

**Futures Thinking for Social Foresight**  
Glossary of Futures Terms\*

## Glossary of Futures Terms\*

### Richard A Slaughter

#### Introduction

During the years in which I taught futures studies courses in universities I realised how the language can seem off-putting to those unfamiliar with it. Terms such as 'problematise', 'metaproblem' and 'selective legitimation' are not in common usage and can hardly be said to roll off the tongue with ease. Yet they do have a significant part to play in supporting an advanced futures discourse.

Some approaches to futures studies take the view that the methodologies are a primary concern. So futures courses based on this view essentially provide an introduction to empirical futures research. I take the view that this is, and will remain, a professionalised activity restricted to a minority of specialists. I am much more interested in seeing the symbolic resources of the field, ie., concepts, metaphors, language and ideas, taken up and used more widely. Hence this Glossary. Its main purpose is to de-mystify some of the esoteric-sounding terms that are used in futures. These terms may sound like jargon at first. However, I find it hard to see how any advanced discourse can take place without a range of specialised terms. So I present the following without apology because I firmly believe that hidden in these words and the ideas that they enable are many of the solutions to pressing global dilemmas.

However, I want to stress that this is a personal, and perhaps idiosyncratic overview of futures terms. Many of the latter are subject to wide interpretation, so my attempts at clarity should be seen as providing numerous starting points for enquiry and understanding. They cannot, in the circumstances, be definitive. This is not a dictionary, nor is it intended to be one. By its nature the glossary is open-ended and continues to evolve (see below). There are no hard and sharp boundaries surrounding futures studies. So I am happy to receive feedback on the following and also to consider suggestions that could be included in future revisions.

#### Up-dates

Periodic up-dates of this Glossary will become available. For the latest, and the accompanying *Annotated Futures Bibliography*, please see the notices on the FI website at: <http://www.foresightinternational.com.au>

Richard A. Slaughter, Foresight International, Brisbane, 2005

#### Agenda for 21st century

A list or account of priority tasks or measures considered to be vital for social or cultural well-being in the 21st century. For example: repairing the damage; creating sustainable economies; releasing the potential within people; creating institutions and processes of foresight; finding new purposes and meanings; and re-inventing culture through a renewed world view. Also see twenty-first century studies.

#### Alternative Futures

Considered by many to be the core concept of futures studies. Suggests that individuals, groups, cultures etc., are not set on a deterministic path to a single unitary future but, by using their powers of foresight and decision-making, can select from a wide range of future trajectories and outcomes.

### Alternative Technology

Non-mainstream technologies associated with social movement in the 60s and 70s, partly inspired by E. F. Schumacher and his book *Small is Beautiful* which sought to develop non-standard solutions to problems in first and third world contexts. Pioneered many technical innovations such as waterless toilets, low-cost solar energy, accessible irrigation and local manufacturing.

### Australian Commission for the Future (CFF)

A government organisation inspired and created by the Hon. Barry Jones in 1985. Intended to create wide public support and participation in deciding future directions. However, in practice, became what Jones himself termed 'a qualified failure'. Produced some useful publications (particularly the journal *21C*), seminars and conferences - most notably the Greenhouse conference which helped make the term 'greenhouse effect' an household word. But never succeeded in grounding its work in a rigorous methodology or in the international futures field. Privatised in 1992. Chairmanship taken over in 1994 by ex-Senator John Button with a pragmatic agenda of trade, the economy, and Australia in Asia. By early 1995 this decade-long, but half-hearted, experiment in social innovation had run out of steam.

### Backcasting

A futures method in which a particular future scenario is identified in some detail. Its origins and lines of development are then carefully traced back into the present. Often contrasted with forecasting.

### Biodiversity

Term indicating the total range of types of living organisms in a particular location or country. Often carries an implicit suggestion that greater biodiversity is good, whereas declining biodiversity indicates a loss of, eg. genetic and other biological resources. Useful concept insofar as it draws attention to ecological health and variability, but its generality limits this usefulness. Hence a term that points toward a major area of concern but which also needs to be supplemented and elaborated by more detailed concepts and data.

### Brainstorming

A method of eliciting ideas without judgment or filtering. Often used in the early stages of futures workshops and in many other contexts. Involves encouraging wild and unconstrained suggestions and listing ideas as they emerge.

### Breakdown and Renewal

'The breakdown' refers to the decline of aspects of Western culture (such as automatic respect for authority or unconditional belief in 'progress') and an often pervasive sense that things have 'gone wrong'. Often implicated in young peoples' attitudes to futures. However, can be balanced by consideration of the processes of cultural innovation and recovery which may precede and assist the emergence of a new cultural synthesis. See cultural evolution and social innovation.

### Carrying Capacity

Core concept associated with sustainability. Refers to the theoretical maximum 'load' that can be carried by an ecosystem before it is damaged. Subject to revision according to many factors including technology, human impacts, scientific insights etc. See overshoot and collapse and ecological load.

### Change Cycle

A model showing how social innovations may go through a four-stage process before being adopted. These are 1. Breakdowns of meaning (problems) ; 2. Reconceptualisations (suggested solutions); 3. Negotiations and conflicts, and 4. Selective legitimation ('winnowing'). The model can be used to investigate social innovations past, present and future. Sometimes called the 'transformative cycle' or 'T-cycle' for short.

### Chaos Theory

Field which emerged from study system dynamics, mathematics (especially fractals) and quantum physics. Suggests that many phenomena are inherently unpredictable. Provides new metaphors for dynamic change, eg. bifurcation. Stresses uncertainty and creative potential in turbulent change. Gives new meaning to the term 'catastrophe' which, in this context, refers to a sudden 'phase change' from one state to another.

### Club of Rome

A prestigious organisation with restricted invitational membership. 'Brain-child' of the late Aurelio Peccei. Focussed on world problems. Coined the term 'global problematique' and later the 'resolutique'. Its most successful product was the Limits to Growth study (1972) which predicted that human civilisation was likely to exceed the carrying capacity of the globe unless urgent measures were taken. Less influential in more recent years, but still active in diplomatic circles and publishing.

### Construction of Meaning

In an earlier, 'naturalistic' view, meanings were taken-for-granted, settled and complete. However a series of discoveries in linguistics, semiotics, etc. and especially the practice of 'deconstruction' showed that meanings are the outcome of social processes. Hence they are largely 'constructed' or made, rather than given. This has tended to overturn the authority of received meaning. But it also liberates people to take a more active and creative role. Of great value in a futures context because emphasises the active potential which is a springboard for social invention. However can easily be over-stated and turned into an ideological attack on all pre-existing structures and meanings. See interpretative perspective. Continuities

Aspects of the cultural and natural environment which change little from era to era. For example: basic human emotions and needs, natural cycles and the underlying laws of physics.

### Council for All Beings

Powerfully evocative process, part ritual, part workshop, in which people take on the identities of animals or landscape features in order to feel and speak from that viewpoint. When well done can lead to pivotal insights about our relationship with nature. Hence used as a strategy of deep ecology. Requires sensitive, expert facilitation.

### Council for Posterity

A product of the Institute for Social Inventions, London. Seeks to promote the cause of future generations by creating publicity, holding events, offering prizes etc. One of a number of social innovations dealing with future generations issues.

### Council for 2020

Workshop technique in which participants imagine that they are living in 2020 and considering the world at that time. They then create individual or composite messages that are 'sent back' to our time. Useful for giving weight to the 'needs' of future generations.

### Critical Futures Study

Approach to futures based on 'probing beneath the surface', ie., looking beyond empirical surfaces to the linguistic, cultural and symbolic dimensions where meanings and assumptions are actively shaped. Hence its use of the 'interpretative perspective'. Suggests that the global problematique cannot be understood or resolved without incisive accounts of these deeper phenomena. Hence 'critical' here does not simply mean 'to criticise', but rather, 'looking more deeply'.

