it

employs – the natural resources and living systems, as well as the social and cultural systems that are the basis of human capital.[22]

The upshot is that there is now a growing awareness that there is more than one bottom line. Triple Bottom Line (http://www.ilo.org/dyn/idea/ideasheet.display?p_idea_id=25) is one response worth examining as is the mounting pressure from both within and out side the corporate world to take responsibility for their actions and to engage effectively and in a balanced way with the financial, natural and human realities of this planet.

1. Have students study either chapter 1 of *Natural Capitalism* or the author's web site at http://www.natcap.org/defaultHTM.php and make a personal assessment of its recommendations. Have them interview a business person about their conclusions.

2. What strategies might realistically be used to constrain commerce and alter its key values? Draw on examples of successful past interventions to explore this question. What worked and what didn't?

3. Have students visit the Ideas Bank website listed above and think through the concept of the triple bottom line. What are its main features?

4. Show students figure 5.1. How is accounting different when we redefine 'capital'?

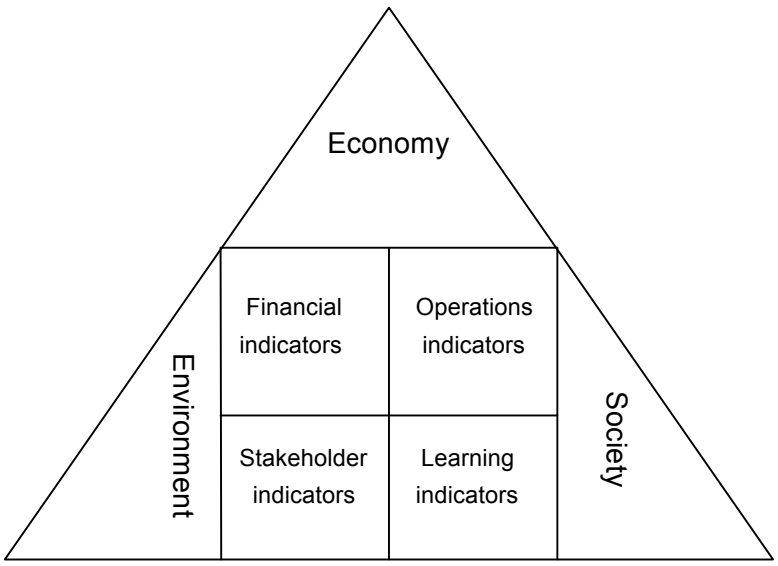


Figure 5.1 Redefining economics

5. Have students examine a number of familiar advertisements and either construct 'anti-ads' or modify their content to comment upon the originals.

6. Have students take sustainability personally. The following site measures an individual's environmental foot print: http://www.ecofoot.org/

7. Have students read Sohail Inayatullah's proposal of a quadruple bottom line. This is available from his website, http://www.metafuture.org/ and bears that name. Ask them if they think spirituality has anything to do with economics and capitalism?

Reflection 8

5.5 Dimensions of sustainability

Sustainable human action needs to be reconceptualised if our culture is to engage in building futures for coming generations that we can be proud of. These futures need to acknowledge the layered nature of sustainability itself if they are to fully meet the needs of our descendants.

When we layer sustainability we find that it effectively merges the four quadrants of human consciousness. The following is a summary of layered sustainability.

Physical sustainability: treats the phenomenal world and all who inhabit it as requiring basic needs to be met. Seen as an integrated system the material world requires human beings who have now emerged as a threat to material balance to adopt a custodial ethic and begin to repair and maintain natural balances.

Intellectual sustainability: treats ideas as an important part of human health. To accept a lie or misinformation uncritically is bad for our metal health as inaccuracies lead to a decline in our ability to reason clearly and make informed and benevolent decisions. The ecology of mind must be cared for and strengthened through developing a range of critical literacies, many of which are directly developed in the futures field.

Ethical sustainability: treats ethics as an integral part of human psychic health. To accept unethical propositions and apply them to our lives damages our ability to respond ethically to the world metaproblem. This in turn damages the survival chances not only of our own species but of the entire planetary system.

Emotional sustainability: treats human emotions as an integral part of health. An impoverished emotional world, held captive in flatland experience is a chief source of many disorders in the physical and intellectual world today. Ethics too is damaged when emotional responses fail to engage with the damage our world is receiving at our collective hands.

Spiritual sustainability: treats the inner world of spirit as a vital source of hope and renewal. Dogma and narrow ideology can damage this domain and make effective action and engagement with the metaproblem partial or inappropriate. This domain is a source of the higher order integrative processes that are essential to actively create a wisdom culture.

All these areas need to be engaged in order to build a strong foundation for the future. This realisation is at the heart of bell hooks' assertion that: 'teachers must be actively committed to a process of self-actualisation that promotes their own well-being if they are to teach in a manner that empowers students'.

The old 'logics' do not support life on this planet any longer. Sustainability is an imperative not a luxury. It is not even a choice anymore. Just as we need to rethink economics we also need to rethink broader social actions and be aware of the impact of our culture on other places and generations. Sustainable thinking is truly holistic thinking. It complements futures thinking and adds weight to the case for futures studies and futures processes in all walks of life.

1. Have students discuss the dimensions of sustainability and list things in their life that are sustainable and things they need to 'work on'.

2. Some students may have trouble with the idea of 'spirituality'. Have an open discussion about this term. Be clear to distinguish it from 'religious' thinking which is institutional. In what ways might an atheist be 'spiritual'?

3. Have students compare this list with the figure on the hierarchy of knowledge. In what ways might a sustainable culture be a wisdom culture?

5.6 Waging peace

Two trends in warfare are clearly visible in the past century. The first is the steady growth of guerrilla warfare since World War II. This has thrived with improvements in transport and communication, and is reinforced by the anonymity of modern life. The second is the decline of large scale international wars and the rise of wars within countries. Both trends mean that a large proportion of conventional military expenditures is wasted. However, official thinking is so entrenched that alternative strategies have hardly been tried. Yet many such strategies do exist.