### Critique

Approach to questions of value, meaning etc. that seeks to problematise that which is taken for granted and to search out hidden assumptions etc. Not normally seen as a futures methodology, but considered essential here in revealing bias, commitments, social interests etc., especially those embedded in unreflective futures discourses and large-scale projects of the future. See critical futures study.

### Cross Impact Matrix

A standard futures tool used to assess the collective impacts of a field of trends and events. A list of perhaps ten items is entered vertically and horizontally at the top and left side of a matrix. Each trend or event is then 'impacted' on the others in the corresponding column or row, using a simple scoring system to assess the strength of the interactions. ( Usually +, 0 and -, or +10, 0 and -10.) Items are not impacted on themselves, so a diagonal line of spaces remains unfilled. The field of interactions is assessed by summing the rows. The resulting figures indicate which items are driving forces ('drivers') and which are inhibiting forces ('inhibitors'). In this way the main forces in this environment are identified. The matrix can then be used, eg., in constructing one or more scenarios. These two tools are usefully combined in the Futurescan System.

### Cultural Editing

Term used by Ruth Benedict in *Patterns of Culture* (1935) to describe the process by which a culture selects from the wide range of possible alternatives in any area and therefore uses only a specific part of it. For example, the huge variety of religious, marriage and rites of passage ceremonies. Useful in a futures context partly because it stresses the culturally-relative status of aspects of the Western worldview, which are then subject to critique and revision. Also because it indicates a vast collective resource of possible responses and strategies, many of which may have adaptive value in a truly post-industrial world.

### Cultural Evolution

The view that cultures may develop qualitatively over time. Often applied to possible future stages of social development. Best seen in works such as Duane Elgin's elegant book: *Awakening Earth* (1993).

### Cyberspace

Term coined by sf writer William Gibson to describe the secondary 'virtual' world of data-banks, information systems and associated phenomena. Helped create a new awareness of implications of real-world developments in information technology, computer hacking and early experiments in virtual reality; also a minor 'counter-culture' around these themes.

### Deep Ecology

Perspective developed by Norwegian philosopher Arnie Naess and others. Reverses anthropocentrism (a human-centred view of the world). Deconstructs taken-for-granted views of nature and proposes a much deeper identification with it. Facilitates a shift from use-value to intrinsic value. Reflects view of many native cultures and may prefigure future cultural developments. See council of all beings.

### Delphi Technique

Method invented by Herman Kahn and others to pool expert opinion on a specific topic. Carried out in a series of rounds, each of which is modified by the results of the previous one. Produces a collective view about likely developments. Sometimes criticised for stressing consensus over divergence. But, overall, a very useful futures methodology.

### De-sacralisation

The process undertaken by Western culture - and seen as natural within it - of negating earlier cultural valuations of other species and the environment which served to make them sacred, special and thereby deserving protection. In removing this 'symbolic protection' Western culture was able to deprive natural entities of the status bestowed by intrinsic value and assign them to the lesser realm of use-value, thus turning them into mere resources, suitable for exploitation. Contrasts with re-enchantment.

### Determinism

View that future developments are set or constrained by pre-existing structures and forces. Often applied to technical systems. Stands in opposition to empowerment and the operation of human choice and decision-making. Also see fatalism.

### Discontinuity

An unexpected force, event or change that confounds earlier expectations of smooth continuity. For example, an earthquake, war or currency crisis. Serves to modify the prognostications of trend readers and other empirical futurists.

### Discounting the Future

Temporal chauvinism. The view that the future is unimportant and can be dismissed. In some cases involves applying a discount rate so that further ahead = less valuable, less worthy of attention. An ingrained habit - and defect - within Western culture. See short-term thinking.

### Divergence Mapping

A way of mapping out divergent scenarios or lines of development from common starting points in the present. Suggests that the origins or 'seeds' of many different futures lie dormant (or active) in the present, and that the selective 'nurturing' of these 'seeds' can lead to contrasting outcomes. (Contrast to 'backcasting' where a particular future is envisaged and then traced back into the present.)

### Dynamism

A highly active process involving some or all of: rapid change, high energy, movement and instability.

### Dystopia

The opposite of Utopia. Depicts a decline into a more primitive and violent world. Was popularised in *Brave New World* and 1984. Themes from such works were later taken up and generalised into various media, thereby reinforcing the view of the future as a dark and dangerous place. However, such themes can also be used constructively as warnings of destinations to avoid, or hazards on the future landscape.

### Ecological Load

The demand placed on ecosystems by humans and/or other organisms. Humanly imposed loads have been increasing steadily throughout recent history and now considered by many to have exceeded the long-term carrying capacity of the environment in many areas of the world. See overshoot and collapse.

### Economic Growth

Modern ideology and phenomenon deeply inscribed in economic systems and orthodoxy such that environmental limits are removed or suspended, allowing economies to expand. Seen as an unquestioned 'good' by most governments and conventional economists and as a dangerous fallacy by critics. A multi-faceted debate has spawned various organisational and methodological responses such as TOES (The Other Economic Summit) and new economic indicators.

### Empowerment

The process whereby individuals discover their autonomy and power and become positively able and willing to use it to create, shape, intend, invent and have influence. The opposite to apathy. See social inventions.

### Empowerment Principle

The view that fears and concerns about futures can be resolved by (1) acknowledging the validity of the source of the fear, (2) moving the focus of attention away from the fear to exploring a range of responses, and (3) developing a process to discover and implement high-quality responses.

### Environmentalist

Person who takes the view that special measures are now needed to protect the environment from further despoilation and damage. May well involve some or all of the following: membership of an environmental organisation, participation in demonstrations, protests or direct actions, and a commitment to personal conservation measures. A powerful and growing constituency in most Western nations. See green politics.

### Environmental Scanning

A key futures methodology. Involves a careful and conscious process of (1) creating a 'scanning frame' (or set of clear analytic priorities), (2) a scanning process, (3) a way of communicating important data and (4) evaluating the uses of this intelligence. Vital for enabling the forward view in organisations and institutions. Seen also as an input to strategic planning. But still surprisingly rare. Hence, many phenomena, threats, opportunities, seem to appear abruptly because their precursors (early signals) were ignored or missed. One manifestation of the loop of futures scanning.

### Epistemological Reconstruction

Epistemology is the study of the grounds of knowledge. Hence reconstruction, in this context, refers to the ability to (1) diagnose and critique received meanings, (2) to understand their uses and limitations, and (3) to create new meanings that may be more appropriate to the perceived situation. For example, the decline of the notion of economic growth measured as crude activity (which also involves environmental destruction) and the rise of a notion of qualitative growth (involving substantial improvement). Often used in the context of a post-materialist outlook.

### Equilibrium Models

In a futures context, refers to social or global models that portray societies, systems or the globe in a hypothetical state of equilibrium. More an aid to research and thinking than a practical proposition, though useful in, eg., considering ZPG (zero population growth) and steady-state economies. A tool for considering the dynamics of a transition to sustainability.

### Ethical Dilemmas

Difficult problems of value, meaning, practice that often arise in the context of new technologies such as in-vitro fertilisation, genetic counselling and life-extension techniques. Points up the relatively weak ethical frameworks that confront the continuously-developing power of science and technology. A major social concern with multiple future ramifications.

### Experiential

The process of experiencing concretely and immediately, rather than abstractly and at a distance. Suggests a level of involvement and participation which can only be found in personal experience, rather than in representational media.

### Exponential Growth

Growth that occurs at a constantly increasing rate. Often measured by times taken to achieve successive doublings. Can be modelled in eg., a lily pond system or a test tube to show that late doublings can easily exceed the system's limits. Seen in human population growth and in increasing ecological load.

### Extended Present

A key futures concept in which what is understood as 'the present' is assumed to be a distinct period of time. Partly derives from Elise Boulding's notion of the 'two hundred year present' which stretches 100 years in each 'direction'. This is a concept that can easily be operationalised through exploring the last 100 years and using the perspective so gained to speculate on the next 100. Essentially, it overturns the dominant scientific concept prevalent in Western culture that 'the present' is merely a fleeting moment. Hence the extended present becomes a process of symbolic recovery serving to reconnect past and future.

### Extrapolation

The practice of extending a continuity, trend or other process forward in an unvarying way. 'Straight-line' extrapolation is nowadays frowned upon because there are no such 'pure' processes in an interconnected world. 'Other factors' always intervene to change simple extrapolations.

### Fatalism

The view that one is powerless to change the course of events or what is thought of as 'fate'. A view that stands in direct contrast to the view of futurists (and others) that the future can be substantially affected by human will and action. See determinism.

### Fears About the Future

Perhaps the dominant attitude toward the future is fear. This tends to be strongly-felt, but poorly-articulated. Young peoples' fears can be linked with stereotypical images promulgated through the mass media and reinforced by chronically oppositional youth sub-cultures. However, fears can be resolved through familiarity with futures concepts, futures tools and the empowerment principle.

### Forecasting

Once taken to be the primary futures methodology; but now seen as merely one tool. Most commonly involves the use of time-series data from the past to consider the likely path of future trends or the possible occurrence of future events. Increasingly seen as an input to decision-making, rather than a 'stand alone' method.

### Foresight

A universal human capacity which allows people to think ahead and consider, model, create, respond to-, future eventualities. Founded in the rich and inclusive environment of the human brain/mind system which, crudely put, has sufficiently complex neural 'wiring' to support an extended mode of perception whose main functions are protective and facilitating. Modelled most clearly in everyday acts

such as: driving, crossing a busy road and planning a holiday. A springboard for a wide range of futures methodologies, organisational developments and social innovations.

### Foresight Auditing

Concept analogous to energy auditing where a careful survey of energy supply and use is made in a particular context. Permits savings to be made through careful re-design and use of various energy-saving techniques. Similarly, foresight auditing involves the careful analysis of a situation or context and an assessment of the savings to be made from successful foresight interventions. Such audits can help to establish the grounds for early action, rather than, as is more usually the case, waiting until action is too late, at which time critical situations may get out of hand with excessive human, social, ecological and financial costs.

### Foresight Principle

The view that foresight has become a structural necessity during the late 20th century and that any further progressive social development will necessarily employ it much more systematically than hitherto. Simply put, the present cannot be properly understood without considering future extensions and implications available through foresight.

### Future

A dimension of human existence which extends 'forward' beyond the present and functions as a principle of present action. Makes it possible for humans to have plans, purposes, goals, intentions and meanings. It follows that without the futures dimension, and these active capacities, the present becomes 'thin' and incapable of supporting human activity of any kind. Hence, the future is not the blank space, or unknowable realm that it is popularly thought to be. It has tangible content and can be explored, colonised, imaged and created. It cannot be predicted and there are no future facts. The future is perhaps best seen as the realm of interpretive knowledge. See the future landscape, the loop of futures scanning and the interpretive perspective.

### Future Generations

The future people who will come after us. Those who presently have no voice but who are directly affected by our actions and lack of action. The focus of a developing, world-wide effort to redress the imbalance created by short-term thinking.

### Future Generations Alliance Foundation

Non-profit organisation founded by Japanese entrepreneur Katsuhiko Yazaki in 1992 following the Earth Summit at Rio to advance the cause of future generations studies. Based in Kyoto, Japan. Runs the Kyoto forum and many other activities and meetings. Is a prime mover in the establishment of future generations universities in Australia and China. Promotes holistic values, a critical synthesis of Eastern and Western thinking, spiritual renewal and an ethical commitment to the well-being of future generations. Is developing a fine future generations library in Japanese, English and other languages.

### Future Generations Network

UNESCO-sponsored initiative at the Centre for International Studies, University of Malta, and run by Emmanuel Agius. Publishes the Future Generations Journal. Holds conferences and meetings on a range of futures-related subjects such as genetic engineering and the Law of the Sea.

### Future Generations Studies

In recent years there has been a steady growth of interest in this area. It is supported in part by the Future Generations Network, based in Malta, and the Future Generations Alliance Foundation, based in Kyoto, Japan. These, and other, organisations together with activists and scholars, are exploring the implications of a future generations perspective and a number of social innovations (such as ombudsmen and a Council of 2020) are being proposed and tried out.

### Future Landscape

A metaphor used to describe the evolving view of the near-term future which is available at any time through futures studies and methods. The structural elements of this 'landscape' are visible (eg. through continuities, heavy trends and foreknown events) while the details are necessarily less clear. The morphology of this 'landscape' is influenced by events and the unfolding of history. Hence the loop of futures scanning is constantly repeated and the forward view modified. This aspect of futures study is therefore essentially process-oriented.

### 'Future Shock'

Term coined by pop futurist Alvin Toffler to describe how people are allegedly 'shocked' or 'crippled' by rapid change. Led to much second-rate theorising in the USA and elsewhere. One of the most disempowering terms to have emerged from the futures field, and one best used with care or avoided.

### Future Survey

Leading bibliographic tool in futures studies. Edited by Michael Marien and published monthly by the World Future Society. Contains a selection of brief, critical abstracts on a wide range of futures-related issues and subjects. Inevitably US-centred, but with a selection of material from other sources also. Valuable contribution to futures literature and scholarship.

### Futures

Generic name for the futures field. Stresses the plurality of future options and possibilities. Hence notions of choices and alternatives. Also name of the leading 'flagship' journal of the field. Edited by Colin Blackman in Cambridge, UK, and published by Elsevier, Oxford. Has been published for over 25 years (1996 = volume 28).

### Futuresco

Bibliographic bulletin launched in 1992 by the UNESCO office for Future-Oriented Studies in Paris. Produced infrequently for several years. Treated issues such as 'education', 'environment' and 'culture' in considerable depth and with copious references. Later renamed Futurescan.

### Futurist

A person who works in a futures-related area. Also the name of the monthly magazine of the World Future Society. While everyone is a futurist of sorts, those who consider themselves primarily as futurists normally belong to the interpretive community based around futures studies. However since such studies have no firm boundaries, there is no clear way to ascertain finally who is a futurist and who is not; and this may or may not matter.

### Futurescan System

A strategic planning technique based on two standard futures tools: the cross-impact matrix and scenarios. Based on the QUEST technique developed in the early 1980s by Bert Nanus and Selwyn Enzer. Uses two workshops to (a) analyse key features of an organisation, (b) generate and prioritise trends and events, (c) analyse the latter, (d) build the insights gained into simple scenarios and (e) explore strategic options. Widely used in a number of countries due to low cost, flexibility and way that it provides a unique learning experience for members of an organisation.

### Futures Concepts

Futures concepts are the 'building blocks' of a futures discourse. It is the latter which most significantly enhances peoples' ability to look ahead and to implement foresight. The lack of futures concepts means that futures may appear vague, problematic and overly uncertain; hence it becomes a low social priority. The use of such concepts brings surprising clarity in many areas and hence can contribute to social improvement and decision-making. The lack of such a discourse is probably the single most significant impediment to the wider utilisation of futures thinking.

### Futures Discourse

The symbolic capacity to engage in reflective and action-oriented consideration of futures concerns. The wider development and dissemination of such a discourse is a major priority for the field of futures studies.

### Futures in Education

A variety of concepts, methods, tools etc. that offer teachers and students a wide range of options for teaching, studying and learning about many different aspects of futures. The first futures courses were taught in the 1960s, so there is now some 30 years' worth of practical experience in implementation. Futures concerns are intrinsic to education, but mainstream approaches still proceed more on the 'push' of the past, than on any genuine attempt to be proactive. Hence futures remains largely a 'missing dimension' for most schools. However, the Wiltshire report (Queensland Department of Education, 1994) recommended that 'every syllabus in every area should have a futures perspective'; and the Board of Senior Secondary School Studies there has developed a Futures curriculum for years 11 and 12. Futures studies are taught at a number of universities around the world. There are also moves under way to create an International Masters Program in Futures facilitated via the Internet.