According to Keith Suter, there are at least five ways of waging peace in the twenty-first century. First, war is not a biological necessity. Research shows that it is learned, and can therefore be unlearned. In other words, there is nothing inevitable about war. Second, peace is much more than the mere absence of war. It is founded on three key considerations: disarmament, respect for social justice and alternative ways of settling disputes. The latter includes: diplomacy, arbitration and mediation work. Third, it is vital to re-define what is meant by 'national security'. This is not simply a military issue. It also has a social justice aspect and an environmental health one. Conflicts such as the Iraq War are not only human and cultural disasters; they are environmental ones also.

Fourth, much has been written about the 'military-industrial complex', the close connections between governments, research agencies, arms manufacturers and dealers, particularly in the USA. Indeed, it is well known that a very high proportion of the world's scientists work for military purposes. The costs of this diversion of human talent, ingenuity, money and technology are staggering. It has been shown that a small proportion of the global military budget would be sufficient to resolve many pressing global issues (see figure 5.2). Hence there is a need to create what Suter calls a 'peace-industrial complex'. That is, an alliance between peace and environmental groups, trades unions and small businesses. Their work would be to engage in the fifth strategy: conversion. This is the substitution of peace work for war work. It may include the design and manufacture of low-cost solar heating systems, the development of environmentally-benign cars and low energy urban transport systems, the safe disposal of nuclear waste, effective ways of restoring damaged land, the design and use of appropriate technologies in rich and poor countries alike. Finally, alternatives to unemployment are needed, particularly for workers displaced from weapons-making industry.

What these suggestions run up against, of course, is industrial era values and psychology. However, this does not mean that the attempt to 'wage peace' is unsound. Rather, it is another dimension of the struggle to overturn (or 'de-legitimise') aspects of our cultural baggage that have become too dangerous or costly in the context of the twenty-first century. There is no place for war in a sustainable society. So we will literally have to 'un-invent' the war industry and draw deeply on our imagination and will in creating its successor. Here are some suggestions for further work.

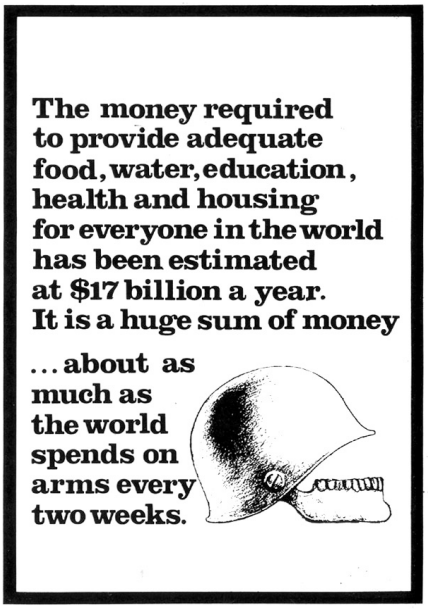


Figure 5.2 Things in perspective

1. Have students debate the proposition that 'since war is not innate, but learned, it can be unlearned'.

2. Have students research the topics of diplomacy, arbitration and mediation. When and where have these been successful? How might they be applied more widely?

3. Governments and the media have largely ignored the conversion issue. Why is this and what might be done about it? How could unemployment problems be tackled?

4. Have students carefully examine figure 5.3. The figure shows annual costs of various global programmes for solving the major human need and environmental problems facing humanity. Each programme is the amount needed to accomplish the goal for all in need in the world. Their combined total cost is about 25% of the world's total annual military expenditure.[33] Each square = US$1 billion. If approximately one quarter of global military expenditures would help to solve chronic global problems, how is it that the human race has not done so before? What is stopping the process of restoration from taking place?

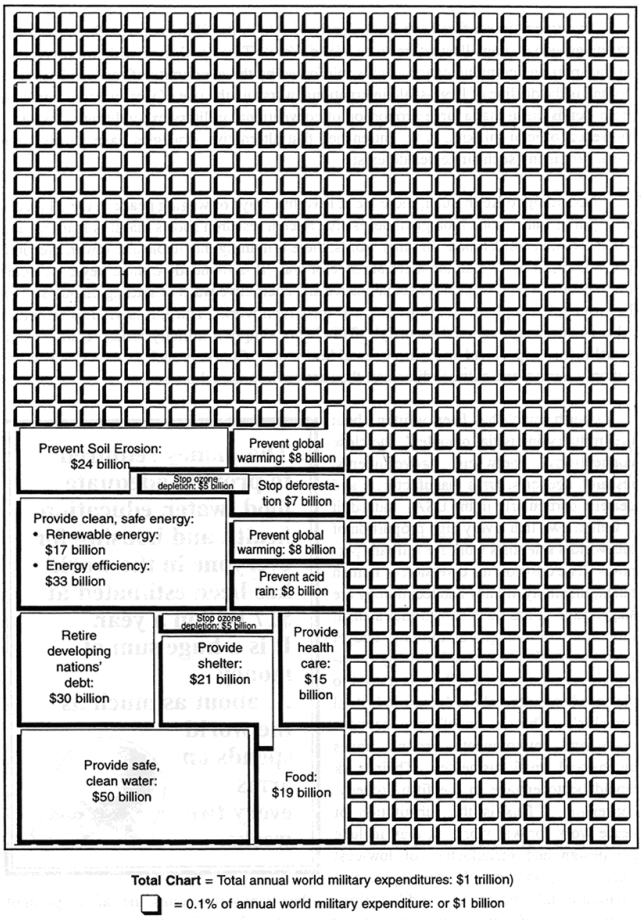


Figure 5.3 What the world wants

5.7 From jungle to vision and beyond

Sohail Inayatullah frequently introduces CEOs and others exploring futures techniques to futures studies via the analogy of moving from the jungle to a point of collective vision. The process is simple but effective.