### Futures Field

A complex, globally-distributed and broad area of study which takes futures concerns as its main focus.

Not all futurists agree that it is a field. However, the identification of a series of core elements suggests that it is not stretching credibility to consider it as such. See the knowledge base of futures studies.

#### Futures Imagery

See images of the future.

#### Futures Literature

A rich and varied literature on futures concepts, methods and themes. Originally North American and European in origin, but increasingly enriched by high-quality work from a variety of other cultures.

#### Futures Market

A high-risk environment for financial speculation. Based on the widespread trading of derivatives, ie., complex financial products involving the purchase of future contracts. This activity is entirely unrelated to the study of futures per se.

#### Futures Metaphors

Metaphors used in futures discourse. For example, foresight, the 'future landscape' etc. Such metaphors actively shape the discourse. When used consciously they are arguably among its most powerful symbolic resources.

#### Futures Methodologies

Futures methodologies permit the insights available though discourse to be applied and extended. They include: scenarios, the cross-impact matrix, the Delphi method and others.

#### Futures Studies

Synonym for the futures field.

#### Futures Tools

Futures tools are simple versions of methodologies that can be used for simple problems and with young people. Hence they are particularly valuable in education. They include: time-lines, futures wheels and what if? games.

#### Futures Wheel (or Web)

A simple, but powerful futures technique. A possible future event is placed in the middle of a sheet of paper. A ring of 'first-order', or immediate consequences is then derived, step-by-step. Once this is completed, a 'second-order' ring is derived from the first; and so on. The futures wheel therefore depicts an expanding ring of consequences. Futures wheels are very useful for drawing out peoples' ideas and views. However they are very sensitive to underlying assumptions and outlooks. A very useful teaching tool with a wide range of uses and applications.

### Futures Workshops

Structured sequences of activities which are organised around a particular theme or purpose. For example: imaging a world without weapons, or dealing with young peoples' fears. When executed carefully and well such workshops are a powerful way of empowering people and facilitating social innovation.

### Futuribles

Leading futures organisation in France. Created by Bertrand de Jouvenel, now directed by his son Hugues. Has an extensive library, publications, network of consultants and others. Provides inputs to strategic planning in many forums, including business and government.

### Futurist Code of Ethics

A professional code of ethics for futurists, proposed by Prof. Wendell Bell of Yale University. Includes reference to standards, dealing with complaints, providing encouragement (eg through prizes) and ratifying the code through existing professional associations.

### Gaia Hypothesis

Somewhat provocative notion put forward by James Lovelock that the earth is a living being which is capable of 'adjusting' to human activity in a co-ordinated and holistic way. Attracted a good deal of public attention and criticism, especially from other scientists. Seen by many as a metaphor rather than a verifiable fact.

### Gaming

A group process which attempts to simulate a real-world context, eg, a war, court proceedings or a marketing operation. Sub groups are formed to take on particular identities, and individuals take on particular roles within these. Gaming provides participants with a real sense of the dynamics of a situation. Hence the technique is widely used as a training procedure for, eg, military personnel, managers and lawyers. Also see simulation.

### Global Dynamics

Attempt by model-builders such as Jay Forrester and the Meadows team to construct computer models of aspects of the world system. Declined in popularity in the 80s due to concerns about the methodology, but becoming more popular now as techniques improve and greater computing capacity becomes available. Useful for modelling dynamic changes and 'what if?' scenarios. Popularised in games such as Sim City and Sim Earth, both well-received by futurists and others.

### Global Health

The metaphor of 'health' is taken up and metaphorically applied to the world system. This approach has been successfully developed and popularised by the Worldwatch Institute in Washington D.C. It publishes a series of annual books entitled The State of the World covering critical issues. More recently a second series called Vital Signs has been published. This extends the medical metaphor and considers the well-

being of the planet with the aid of a number of indicators. A highly useful way of gaining an overview of global well-being and dysfunction.

#### Globalism/Globalisation

An ideology or view that focuses on the processes of global integration in a variety of fields: economics, trade, communications and so on. Implies an opening out beyond local and national perspectives to a broader view of an interconnected, interdependent world. But not necessarily a progressive notion when unreflectively applied to current flawed economic systems.

#### Global Problematique

Term coined by the Club of Rome to describe the interlocking series of serious global problems comprising: pollution, overpopulation, loss of biodiversity, de-forestation, armed conflict, starvation and the widening gap between the rich and the poor. More recently contrasted with the 'resolutique'.

#### Global Warming

The steady increase in mean global temperatures consequent upon the release of carbon dioxide and other so-called 'greenhouse' gases into the atmosphere during the industrial era. May signal climate shifts and sea-level rise, with multiple implications for ecologies, island nations and densely-populated coastal fringes. Has led to so-far largely ineffectual attempts to reduce emissions of such gases. The focus of concerted scientific efforts to understand the process and provide clear guidance to governments.

#### Green Politics

Political movement emerging from environmentalism. Has taken the form of pressure groups and green parties in various countries such as the UK., Germany and Australia, but with varying success. Has placed green issues on the mainstream political agenda, but not yet succeeded in forming strong independent political entities. Likely to grow in power and influence.

#### Hermeneutics

The study of meaning in particular contexts. Originated in the study of biblical texts in Medieval period. Posed the question of 'what they meant' in later times and places. Later the methods were taken up and used more widely. The use of hermeneutics in a futures context provides a useful way of 'unwrapping meaning' from what might otherwise seem to be monolithic 'texts'. It helps to support the interpretative perspective, below.

#### Holism

The attempt to see the world in all its diversity as being essentially interconnected and whole.

#### Hudson Institute

Prestigious 'think tank' founded by Rand researcher Herman Kahn to pursue a range of futures-oriented enquiries. While Kahn's books, such as *On Thermonuclear War* (1967) and *The Year 2000* (1967), gained

wide attention, and while Kahn and the Institute were in great demand, the extent to which it established a new 'school' of futures research is questionable. Kahn's work, and that of the Institute, was mainly at the 'hard' end of the spectrum and appealed most directly to corporations and government departments, particularly the military.

#### Human Genome Project

Ambitious, world-wide project involving many teams of scientists working to de-code the entire DNA sequence of the human genome and those of comparable organisms. Is expected to reveal the genetic basis of heredity and therefore the inherited basis of certain diseases and conditions. Seen by some as heralding a 'new era' in medical science; feared by others as the final assault of instrumental reason. Hence will create many new ethical dilemmas, problems of regulation and philosophical questions about the status of human life. Will certainly make it possible to alter individual and/or species characteristics, raising dystopian fears of unacceptable manipulation in the future. A particularly modern version of Pandora's Box.

#### Human Impacts

The total pressure exerted by people on their environment. Not simply a matter of crude numbers. The IPAT formula suggests that impact can be calculated by a multiplier effect:  $\text{Impact} = \text{Population} \times \text{Affluence} \times \text{Technology}$ . This suggests that lightly-populated countries (such as Australia) may be exerting impacts as great as those of more densely-populated regions with a much lower standard of living. In general, the present impact levels are thought to be unsustainable. However, the prevalence of short-term thinking and the lack of foresight obscures the long-term implications. Hence, the issue is continually deferred.

#### Human Motives

The search for control, power and domination of nature that drove the industrial era appears to be in decline, though the full effects will be felt for a very long time. The question arises as to what motives may replace them. Selflessness, unconditional love, stewardship of nature and service to humanity are among the possibilities arising from post-materialism, deep ecology and transpersonal psychology. Since cultural evolution is unpredictable, it cannot be said that such motives will replace industrial ones. However, there is an growing world-wide consensus that they could and should do so before those arising from the industrial outlook devastate the planet.

#### Human Potential

The view that evolution has not ended and that further stages of human development are desirable. Often contrasted with technical development, both of which are seen by different groups as keys to the future. Takes a positive view of human potentials based on, eg., transpersonal psychology. Suggests vertical models of the human being incorporating spiritual elements, and the development of eg. healing powers, psychic clarity and higher states of consciousness beyond the mundane. One of the springboards for the notion of a wise culture.

#### Interpretive Community

A functioning organisational, scholarly or cultural community with a shared frame of reference, shared interests, values, purposes and a common discourse. When applied to futures studies, suggests a world-wide

and mutually-supportive multi-disciplinary community focused on futures issues and concerns, including that of discipline-building.

### Images of the Future/Imaging Futures

Images of the future are representations in words or pictures of possible future states of being. These can act as warnings of futures to avoid, or 'magnets' which attract people to work for their realisation. Imaging futures is the process by which people engage in the active process of creating such images. See futures workshops.

### Industrialism

A world view and economic system that developed in Europe over three centuries and which was centrally based on science, technology and instrumental rationality. Led to sustained population growth, the concentration of people in cities, a new sense of time and the progressive removal of limits. Developed extensive infrastructure and machines of great power, but also repressed other cultures and other ways of knowing. Sanctioned the present assault upon the Earth's life-support systems. See post-industrial society.

### Institute for the Future

Futures research institute founded by Olaf Helmer after his departure from the Rand Corporation. Produced numerous publications applying techniques such as Delphi to a range of futures problems. Theodore J. Gordon was one of the Institute's more well-known researchers who went on to found the Futures Group.

### Institute for Social Inventions

London-based institute created in the mid-1980s by Nicholas Albery and others to provide a forum and seedbed for social inventions. Promotes the latter in schools and many other contexts. Publishes a journal and other materials on this and associated subjects. Founded the Council for Posterity.

### Institutions of Foresight (IOFs)

IOFs are purpose-built organisations that focus on the evolving 'future landscape'. There are several hundred worldwide (depending upon how they are defined). In the words of the late Robert Jungk, they serve as 'look-out institutions', providing warnings of dangers to come and opportunities to be grasped. IOFs are now increasingly seen as structural necessities in a rapidly-changing and fundamentally compromised world. See the foresight principle.

### Instrumental Rationality

Practical form of reason which is based on the solution of technical problems and the efficient performance of technical tasks. Hence widely used in creating a modern technological infrastructure. Highly successful in this context. But dangerous when over-generalised onto other contexts where purpose, meaning, value etc are primary. Lacks any notion of limits. A dominant mode of thinking in industrial contexts. Now under siege, but not necessarily in decline.

### Interpretive Perspective

The view that meanings are fluid, open and negotiable, not fixed and durable. Puts into the hands of individuals and groups a high level of interpretative autonomy - and the responsibility that goes with it to use this power with sensitivity and care. Individuals who consciously stand at the interpretative centre of their world are well-placed to negotiate images and projects of futures worth living in. Whereas empirical knowledge can be derived from past and present, interpretive knowledge is applicable to the futures domain.

### Intrinsic Value

The view that the environment and other life forms possess value in their own right, and not merely as measured by any human uses to which they might be put. Serves to protect them from over-exploitation. But largely set aside during the industrial period. Now being re-learned from indigenous cultures (most of whom took this view) and supported by various progressive groups. Also see deep ecology and use value.

### Knowledge Base of Futures Studies

Term first explored in a special issue of *Futures* in April 1993. Suggests that the field can be understood as comprising several interacting elements such as: language, concepts and metaphors; theories, ideas and images; organisations, networks and practitioners; methodologies and tools; and social movements and social innovations. Used to distinguish futures studies from other areas. Provides a foundation or starting point for futures courses.

### Kyoto Forum

A regular invitational meeting held by the Future Generations Alliance Foundation in Kyoto, Japan. Involves students, leading Japanese and international figures in in-depth dialogue about future generational issues and ideas.

### La Prospective

French term for 'the prospective approach', or, futures studies as practiced in France. Draws on organisations such as Futuribles and the work of Michel Godet and others. This tradition is conceptually and methodologically sophisticated; it has many contemporary uses in organisational development, strategic management and scenario planning.

### Limits to Growth

Thesis set out by the Meadows team in 1972, drawing on a revised Malthusian argument. Suggested that humankind was close to exceeding global limits. Gained much publicity at the time, but was largely set aside later. Re-visited in *Beyond the Limits* (1992), which refined the global model and developed the argument further. Thesis still not fully accepted, but gaining ground in many places. See overshoot and collapse.

### Long-Term Thinking

Use of time-frames that extend beyond the immediate present and near-term future. See the extended present. Also short-term thinking.

### Loop of Futures Scanning

Based on physiological model of perception. Involves (1) scanning forward; (2) interpreting what is seen; (3) decision-making/evaluation; and (4) action. Is most clearly modelled in process of driving or crossing a road. Encapsulates the basic acts of futures study. The latter is identified not as an isolated act but as a process which is constantly re-iterated. Hence the need for institutional locations where such work can be carried out systematically and in the public interest. See institutions of foresight.

### 'Map' of the Future

Metaphor coined to describe the intent of futures studies to provide a guide to the 'terrain' ahead. Highly problematic at first sight, but takes on greater meaning when related to a series of probing questions about the near-term future. 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? High quality answers to questions such as these provide the interpretive knowledge that can be used to create and refine the 'map' or 'structural overview' of the near-term future.

### Matrix

A mathematical environment for interrelating factors in a systematic way. Usually formed by columns and rows of boxes. See Cross-Impact Matrix, above.

### 'Megatrends'

A controversial and imprecise notion coined by John Naisbitt ostensibly to describe large-scale trends occurring in the world. However, careful analysis suggests that most of the changes he identified were neither global nor 'mega' trends. The notion becomes even more problematic when it is realised that, since there is no single, over-arching framework of explanation in the world, there can strictly be no 'mega' trends. The term has passed into popular use, but it has little or no analytic value. Hence, insofar as it represents a kind of 'pop methodology' and privileges a Western, corporate view, it is best satirised or avoided.

### The Metaproblem

Many accounts of 'world problems' focus on externals (eg. see 'global problematique', above). However, a more satisfactory view is that these over-hyped 'problems' are more properly described as the external manifestations of world views, paradigms, assumptions and processes of cultural editing. Hence, the 'metaproblem' refers to the sources of external global concerns in these underlying frameworks of meaning. This view directs attention away from over-hyped gadgets and externals to the processes by which both are created and maintained. This deeper level of analysis is certainly more demanding, but also more rewarding. Can readily be dismissed as 'futures jargon' but is too useful to not be used for this reason. Also see critical futures study.

### Microfutures

Close-up futures, ie, futures of individuals, groups, organisations or localities. Arguably the focus of earlier work, eg in China. Also see Macrofutures.

## Macrofutures

Large-scale futures, ie, futures of countries, regions, continents and the globe. A more recent development supported by developments in methodology, communications, software and the capacity of information systems. See Microfutures.

## Millennium Institute

Washington-based futures organisation, formerly called the Institute for 21st Century Studies. Now offers support for collegiate programs on 21st Century Studies and seeks to promote and support innovative 21st century thinking and practice. The brainchild of Gerald Barney, author of the Global 2000 report to President Carter.

## Millennium Project

Ambitious attempt to set up a geographically and institutionally dispersed think tank from within the United Nations University World Institute for Development Economics Research in Helsinki. Seeks to provide an early warning system for long-term issues and to improve global thinking about them.

## Minimal Present

As science has learned to identify and measure smaller and smaller intervals down to nano-, and pico-seconds, so the default notion of 'the present' has also fallen beneath perceptual thresholds. Hence 'the present' has become minimal and seemed to vanish. This scientific notion of time has become generalised in industrial culture, within which 'time is money' and 'time is short'. The minimal present is an artefact of instrumental thinking that serves to separate people from the web of relationships in which they are, in fact, immersed. Hence to reclaim an extended present can be seen as an act of cultural and symbolic recovery.