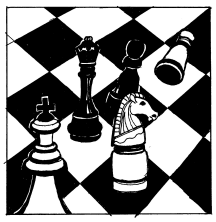
Figure 5.4 shows four possible ways of situating ourselves in the present. The first way, familiar to most of us, is that the present is like being in a jungle, we struggle from day to day, drama to drama with no clear sense of direction or purpose other than staying alive. In the second situation, the individual is making plans. This is a strategic place and the illusion is that everything is now under control. The third place has the individual up high looking out over the wild world. This is the place of vision, but it is lonely. Finally, there is the individual with others walking towards a destination they have chosen together. This is the place of collective dreams and action. This last place is the place from which sustainable futures emerge.

Level One—Life in the jungle

Knee jerk reactions
No Vision
Live day to day
Survival

Level Two—Life as a strategist

Plan and implement Change
Short term goals
Authoritarian
Problems seen as structural
Solutions seen as structural
We need a battle plan



Level Three—Life as a visionary

Lonely at the top
The Leader Leads
Long Term Goals - tomorrow
Sense of hope and purpose
Sensitive listening but leader focused
Passive: Follow the leader
Energy comes from above

Level Four—Life as co-creators

Participatory
Purposeful and Hopeful
Cultural Grieving
Cultural Creatives
Energy comes from below
Long term rooted in the present

We are the Future!

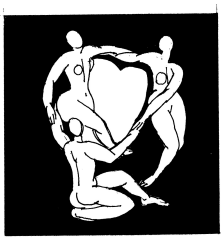


Figure 5.4 From jungle to vision

1. Show the students the images at first without text and ask them to interpret them. Then introduce them to the ethos of the worldview. This essentially is the day-to-day 'narrative' that drives and sustains the approach to life. Ask them to reflect on how each makes them feel. Where would the stresses lie?

2. Tell them about each image. Where do they see themselves?

3. Dramatise these images and perform them to another class. Interview this class and ask about their reactions to the play. Do they share a similar interpretation?

4. Students create their own artistic interpretations of these four stages.

5.8 What can we know about the next twenty years?

Knowledge of the future is problematic and its status is uncertain. But that does not mean that the future is a blank space or a vacuum. On the contrary. A clear view of aspects of past and present, coupled with a range of futures concepts and methods, means that we can understand many of the forces that will shape the next twenty years and, indeed, the next century. We cannot know either in a hard, empirical sense, but *a coherent structural analysis* based on interpretative knowledge is achievable and useful.[23] The following points provide a summary.

A structural overview of the early twenty-first century

- What are the main continuities?
- What are the major trends?
- What are the most important change processes?
- What are the most serious problems?
- What are the new factors 'in the pipeline'?
- What are the main sources of inspiration and hope?

As discussed above, future events cannot be predicted because prediction in social systems is a logical impossibility. (Accurate prediction would cancel out the grounds of action, decision and human agency itself.) But there are ways of reading the global context that enable us to create a coherent view of the terrain ahead. Collectively we already know a great deal about *continuities* of, for example, language, culture, tradition, the environment and so on. Equally, we know a great deal about *trends and processes of change*. Futures researchers listen very carefully to those who study trends and change processes and use the knowledge so gained to constantly up-date their understanding. This provides an empirical basis for futures speculation. We can review the nature of *global systemic problems* and outline many *new factors* and forces that will come into play during this time. However, as the poet William Blake knew so well, 'reason alone leads to despair', so it is also necessary to identify *sources of inspiration and hope*. The careful use of this framework provides an evolving view of 'the big picture', i.e. the evolution of the global system. So, using all the tools and capacities available, it is well within our grasp and capacity to outline aspects of the next two decades. From our present vantage point in time we can sketch in what appear to be major structural features of the near-term future landscape without predicting every twist and turn of the journey.

The 'map of the future' is a metaphor that describes what the futures field as a whole tries to do. Essentially, it attempts to provide policy-makers and others with views, images, alternatives etc. about futures in order to inform the present. So the underlying purpose is not predictive. It is rather that of gaining an overview of the context and using this to illuminate alternatives. Hence, we recall, the loop of futures-scanning always returns to the present in the form of choices, actions, policies and the like. Obviously, and as noted, this map, or broad-brush picture, is never complete, never finished. It is continually up-dated as events, new information and data feed new insights. So to describe this future context is not primarily a matter of forecasts and predictions. Rather, it is *an interpretative process* that grows out of futures thinking and is comprised of stages that include: environmental scanning, detection of 'signals', interpretation, decision-making, implementation and evaluation. This corresponds to the general pattern of strategic planning; but it is also a challenging scholarly task. However, the future (as a category) is not merely the province of planners and academics; it concerns everyone.

1. Have students discuss the 'structural overview' presented above and develop a series of answers to each question. They will need some direction but can get a lot of information from the print media and intelligent news analysis, techno-commentary and SF movies.

2. Have them apply futures thinking to a major problem they identify. What map do they generate? What are positive ways to deal with this issue?

5.9 An agenda for our century

A global agenda is needed because intentional change takes time. It must be organised. The necessary resources must be found and deployed. Structures need to be created. Enterprises need time to develop and grow. Yet, looking at the complexity of the world and the nature of deeply embedded dilemmas, one can easily feel overwhelmed. So, again, it is helpful to identify some broad, clear headings around which we can organise some coherent responses. The following list provides a summary.

An agenda for the our century

- Repairing the damage
- Creating sustainable economies
- Releasing the potential within people
- Creating institutions and processes of foresight
- Finding new purposes and meanings
- Re-inventing culture via. a renewed worldview

1. Repairing the damage

Given the enormous costs that the industrial system has exacted upon the world, repairing the damage has become a major imperative. There are very many areas and ecosystems that have been completely destroyed. Others have been severely compromised; entire species of plants and animals have been lost. This dynamic of destruction must be replaced with a new dynamic of restoration. Hence there is scope

for a series of new professions to develop from the confluence of ecological science and environmental activism.