## Modelling

The attempt to explore real-world relationships within a computer model. Involves defining and quantifying relationships and building these into an internally self-consistent model that can then be subject to various forms of manipulation. The model may be relatively simple, eg, involving forecasts of local traffic flows; or it may be complex, eg, attempting to represent economic or ecological systems. Perhaps the most famous model is that used by the Meadows team in the Limits to Growth study (1972) which derived controversial policy implications from the interaction of global variables.

## Morphological box

For a system under study the researcher attempts to ask all the critical questions, and for each of these tries to provide all possible answers. A matrix is constructed in which the vertical axis represents critical questions, while the horizontal axis portrays all the possible answers to them. The researcher then tracks through the matrix selecting an item from each horizontal level. This creates a system with many possibilities. However, since many of the latter are implausible, they can be discarded. This is a useful, though time-consuming, tool for systematically exploring the logical possibilities within a defined system.

## Nanotechnology

A new suite of technical possibilities emerging from the confluence of advances in: computing, protein synthesis and micro-engineering. Promises to revolutionise materials fabrication and manufacturing by using tiny 'replicating assemblers' to construct sophisticated artefacts at the molecular level. The 'high priest' of nanotech. is K. Eric Drexler, and his book *Engines of Creation* reads like SF. However, the potential impacts of nanotechnology mean that it should be taken seriously. Even a modestly successful implementation would powerfully affect many human activities.

## National Foresight Strategy

Approach to foresight implementation through a sector-by-sector strategy. Works with key representatives from each major sector to design appropriate foresight measures for that sector. Serves to co-ordinate and facilitate work in different sectors.

## 'New Age'

Grassroots religious revival involving a number of social movements, religious and spiritual traditions. Varied in depth and quality. In one form emerged from the drug culture of the 1960s. In another, brought questions of 'the sacred' into everyday life. Popularised by popular icons such as the Beatles, through their trips to India and their adoption of eastern 'gurus'. Raised more questions than have yet been resolved. Can be seen as a trivialisation of spirituality or as one way that this category is being re-introduced into western cultures. Tends now to be a derisory term within mainstream Western culture, but still held in respect by various sub-cultures.

## New Economic Indicators

Economics is a system of abstractions imposed on human cultures and the world. Many efforts have been, and are being, made to revise its assumptions and tools. One such is the search for new indicators which, for example, take into account: environmental costs, human well-being and household work. Hazel Henderson has developed a set of Country Futures Indicators based on such considerations.

## NGO

Acronym for non-governmental organisation. A broad, umbrella term, for a wide range of voluntary organisations and networks working throughout the world largely for progressive causes.

## Ombudsman for Future Generations

A person, usually a distinguished older man or woman, appointed to speak on behalf of future generations and therefore providing them with a voice in present-day councils. A modern revival of a practice used in some tribal cultures in the past.

## Optimism and Pessimism

Two polar attitudes often identified with the future. Useful as starting points for enquiry but since both can be equally effective in motivating and in inhibiting responses, they have ambiguous implications. The point is to move on to a search for high quality responses. See the empowerment principle.

### Overshoot and Collapse

Model-builders language for a system which exceeds its limits and breaks down or 'crashes'. In the real world, this refers to such things as: the exhaustion of mineral resources, the inability of ecosystems to absorb waste and the breakdown of social and/or economic systems. A future that can be avoided only if it is taken seriously, studied and positive steps are taken to encourage moves in other, more sustainable, directions.

### Paradigm Shift

Paradigms, as defined by Kuhn, serve to organise our thinking along given lines. However, when a prevailing paradigm breaks down there is a period of confusion. A shift to a different outlook then occurs. This is known as a paradigm shift. In time the new pattern itself may decay leading to further transformations. The concept illuminates some of the processes involved in changing outlooks and helps to undermine the idea of linear progress or change. While mis-applied in many contexts, it is a vitally important concept and process which sheds light on the ways people understand and misunderstand each other.

### Participating Consciousness

Term coined by Morris Berman in *The Reenchantment of the World* (1981, 1988). Suggests a mode of thinking and being which is in deep sympathy with the natural world. See deep ecology. Participation can be usefully contrasted with the tendency of instrumental rationality and the scientific method to assume an external stance for working upon nature.

### Past, Present, Future

Temporal categories corresponding to what has been, what is and what may be. In English these are assigned to separate 'compartments'. But in a wider view they are inseparable and fluidly interconnected.

### Pop Futurism

The most superficial level of futures work. Tends to pronounce confidently on great world issues without being informed by developments in linguistics, cultural studies, critical theory, hermeneutics and the like. Thus appeals to mass readership and is highly marketable. But, in failing to 'probe beneath the surface' of social and cultural life misses many shaping realities of past, present and future. See future shock and megatrends.

### Post-Industrial Society

Thesis developed by Daniel Bell and others about the changing structures of modern societies beyond the stage of high industrialism. Interpreted various shifts in population, employment, politics, management and so on. Anticipated the rise of service occupations, the managerial class and global communications. Now somewhat overtaken by events and by more critical analysis of what might be meant by the term 'industrial'. Yet remains a difficult term to replace.

### Post-Materialism

The idea that materialism misrepresented an interwoven and subtly layered world. The view that a whole universe of significance lies behind the mundane world of material surfaces. Assisted by insights from quantum physics, as well as from meditative practices around the world. Articulated in popular terms by Capra in *The Tao of Physics* (1975) and in works by Ken Wilber such as *No Boundary* (1979) and *A Brief History of Everything* (1995). Possibly a component of the world view that follows from industrialism.

### Practitioners

Individuals who earn a living by working as futurists or in futures-related professions.

### Precursor analysis

The search for significant 'signals' of change and their interpretation within a particular context. Often applied in the USA to 'bellwether' states, indicating various shifts or trends. Also of use in environmental contexts. A demanding, labour intensive technique which is critically dependent upon the quality of analysis involved. Also see environmental scanning.

### Prediction

The attempt to know some aspect of the future with certainty and precision. Has many informal uses in everyday life and in, eg., engineering contexts (where the main elements of systems can be measured). But of little or no value in social contexts where qualitative factors predominate. Often mistakenly identified with futures work. But if possible would enforce a fatalistic outlook and eliminate the role of humans as makers and shapers of history.

### Prep 21

Contraction standing for 'preparing for the 21st Century'. Originated with Michael Marien who floated the idea in 1988. Supported by a survey of futures teaching in higher education carried out by Garry Gappert in 1989. Auspiced within the World Future Society in 1990 onward. Since 1990 Howard Didsbury has coordinated this loose international network for those teaching futures studies in secondary and tertiary contexts. A Prep 21 Bulletin is published every year or so. It contains news about members' activities, new books and commentaries on teaching. In 1994 a Prep 21 Course/Program Guide edited by Prof. Didsbury was published. It outlines some 26 tertiary courses worldwide.

### Problematise

To take a concept, idea or value and make it seem strange, unusual or socially constructed. That is, to take a non-naturalistic view. Similar to deconstruction, but less formal. Useful to futurists who may otherwise overlook the shaping influences of language, traditions and speech communities.

### Prospective

Literally 'of the future'. Term favoured by French futurists: describes their perspective and hints at their methodology which explicitly combines calculation and judgement. The primary exponent is Michel Godet, Professor of Industrial Prospective, at CNAM, Paris. See *La Prospective*.

### Rand Corporation

An early 'think tank' created by the American Air Force in the 1950s to consider future possibilities including political and military options and the nature and impacts of possible future technologies. Relied to a large extent on the views of experts. Two well-known Rand researchers include the mathematician Olaf Helmer and Herman Kahn who collaborated on the development of the Delphi technique.

### Reductionism

The practice of taking a phenomenon and reducing it to only a part of the whole. Often involves reducing complex phenomena to numbers such that within an instrumental frame 'if it cannot be measured, it does not exist'. In this view, religion is merely 'therapy', the environment is just 'a set of resources' and employees are mere 'human resources' to be manipulated and exploited. Reductionism is often seen as an inherent tendency within the industrial worldview.