Over coming decades we would expect to see new communities devoted to ecological reconstruction springing up in formerly devastated areas around the world. Such communities may need to be government funded. They will not be like the communes of the 1960s and 1970s — simple refuges from urban society. They will contain people with a commitment to healing the earth and the means to do it. Taken together, these communities could become a powerful and constructive cultural force.

2. Creating sustainable economies

This will be harder, but it is also inevitable because a non-sustainable economy is just that. However, there are so many contradictions to resolve (such as advertising and consumerism) that it will not be easy to re-direct economies addicted to earlier modes of growth.

Growth will need to be re-defined. Resources will need to be re-valued. The environment will need to be brought fully into all economic calculations (instead of being dismissed as an 'externality'). At a deeper level, the ideologies and power systems which drive the technocratic machine will have to be challenged and replaced. Similarly, the time-frames that are applied to human economic life will need to be re-assessed. Most importantly, it will be necessary to escape from the chronic short-termism now common in business, government, industry and education. All of these shifts are facilitated by:

- Hawken's concepts of 'the restorative economy' and 'natural capital', both of which turn existing economic wisdom on its head;
- The ideas contained in triple bottom line economics that value economic, social and environmental domains and have developed effective indicators to measure activity by business.

3. Releasing the potential within people

Some see this as the key to cultural renewal. For all persons have within them enormous capacities and powers which are hardly engaged in everyday life. Those who are able to locate their potential and to develop it have the ability to become constructive agents of change. The whole history of citizen action movements, of innovators and social activists tells us that people can indeed be very powerful. When linked with the right ideas and proposals this force is irresistible (see section 3.18).

4. Creating institutions and processes of foresight

Foresight is an essential capacity to deploy at the social level and in the public interest. It is not just a personal capacity. It needs to be implemented in very many locations and linked with public policy formulation and decision-making at all levels.

Enough examples exist from around the world to show how to implement foresight. These examples can be utilised to draw on the best work available. But since it will take time to create the institutional structures and to train the people who will carry it out, the job should be started without delay.

5. Finding new purposes and meanings

This is, in some respects, the culmination of critical futures work. It begins with the critique of what is wrong, redundant, no longer helpful in contemporary cultures. It proceeds to develop alternative ways of knowing and being. These alternatives thrive upon new purposes and meanings, examples of which have been given above.

The purposes and meanings that powered the social system over some two hundred years have created a world of contradictions. The process of selecting new purposes and meanings will not be an easy one since powerful groups always have interests bound up in the way things were. Yet the de-legitimisation of redundant social principles and practices is overdue.

The process of legitimating and implementing more constructive alternatives will be the major task of this century.

6. Reinventing culture through a renewed worldview

The way we see the world dictates the way we use it. So the commitments embedded in the foundations of industrial culture need to be examined and, where necessary, transformed or discarded. A renewed worldview will retain much that is good and useful from earlier times. It will retain notions of justice, equity and so on. But it will also include other elements such as sustainability, stewardship and a global, long-term view.

We have suggested that such a culture can arise from the inner dynamic of higher-order human capacities, founded on foresight and wisdom. But the fact is that no one really knows. The culture that follows on from industrialism cannot be specified fully in advance.

What is certain is that if the human race is to survive in a world worth living in, a world rich in other life forms, rich in resources, rich in human and non-human options, then it will be with a culture based on assumptions very different than those now operating.

1. Have students discuss these points and suggest one thing they might do in each category to promote this agenda?

2. Have them compare their ideas and see if others think as they do.

3. Creating an institution of foresight may seem impractical for a student but remind them their school could be such a thing. So can their home. How could they move the school in the direction of institutional foresight? Perhaps this needs to be a whole class project.

Reflection 9

5.10 Two deep futures tools

Futures thinking needs deep roots to effectively grapple with the problems facing humanity. Deep thinking, however, does not just happen, it needs to be constructed, mapped, supported so that we develop the skills necessary to engage with the psychic structures that constrain human vision and agency.

As mentioned in section 2.2, Wilber's division of reality into four quadrants (4QM) offers a map of reality that enables clear and insightful futures thinking that incorporates both the inner and outer divides and the personal and social contexts of experience. This provides us with a deep futures tool of elegance and vision. It offers an 'integral agenda' for futures thinking.

Sohail Inayatullah has developed causal layered analysis (CLA) as a tool for mapping layered reality via patterns of knowledge. CLA divides reality into different ways of knowing that, superficially, shares some similarities with the four quadrant model. CLA is, however, less concerned with inner-outer divisions than it is with the epistemological structures that underpin human action.

Futures thinking requires that attention is given both to the domains of human perception and to the interpretive structures that shape awareness. These are new tools that require the user to experience them — not just know them in a shallow, intellectual sense. The following two sections are offered not as authoritative statements on these processes but as invitations to the reader to find out more. Readings will be suggested at the end of each to help the interested reader in their research.

5.11 The integral agenda

Wilber's 4QM grows out of a much deeper and more sophisticated meditation on human nature and reality. Essentially he describes human consciousness as a layered schema of realities each a discrete whole (holon) that nests within ever more complex and aware realities or holons. Each layer or holon is a precondition for the next and no layer can be skipped as consciousness moves through them. This understanding itself is a powerful futures tool, but here we focus on the model.