### Relevance tree

A way of analysing phenomena through a series of increasing levels of detail. A relevance tree begins with a final product or outcome then works back step by step through all the stages that are necessary in order to create it. Similar to a flow diagram and a decision tree.

### Resolutique

Awkward neologism coined to contrast with the Club of Rome's term 'problematique', referring to global problems. Refers to the range of possible solutions to the deteriorating global outlook. Suggests an agenda of restorative actions and policies which runs all the way from promoting recycling and energy efficiency to reconstituting the Western Industrial worldview. Hence its breadth renders it rather problematic.

### Restorative Economy

The standard industrial economy exerts costs and deterioration at every stage. A restorative economy is one which creates long-term benefits and restoration at every stage. It is the brain-child of Paul Hawken, whose book *The Ecology of Commerce* (1993) explores this concept in great and compelling detail.

### Rights of Posterity

Attempt to articulate ethical principles through which to recognise and respond to the needs of future generations. Recognises their vulnerability due to exclusion from present-day decision-making.

### Scarcity models

Mental models, or attitudes, which presuppose scarcity, lack or difficulty rather than abundance and opportunity. Seen in the thinking of political leaders, in classical economics, conventional marketing and banking. Scarcity thinking is paradigmatically grounded on unexamined assumptions about the nature of the world, society and the 'good life' in which, for example, reductionism is rampant and the commodification of human needs is unquestioned. Critiqued by many, including Erich Fromm in *To have or To be?* (1978). Can be contrasted with 'new age' outlooks in which abundance is taken as a prior assumption.

### Scenario

A self-consistent picture of the future or an aspect of the future. The best scenarios are carefully created to be internally coherent and useful. Used mainly to illustrate continuities from and contrasts to the present in order to reveal choices, consequences etc. Also used as an exploratory tool or a tool for decision-making. One of the most productive and durable of all futures tools with a wide range of applications.

### Science Fiction

Branch of speculative writing with roots in the Gothic imagination, Utopian fictions and other tales of wonder. Takes notions of estrangement and dislocation consequent upon the impacts of science and technology and explores implications. In no way a reliable guide to the future, but provides a fascinating tapestry of speculation about a wide variety of future worlds; some plausible, others not. Can provide a useful grounding in a grammar of futures imagery. Many futurists began thinking about the real future after having their imagination stimulated by sf.

### Selective Legitimation

Part of the change cycle. Occurs when a proposed innovation has succeeded in being adopted and is selectively chosen, valued and implemented. A positive outcome is normally expected. However, some social innovations (such as terrorism) clearly do not contribute to social well-being.

### Short-Term Thinking

The common habit in Western cultures of discounting the future and concentrating on the here-and-now. Permits whole populations to overlook the costs of present ways of life and the dangers and opportunities ahead. A major barrier to the implementation of foresight.

### Simulation

Similar to gaming, but usually involves a physical system such as an army and a battlefield. The various functional units and pieces of hardware are described and the relationships between them are calculated. Various strategies are then worked through within a functional or computer model.

### Social Imaging

The process of creating, validating, using and in some instances undermining socially significant images of futures. Can be seen in attempts of powerful organisations to promote large-scale infrastructure projects and, more informally, in the processes of futures workshops. Commercial images of futures absorbed by young people give rise to concerns that they are overly violent, depressing etc. and misrepresent the much wider range of social options available. Social imaging is a complex, little-studied process that nevertheless has powerful social consequences. The key work on the role of social imaging is Fred Polak's book *The Image of the Future* (1961), translated into English by Elise Boulding.

### Social Innovation/Invention

Any intentional act that seeks to make new social arrangements in order to solve a problem or extend

boundaries. Often taught in a workshop form as a structured intentional process. Seen as a counter-balance to technical innovation/invention. See the Institute for Social Inventions.

### Social Learning

The process by which a society adapts to prevailing conditions, copes with problems and prepares for its future. Social learning by disaster can be contrasted with that promoted by foresight and futures study. The point of the latter is to reduce the costs associated with more crude forms of social learning, such as famine and war. Social learning is also facilitated by dominant institutions, but these tend to be very much bound up with 'the way things are' and hence limited in their capacity to perceive the 'future landscape' or carry out far-reaching innovations. Explored by Donald Michael in *On Learning to Plan and Planning to Learn* (1973).

### Spaceship Earth

Metaphor which is often linked with the environmental movement. Indicates that all humanity shares a single, indivisible world. Carries the implication of vulnerability and a sense that we had better learn to get along if we and the 'spaceship' are to survive. A radical notion in the 70s and 80s, but commonplace in the 90s.

### Stewardship

The value-based notion that people are not on the Earth to 'use it up' or destroy it but, rather, to care for and maintain it. Contrasts with prevailing notions of use, extraction and exploitation. But increasingly promoted by eg. environmentalists and others. A stewardship ethic is thought to be one of the possible mainstays of a future social order which pursued sustainability.

### Strategic Planning

A systematic process of looking ahead, judging the results and integrating them with day-to-day management. A standard business technique, but one not yet taken up very effectively by, eg., educators. Usually based on fairly short-term thinking and fails to problematise underlying cultural assumptions. One limited example of the loop of futures scanning.

### Strategic and Proactive Leadership

Strategic leadership refers to the act of leading an organisation in such a way that it will prosper in relation to its present-day competitors in an existing environment. Proactive leadership is more concerned with making substantive progress in the longer term and in relation to the evolving global picture. It is more risky and more creative, but arguably more productive too.

### Sustainable Development

Viewed by some as an oxymoron, this term was popularised by the Brundtland Commission *Our Common Future* (1987). It indicates a desire to move away from the conventional post-war type of development characterised by rapid growth, pollution and heavy environmental impacts to one that is low-growth, pollution-free and has greatly reduced environmental impacts. Has become a conceptual

rallying point for some; however, the practical difficulties of implementing sustainable development are much harder to resolve.

### Sustainability

Notion that human use of a system, resource or environment could take place indefinitely without significant deterioration or impact. A highly subjective idea in some ways and notoriously difficult to implement. However, clearly 'an idea whose time has come'. Therefore stands in clear opposition to existing notions of use, human dominance and growth-oriented economics. Explored thoroughly by L. Milbrath in *Envisaging a Sustainable Society* (1989).

### Synergy

Term from systems language. Suggests that when two or more factors work together well something extra is added. Indicates a particularly fruitful combination or mode of co-operation.

### Technology Assessment

Indicative of attempts to investigate the impacts and implications of new technologies before they are widely applied. Has been attempted in many arenas, with mixed success. The US OTA (Office of Technology Assessment) was the most well-known and had a good track record; but it was abolished in 1995. The foresight principle is not yet well enough established for this kind of practice to be routine. Hence many new technologies come 'on stream' without careful, in-depth assessment. One partial exception is the human genome project, which has about 3% of its funding devoted to exploring social implications. But this is almost certainly an exception.

### Technological Determinism

View that dominant forms of technology will shape the future. See determinism.

### Threshold effect

A qualitative change within a system that may occur quickly when a critical level is reached. For example, the saturation of a market for a particular product, the sudden decline of a fishery due to over-fishing or the abrupt loss of topsoil following deforestation. In each case a 'change of state' occurs when a particular threshold is reached or exceeded.

### Time

One of the basic categories of the social order. Taken as unproblematic by superficial views (such as pop futurism), but, since the way it is understood varies from culture to culture, it is a rich field of enquiry. The study of time is one of the deep areas of philosophy, scholarship and thought upon which futures study is itself founded.

### Time Capsule

Fascinating exercise in which items from contemporary times are selected and stored in a purpose-designed

environment as a gift to future generations. One of the few ways that present people can directly address future ones.

### Time Frames

Distinct periods of time ranging from pico seconds to millennia and beyond. Useful when particular activities can be matched with appropriate time-frames. At present a much-contested issue in the context of the chronic short-termism of Western cultures. But holds out the promise of a better articulation between human activities and more appropriate temporal perspectives.