This method maps out an integral agenda of profound significance to futures studies — one that requires futures thinkers and practitioners to balance vision with grounded reality. The integral agenda has two main goals. The first of these is to provide encouragement and support to individuals, groups and societies seeking a more integral outlook at every level. Wilber puts it this way:

> because the health of the entire spectrum of consciousness is paramount, and not any particular level, this means a genuinely universal integralism would measure more carefully its actual impact. I have long maintained that the real revolutions facing today's world involve, not a glorious collective move into transpersonal domains, but the simple, fundamental changes that can be brought to the magic, mythic and rational waves of existence… The major problem remains: not, how can we get everybody to the integral wave or higher, but how can we arrange *the health of the overall spiral,* as billions of humans continue to pass through it, from one end to the other, year in and year out? (Emphasis in the original)[24]

The second goal of the 'integral agenda' is to explore pathways towards a culture characterised by depth (inclusion of, and care for, all developmental levels) and balance (across all four quadrants). This leads to the notion of 'integral transformative practice'. For Wilber the basic idea is simple: 'the more dimensions of our being that we simultaneously exercise, the more likely transformation will occur'. Yet arguably the practice is not quite so simple: 'in short, integral transformative practice attempts to exercise all the basic waves of human beings – physical, emotional, mental, spiritual – in self, culture and nature'.[25]

In the four quadrant method described earlier we are offered a meta-perspective that allows us to see things together that have often been seen in isolation. In so doing, it provides a view of one of the central dilemmas facing humanity. From this view point, the concern is not so much with a part of the whole but of unsustainable and uneven relationships between different domains. The implications are profound.

Consider the lower right (LR) quadrant (representing the collective external world). Developments occur here very rapidly, in part because each successive technology builds upon the 'platform' provided by its predecessors. Moreover, this dynamic is currently being driven by the most powerful organisations in the world. There is no end in sight to the process of compulsive, competitive innovation. Yet if we switch our focus to the upper left (UL) quadrant (representing the inner worlds of human beings) the dynamic is quite different. Here each child recapitulates the same developmental stages as its ancestors, every time, without exception. Overall 'progress' (towards some advanced levels of capacity and functioning) both here and in the lower left (LL) quadrant, is much slower, more problematic. One very serious

consequence is that our newly acquired, God-like powers are currently mediated by personality structures and social forms that are clearly inadequate to the task. Therefore, it is difficult to avoid the conclusion that the most likely futures for humanity and the world are those where the species is overwhelmed by the products of instrumental reason.

Here, then, is the rub. Can we, under any circumstances, imagine a world in which integral development had proceeded to the point where no individuals or groups possessed the will or the means to hold the rest of the world to ransom, or worse? If our collective future rests upon ensuring that each stage of personal and social development is fully integrated, healthy and capable of taking its part in the whole panorama of evolution, then we would have to say that this is highly unlikely at the present rate of progress. Some new force or principle will be needed in history, if history is to proceed beyond the apparent impasse. Who can say if that will emerge through futures thinking, through the 'integral agenda', or some other, currently unregarded source.

In this light the most advanced forms of futures enquiry should be focussed not just on avoiding dystopia, but in helping to understand and explore the structural underpinnings of the next civilisation.

Recommended reading:
Ken Wilber (2000) *A Theory of Everything*, Shambhala, Colorado.
Richard A Slaughter (2004) *Futures Beyond Dystopia: Creating Social Foresight*, Routledge Falmer, London

5.12 Causal layered analysis (CLA)

The 4QM sets the context for CLA as it has the potential to identify just what those structural underpinnings might look like. CLA is anchored in the post-structural movement (see the futures tool box, section 1.10) and is, in effect, a method of interpreting reality according to the way it is articulated at various levels of awareness.

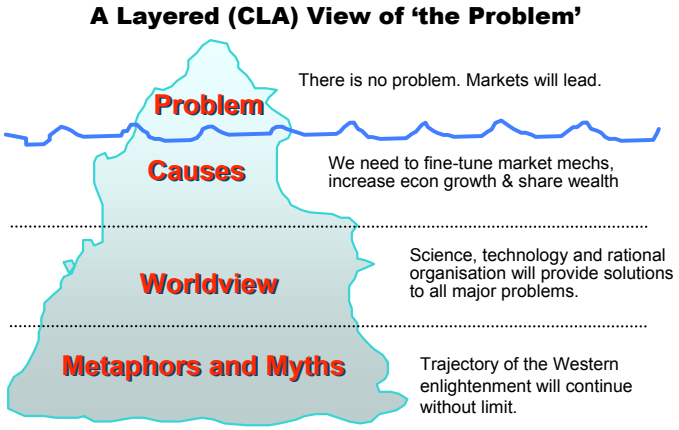


Figure 5.5 CLA as iceberg

Using CLA it is possible to think of social reality as an iceberg, figure 5.5, with the surface that we see representing a very small and limited amount of an extended real. From this perspective the causes of the future are multifaceted and situated in vertical social-textual space. The term 'space' is used here metaphorically to describe both the external space of social reality and the internal space of interpretation and response. The method recognises that this space has a physical dimension – technology, architecture, landscape – but that human consciousness negotiates and interprets this space in different ways and at different more or less conscious levels. There are four levels and has processes of ordering and ways of interpreting the real; each level relates to and defines aspects of the other levels.

Sohail Inayatullah has been central in developing this concept. He suggests that 'causal layered analysis is based on the assumption that the way in which one frames a problem changes the policy solution and the actors responsible for creating transformation'.[26]

The four layers of CLA are:

1. The level of litany. This is the arena of both the physical sciences and also political and journalistic knowledge. It is the social text that Derrida and other post-modern thinkers like to deconstruct. At this level there is no sense of the inter-connectedness of social reality, no awareness of depth. Everything is discontinuous and analysis tends to be ahistorical and atheoretical. It is important to recognise, however, that this is the arena of lived reality and that what happens here to people's bodies and the minds and hearts is real. Pain is real as is excitement and depression. In other words poverty, violence, crime and time also have a physical reality and it is not simply the play of discourse.

2. The level of system. This level concerns social, political, economic and historical causes and processes. This is the main arena of academic knowledge production and much futures work is done here. Analysis can be extensive and enlightening but lacks self-referentiality. Good journalism usually is situated here and there is a sense of relationship between social processes and their antecedents. Knowledge is discursive but does not challenge the fundamental structure of its production.

3. This is the level at which structure and litany is contextualised within discourse and worldview. Here the inquiry focuses on those processes that legitimate and sustain relationships of power and processes of meaning production. Deeper linguistic and social structures are linked to processes of ordering that define the rational and the real. Such processes are actor invariant and rely not on the individual but on systems of ordering that inform both social and individual action. This level generates the tools needed to deconstruct the first and second levels.

4. This is the level of myth and metaphor. Here we find the deep stories and collective archetypes that shape our unconscious and emotional reactions to issues and events like the 11th September attack. This level is less analytic and more emotive and instinctual. Language is less important than image. As this is a mythic space of enquiry the result is often diffuse and inchoate, yet appreciation of this level and anchoring specific worldviews to images of the futures, present and past greatly enriches our understanding of processes of resistance and enables us to locate levers for transformation.

Inayatullah makes two interesting points about CLA as a process of critical engagement. Firstly, he links those responsible for change with different layers of the CLA map.

> [W]ho solves the problem/issue also changes with each level. At the litany level, it is usually others – the government or corporations. At the social level, it is often some partnership between different groups. At the worldview level, it is people or voluntary associations, and at the myth/metaphor it is leaders or artists.[27]

He goes on to insist that CLA is an interpretive schema not a clear structure for categorising problems or ones opponents.

> These four layers are indicative; there is some overlap between the layers. Using CLA *on* CLA we can see how the current litany (of what are the main trends and problems facing the world) in itself is the tip of the iceberg, an expression of a particular worldview. Debating which particular ideas should fit where defeats the purpose of the layers. They are intended to help create new types of thinking not enter into debates on what goes precisely where.[28]

Some of the actors and key perspectives are suggested in figure 5.6.

Level	Problem	Solution	Who can solve it?	Source — Information
Litany Official public discourse	Problem seems difficult to solve or easy to solve as depth is not seen	Short term approaches	Government	Television Newspaper
Systemic, Social Science analysis Society, Technology, Economy, Environment and Politics (STEEP)	Problem exists because of short term historical factors	Integrated approaches — systemic solutions	Partnerships between different sectors of society — government plus business plus civil society plus individuals	Policy journals, editorials
Discourse Worldview — Paradigm	Constituted by frame of analysis — deep structure	Transform consciousness, change worldview, rethink self and other	Writers, philosophers, those outside the dominant discourse	Peripheral journals, ideological journals, philosophy courses
Myth and Metaphor	Constituted by core myth, often derived from a traumatic or transcendent event	Uncover myth and metaphors and create processes to imagine alternative stories of what it means to be. Cannot be rationally designed. Emergence is necessary.	Collective unconscious often guided by visionary, mystic, leader.	Works of artists, visionaries, mystics, and certain movies

Figure 5.6 The causal layered analysis framework

CLA allows us to begin thinking about how our subjective awareness interrelates with broad structures that determine reality. It also makes clear the way these structures

are open to negotiation and contestation. In this way we begin to get a sense for the deeper defining forces that build the social world we inhabit. This deepening is central to futures thinking. CLA, unlike 4QM, is simply a tool of analysis. It does not offer a broad synthetic map of reality. What it does do is more specific, it maps how we know reality and allows for that knowing to be individually as well as socially constructed. In this way it also acknowledges the inner and out dimension of the real, but it seeks to understand it as a source of life and cultural narrative.[29]

It is often easier to understand CLA when it is seen in action. Here in figure 5.7 we take four different images of the school of the future and look at how these images are supported by different assumptions about what is 'real'.

Causal Layered Analysis				
	Fear and Intensification	Multi-Cultural School	Virtual School	Eco-School
Litany	Schooling is out of control	New 3Rs, children as global citizens, citizen empowerment, life is too complex	World is full of winners and losers, technology is our friend, if only everyone would use the Internet (losers aren't on line)	Learning and living go hand in hand, human landscape an extension of the Natural, be happy plant a tree
Systems perspective	Increase levels of surveillance, more testing, computers	Tend toward centralised management, but more flexibility and effective size, smart-schools in the market place selling learning product	Business and government mediate virtual world, flexibility and speed, information at everyone's fingertips, teachers as technicians, students as consumers	Decentralised, local communities define nature of learning, Natural capitalism[i] provides organizational topography
World view	Effective managerial controls will enable schools to function at optimum, all problems can be solved	Plurality and Tolerance, complexity	Individual chooses destiny	Unity amidst diversity
Myth/metaphor	Schools are knowledge factories	Global Village	Global Brain	GAIA: Eden returns as eco-commons

Figure 5.7: CLA of future schools

Like the 4QM this is an area of futures thinking that takes time to appreciate. The key is to understand the kinds of questions that need to be asked in order to engage with the different levels.

1. Have students work with the layers looking at a key issue in their lives. Ask:

How is this issue depicted in the media?

What forces in society seem to be creating this issue?

What values underpin the way this issue is framed?

What stories can we think of that frame this issue?

2. Look through the CLA of schooling given in figure 5.7 ask students which images they think of as the most likely in the present context. Then ask them to think about which are the most attractive images and how we might get there.

5.13 Building social foresight

This text has presented a number of the central tools and concepts of critical futures studies in order to facilitate the emergence of the futures literacies required to develop social foresight. We take the view that the latter can be progressively enabled through five distinct layers, or levels of development. The first is grounded in the natural capacities of the human brain/mind system to comprehend a range of futures. The second focuses on the clarifying, enlivening and motivating role of critical futures concepts and ideas. Third are a number of analytic gains provided by futures tools and methods. Fourth, we turn to a range of practical applications, or contexts. The hypothesis is that when each of these levels functions in a coordinated way, grounds for the emergence of social foresight can clearly be seen. Hence the fifth stage involves the full implementation of social foresight. These stages are summarised in figure 5.8.