### Transformative Cycle

See Change Cycle, above.

### Transition to Sustainability

The process whereby a growth-addicted, unsustainable culture re-thinks its values, assumptions, practices etc. so as to achieve a significant shift towards a more long-term and viable way of life. A very challenging process with social, technical, economic, political and other ramifications. The focus for much soul-searching, social invention and perhaps conflict over the coming years. This is not an idea that will go away. But it may be transmuted or developed as social experience is gained regarding its implementation accumulates. See restorative economy.

### Transpersonal Psychology

Branch of psychology pioneered by Abraham Maslow and others. Looks beyond standard ego needs to those associated with self-transcendence and self-transformation. Proposes an optimistic view of human nature which is inspired by great spiritual leaders. Suggests a process of 'vertical' development of the human being which foreshadows states of clarity and integration well beyond what is now considered usual. One of the main starting points for a wise culture. Explored most thoroughly in the work of Ken Wilber, particularly his *Sex, Ecology, Spirituality* (1995).

### Trend Analysis

The use of time-series and other data to identify and then 'track' changes in the environment. Can provide insights into possible future states, but considered unreliable due to unforeseen events, discontinuities etc.

### Twenty-First Century Studies

An international program of studies, comprised mainly of international teams, which focuses upon the outlook of the early 21st century. Supported by the Millennium Institute in Washington D.C. which has developed a small, but effective, body of knowledge about how best to carry out such work. There is also a collegiate program which has been implemented within the USA.

### Two Hundred Year Present

An inspired idea suggested by Elise Boulding. Overturns the minimal present by defining a context which

is arguably 'our space in time'. The first half of this period can be concretely explored through the lives of those who were born around 100 years ago, and later. These accounts can be assembled into an historical perspective of great symbolic significance. Using this perspective, one may then look ahead to the next 100 and speculate intelligently about the world of our children and grandchildren. This formulation of the extended present is one of the most useful futures concepts. The exercise outlined is highly suitable for educational use.

## UNESCO

The United Nations Educational, Scientific and Cultural Organisation. Based in Paris, and funded by a 'club' of rich nations, many of whom are behind in their contributions. Hence the work of the organisation is continually hampered by lack of funds. Has a small Future-Oriented Studies Program. Publishes occasional books and a journal, *Futurescan*.

## Use Value

The notion that the value of things is related only to their mode of use or to an equivalent value in cash. Opposite to intrinsic value.

## Utopia

A literary form, popular in the Middle Ages and later, in which an author outlined his or her ideal society. Now has connotations of being 'unrealistic'. However, the Utopian impulse is arguably being re-born in perspectives which explore viable human futures. See D. Elgin's *Awakening Earth* (1993). Contrast to Dystopia.

## Values and Futures

There is an intimate connection between the two. Values dictate the outlines of the present and future agenda. Many symbolic and real conflicts turn on values and differing interests. Hence terms such as 'desirable' and 'sustainable' refer back to fundamental assumptions and their associated values. There is substantial evidence that 'industrial' values are inadequate for a world of over 5 billion people, poised on the edge of the 21st century.

## Virtual Reality

Emerging media environment with range of educational, entertainment, military and design applications. The user dons a helmet equipped with small tv screens, and a glove which is used to navigate through a secondary environment mediated by graphic interfaces in a computer. Has led to speculation about 'virtual worlds' but they remain unproven at this stage. Graphics considered inferior at present. But may become more compelling with more powerful computing. Also see cyberspace.

## Visioning

A process of making images of the future sufficiently real and compelling to act as 'magnets', or goals to achieve, or 'spurs' to present action. Can be individual, but usually takes place in futures workshops.

## Visualisation

The individual act of creating a compelling image of some future process, possibility or event. Usually used to create positive inner states, attitudes etc. Has particular uses in healing and in recovery from illnesses such as cancer.

## Western Linear Time

The view of time developed in the West of a uni-directional movement from past to future, and the 'arrow of time'. Differs from other cosmologies which were/are based on cyclic or steady-state principles. Was uncritically universalised but is now under challenge from other cultures and, to some extent, by quantum physics.

## Western World View

Synonymous with the industrial outlook. Developed from the synthesis of Bacon, Descartes and Newton; embodied in the machines, devices and social organisation of the industrial revolution. Spread throughout the world by colonial powers leading to the 'fatal impact' in many native cultures. Progressively removed limits, increased technical power and consumed natural resources. Until the 20th century, viewed the future with naive optimism and overlooked the long-term effects of its many impacts. Reached its peak in late Victorian times and slowly declined thereafter - while in some respects still retaining great symbolic power. Reached a low point in the First World War, and then an even deeper one with the bombing of Hiroshima and Nagasaki in 1945. Had a reprieve, perhaps, with the moon landing in 1969, but never fully recovered. Has now become fractured and incoherent - ripe, perhaps, for a widespread paradigm shift to a new pattern and outlook.

## Wise Culture

View of a possible future that has emerged from what Huxley called 'the Perennial tradition' as well as from the work of more modern interpreters such as Ken Wilber, and from transpersonal psychology. Suggests that the keys to real cultural progress have more to do with human development, the integration of different aspects of the individual and a more spiritualised outlook - than it does with purely 'external' developments in science and technology. Often used as a contrast to industrial culture, to highlight deficiencies of the latter. However, the 'real' future will need to achieve a balance between these 'inner' and 'outer' perspectives.

## World Future Society

American organisation founded by journalist Edward Cornish. Located in Washington D. C. The world's largest futures organisation with some 35,000 members. Publishes *The Futurist*, *Futures Research Quarterly* and *Future Survey*, as well as conference volumes. Holds regular high-quality conferences, mainly in the USA. Has a professional membership category. Provides a valuable, non-partisan arena for considering futures issues and promoting professional activities. For example, support for foresight implementation at the State level.

### World Futures Studies Federation

A smaller but more international, politically progressive organisation. Has about 600 members who comprise a rich network of practicing futurists. The secretariat moves to a different base every few years. In 1996 it was located in Brisbane, Queensland. The WFSF publishes a regular newsletter. It holds international conferences around the world in different locations. It runs courses in Europe and Asia for students, is facilitative in emphasis and has special interests in supporting progressive futures work worldwide.

### Worldview

The basic orientation of a culture as expressed in its values, assumptions, ways of knowing etc. Result of a long historical process of cultural editing. When taken naturalistically the worldview appears authoritative. However, when approached with the tools of modern scholarship, the constitution of world views is laid open. While this may lead to an initial loss of respect for authority and precedence, there are also new opportunities to put aside dysfunctional aspects and to begin to 'design' a worldview that may be more appropriate for post-modern conditions. 'The future' may be the ultimate design problem.

### Worldview Assumptions

Taken-for-granted assumptions that are embedded in the world view and hence taken as natural and given. In Western culture, such assumptions could include: the desirability of economic growth, nature as a resource, the functionality of short-term thinking and the dominance of instrumental reason.

### Worldwatch Institute

Washington D.C.-based progressive think tank which for many years put out small booklets on global issues. For the past several years has published a much-praised yearbook called *The State of the World*. Also more recently put out the *Vital Signs* series which assesses global health through a series of analytic indicators. All are fine examples of applied futures scholarship.

### Young Peoples' Attitudes to Futures

Subject of much media speculation. Many surveys across the Western world show the same patterns and responses. Most young people are fearful of the future and, when given the chance, depict it in very negative terms. However the optimism of others is largely naive. Both optimism and fear are appropriate starting points for exploring the empowerment principle. See optimism and pessimism.

### Young Peoples' Needs and Responsibilities

Twin concerns of, and for, young people. A framework is needed for considering both over the next 20-or-so years covering recognised and unacknowledged needs, a range of responsibilities (local and global) and strategies for addressing both. Futures studies suggest that the view ahead can be clarified sufficiently to make this much more than an empty gesture. Makes it possible for schooling to become explicitly futures-oriented. See futures in education.

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**\*Note**

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