Stages			**Indicators**
	← A futures-responsive culture →		
Level 5:		Social capacity for foresight as an emergent property	Long-term thinking becomes a social norm
Level 4:		Futures processes, projects & structures embodied in variety of applications	Foresight routinely applied in most organisations
Level 3:		Futures tools & methodologies increase analytic power	Widespread use of standard fs tools & methods
Level 2:	Futures concepts & ideas enable a futures discourse		Futures concepts & ideas become influential via discourse
Level 1:	Raw capacities & perceptions of the human brain-mind system		Unreflective use of forward thinking in daily life of individual
	← A past-driven culture →		

Figure 5.8 Stages in developing social foresight

This figure illustrates the way that social foresight is progressively enabled stage-by-stage from a raw, underutilised, potential to an applied social resource. At stage 1, futures thinking is informal at best, and the future seems to be an 'empty space'. However, concepts, methods and applications augment these capacities. The future then begins to emerge as an active social category brimming with social implications.

We would argue that aspects, or traces, of the future do in fact already exist enfolded in the present all the time. From an integral perspective they are not 'out there' in some remote place but, rather, in some senses, 'in here' within the deepest recesses of 'now'. In the right hand (RH) quadrants they provide the physical substrate – from atoms to DNA – from which future physical realities will arise. In the left hand quadrants (LH) traces of as yet unformed futures exist as will, vision and potential (upper left: UL); also by shared structures of meaning via culture, language and shared socially validated ends (lower left: LL). Signals of change – forerunners of the future – constantly arise in each of these domains. Hence an integral approach to futures studies will embrace insights from across the entire interwoven field of human knowledge.

The fabric of social foresight is a detailed weaving of the various strands of human agency. Critical futurists need to develop an integral awareness of layered reality for personal capacity building and social empowerment. They therefore require a thorough appreciation of the areas mapped in figure 5.9 as a foundation for engagement with what Wilber describes as the 'integral operating system'.

	Interior/Individual	Interior/Collective	Exterior/Individual	Exterior/Collective
Tense	I	We	It	Its
Focus	Self & Consciousness	Culture & Worldview	Brain & Organism	Social & Environment
Mode	Intentional	Cultural	Behavioural	Social
Ref	UL (upper left)	LL (Lower left)	UR (Upper right)	LR (Lower right)

Figure 5.9 Layered reality

The most broadly useful futures concepts are those that have a certain 'amplitude'; that is, they can be approached and understood on a variety of levels. They can therefore be introduced to young children as well as adults. For example, the notion of foresight may present some difficulties at first. But by carefully observing its use in everyday life (stage one in this figure) as in walking, driving, sailing, etc., it can be clearly understood at the level of concrete lived experience. This level is the raw material of social foresight.

When people use futures-related concepts in a sustained way (stages two and three) and in combination with others, as well as with the other resources available elsewhere a distinctly futures-oriented quality of understanding emerges. It is this that leads to 'futures' or 'foresight literacy'. The latter, rather than the pursuit of one or another particular scenario or preferred future, can be regarded as a central goal and purpose for futures educators. Thus futures concepts enable a futures discourse. This is an interior facility and is not in itself linked to tools and techniques. It is within the

interior, LH domain that the symbolic foundations, the wherewithal, for an applied futures perspective emerges.

Social foresight begins to emerge when we use futures tools within the context of method. Methods are action oriented but rooted in our interior value structures, our synthetic goals and our engagement with culture and consciousness. Figure 5.10 lists some of the best futures tools and divides them into right hand and left hand quadrant orientation. Futures work, to be effective, needs both RH and LH. Figure 5.11 then lists futures methods along the same axis.

Left-hand quadrant tools	Right-hand quadrant tools
Brainstorming	The loop of futures scanning
Critique of images of the future	Cross impact matrices
Dealing with young people's fears	Simple scenarios
Exploring the extended present	Simple technology assessment
Futures wheels	Trend analysis
Imaging workshops	Time capsules
Questions about futures	Assessing global 'health'
Social innovations	
Time lines	
Values clarification	

Figure 5.10 Futures tools

Left-hand quadrant methods	Right-hand quadrant methods
Anthropological futures studies	Backcasting
Causal layered analysis	Cross-impact matrices
Critical futures studies	Environmental scanning
Metascanning	Forecasting
Social innovations	Scenario building
The T cycle	Strategic management
	Trend analysis

Figure 5.11 Futures methods

Social foresight is operationalised futures work. It is one thing to be able to articulate issues and problems and to enter into productive futures-related discourses with other similarly equipped people. But it is quite another to operationalise the insights so gained. The reason is that discourse alone is not action-oriented and cannot deal adequately with many broader or more complex futures concerns. For example, take

the practical need to assess if a power station or a new major road is, or is not, necessary. To make sound decisions depends not merely on ideas or discourse, but also on the extended treatment of complex sets of data. This is where conceptual and literature-based approaches clearly reach their limits – they cannot handle such data. Nor can they adjudicate certain types of problems. But futures methodologies can. That is essentially why they have been developed, critiqued, improved and implemented over time. Figure 5.11 lists some of the methods that help to carry a range of futures concerns into action.

The fourth stage takes concepts, ideas, tools and methods and places them in a functioning context, an environment of consistent application. Such an environment is essential because on their own they are limited in scope and vision, being applied in an *ad hoc* way when the need arose. This episodic uncritical use would certainly not of itself facilitate social foresight, which would remain embedded in the tools and methods and be present only in potential.

Figure 5.12 lists some specific futures applications. These are of three kinds, conceptual orientations, issues based futures work and futures institutions.

Conceptual orientation	Issues based futures	Institutional futures
Critical futures study	Youth futures	Futures research institutions
Strategic futures	Future generations studies	Institutions of foresight
	Peace futures	University futures departments
	Feminist futures	
	Futures in education	

Figure 5.12 Futures applications

Futures work still tends to fall within the range of stages two and three and there is little evidence yet that it has been embraced coherently. Yet, as the practicality and applicability of futures studies becomes more widely known, this will change. To build social foresight involves working at all stages and acknowledging the multiple levels of engagement that this requires. The situation is dire but far from hopeless. We have, as individuals and a society, all the capacities needed to activate social foresight. The latter, in turn, provides the means to creatively and effectively turn our over extended civilisation away from the abyss it currently faces.

Conclusion

The purpose of this book has been to introduce teachers and students to futures studies and applied foresight. We have sought to do this by introducing concepts and tools that are representative of the field and also applicable to the classroom. Futures thinking represents a set of literacies and practices that we see as fundamental characteristics of sustainable living. It is at the heart of social foresight and has the potential to generate a wide range of social and personal responses to the current dilemma of industrial modernity.

Futures thinking can be used in instrumental ways to create selfish, self-defeating, futures. This is clearly not the kind of thinking advocated here. We look for a deep and insightful approach to cultural renewal founded in an integral agenda. Hope goes hand in hand with vision and humans are both inherently hopeful and innately visionary. It is with this hope that we conclude this book with the words of Mahatma Gandhi:

Be the change you want to see in the world!

Endnotes

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29. For more details of the method see S. Inayatullah (ed.), (2004), *The Causal Layered Analysis (CLA) Reader: Theory and Case Studies of an Integrative and Transformative Methodology*, Taipei, Taiwan, Tamkang University Press.

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Figures in this book have been drawn from a number of writers and other sources. Their generosity is acknowledged here.

H. Bree: Figure 4.29 I'd like to be…

Paul Brown: Figure 4.30 Monumental nuclear gift

Alison Bussey: Figure 4.28 Progress at a snail's pace

Killian Bussey: Figure 3.3 Time-line of alternative futures

Marjorie Bussey: Figure 5.4 From Jungle to Vision; Marjorie Bussey also provided images for for Dice, River and Ocean in figure 3.1

Victor Bussey: Figure 2.10 Techno-Future, Figure 2.8 Utopia, Figure 2.9 Dystopia, and Figure 3.1 Metaphors for the future; Victor Bussey also provided the Rollercoaster image in figure 3.1

Campaign Against Arms Trade: Figure 5.2 Things in perspective

T. Chalkly/World Future Society: Figure 4.24 A pilgrim's progress

Louise Donges: Figure 4.11 Threatening future, and Figure 4.10 Positive future

Noel Gough: Figure 4.32 Inventing the Future

David Hicks: Figure 1.4 Utopia: Cover piece for William Morris' *News from Nowhere*, Figure 1.5 William Morris and Utopia, Figure 2.4 Time and Space, Figure 2.16 Changing World Views, Figure 4.8 a & b Key elements for responsible Global Citizenship, Figure 4.15 A Consequence wheel, Figure 4.16 Pressure groups in society, Figure 4.17 Nine diamond ranking cards, and Figure 4.18 Diamond ranking layout

Sohail Inayatullah: Figure 2.19 The futures triangle, Figure 4.7 Knowledge and Ignorance, Figure 5.5 CLA as iceberg, and Figure 5.6 The CLA framework

B. Key and I. James: Figure 2.6 Six ways to survive media manipulation

Brian Loffler and *New Internationalist*: Figure 3.11 Collective action

R. McQuarrie: Figure 4.33 Robot Dreams

Sharyn Madder: Figure 3.12 Loss, Figure 3.14 Dreaming, Figure 3.9 The earth in one year, and Figure 4.14 Dreaming

Richard Mochelle: Figure 1.6 Hindsight visioning, future visioning and the role of Critical Futures Study in developing steering capacity, Figure 2.18 Architectural metaphor the relationship between surface structures and underlying foundations, and Figure 4.34 Future choice predicament map

Graham T. T. Molitor: Figure 4.20 Scenario building 1, Figure 4.21 Scenario building 2, and Figure 4.6 External Environment

NZ Futures Trust: Figure 4.25 Escaping from old ideas, and Figure 4.26 Blocked by adequate patterns

Frank Ryan and Stephen Ray: Figure 3.13 Earth in space

Ken Sprague: Figure 1.7 Collective action

S. Stephens and Ray Barnhardt: Figure 1.10 Ways of knowing

Taisei Corporation: Figure 4.22 Future city

Ron Tandberg: Figure 4.9 Optimism and pessimism

Unknown: Figure 4.23 Mechanical man, and Figure 5.1 Redefining economics

Various sources: Figure 4.27 Future news

Laurie Wheldon: Figure 4.31 Foresight International logo

Ken Wilber: Figure 3.18 Wilber's four-quadrant model, and Figure 2.2 Some details of the four quadrants

World Game Institute: Figure 5.3 What the world wants

The remaining images were developed by Richard Slaughter:

Figure 1.1 Literacy, Strategy and methodologies

Figure 1.2 An integral cycle of knowledge

Figure 1.3 Futures study as an emergent property of the human brain mind system

Figure 1.8 Divergent paths to alternative social futures

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Figure 1.11 Triple Bottom Line

Figure 1.16 Layered knowing (after K Wilber)

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Figure 3.8 Connections between past, present and future

Figure 3.10 Different time-frame for different purposes

Figure 3.15 What can I do?

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Figure 3.19 Aspects of a wise culture (after K. Wilber)

Figure 4.1 How to scan the environment

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Figure 4.3 Delphi Survey

Figure 4.4 Megatrends (after J Naisbitt)

Figure 4.5 Factors involved in identifying a trend

Figure 4.12 Optimistic and pessimistic responses

Figure 4.13 Matrix for moving from fear to empowerment

Figure 4.19 Simple cross impact matrix

Figure 5.8 Stages in Developing Social Foresight

Figure 5.9 Layered reality (after K Wilber)

Figure 5.10 Futures tools

Figure 5.11 Futures methods

Figure 5.12 Futures applications

and by Marcus Bussey:

Figure 2.3 Four-quadrant work sheet (after K Wilber)

Figure 2.11 Mapping reality (after K Wilber)

Figure 2.13 Feedback loop 1

Figure 2.14 Feedback loop 2

Figure 2.15 Simple feedback loop

Figure 2.22 Four strands of futures education

Figure 3.16 Cultural Creatives (after P Ray)

Figure 5.7 A CLA of futures schools

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