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ESSAY

Long-term thinking and the politics of reconceptualization

Richard A Slaughter

This essay is a response to the dominance of short-term thinking in Western culture. It begins with a critique of the minimal, or fleeting, present and then explores some possibilities for extending what might be meant by the 'present'. It suggests that considerable utility may be derived from a more careful and considered use of particular timeframes. It is doubtful whether questions of sustainability, the rights of future generations and, indeed, the disciplined study of futures can be resolved without a number of innovations based on long-term thinking. The latter part of the essay considers two—the creation of institutions of foresight and an international programme of 21st century studies.

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.¹

Futures scholarship attempts to negotiate extensions of the chronically short-term timeframes which have become characteristic of Western cultures. But the point is not merely to extend the boundaries of concern forward in an indiscriminating way. Beyond this is the

more detailed task of assigning different timeframes to different purposes and, in so doing, to provide futures-related projects with a more durable foundation.

Critique of the minimal present

In daily life people appear to juggle timeframes with a fluid, unconscious dexterity. A series of temporally related concerns structure our lives in ways that are seldom considered or reflected on critically. But there is plentiful historical evidence that the Western time-sense in the final decade of the 20th century 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.

Dr Richard Slaughter is Consulting Editor to *Futures* and may be contacted at the Futures Study Centre, 117 Church Street, Hawthorn 3122, Victoria, Australia (Tel: +61 3 9818 7574; fax: +61 3 9819 0876; e-mail: presents@ariel.its.unimelb.edu.au).

With the rise of mechanical clocks a variety of social inventions became universalized—schedules, timetables, 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.²

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 forwards. It exceeds the boundaries of our own lives and may therefore appear profoundly threatening. The sense of threat is well portrayed by Gould and others who describe the effects of the discovery of 'deep time' in the Victorian era. It powerfully destabilized 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.³

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* which falls below human perceptual thresholds.⁴

This may seem to contradict my suggestion that people find their way through space/time with great ease and fluidity. But this is not the case. For actively structuring our individual and social use of time is a default notion of the present which arguably interferes with our ability to function in a dynamically interconnected world. I am referring here to the minimal present. When I have asked students 'how long is the present?', one answer I frequently get is that it is fleeting: 'as soon as you try to grasp it, it's gone'.

This poses a difficulty. While it may make perfect scientific sense to measure time in nano- or pico-seconds, such fragments are of no human value whatsoever. In fact, it seems

clear that the rise of a machine-derived minimal present is dysfunctional for people and cultures. Consider: 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 on earth. The food and oxygen which keeps us alive are recycled 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.⁵

This insight draws attention to 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 on 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 nature of the universe is hidden.

The present as a span of time

The good news is that the present is socially constructed. It is not a feature of the natural world. It can be reflected on critically, renegotiated and changed. Hence, any long-term solutions to the global problematique will centrally involve the kind of work which intervenes in the coding of underlying world-view assumptions and consciously reconstructs

them.⁶

The fascinating question 'how long is the present?' is a good way to begin a seminar on time. It soon becomes clear that there is no single answer. It all depends on the human purpose or, more precisely, the implicit frame that is invoked by particular activities and needs. *Figure 1* suggests that for typing, driving or playing a musical instrument the necessary coordination demands a very tight timeframe. But for listening to music, for watching a play or relaxing, the timeframe and the associated time-sense are quite different. Choosing a partner, buying a house or raising a child are examples of even longer timespans embracing a more extended present. So for human beings the meaning of the present *begins* with the 'here-and-now', but it can then move through many stages to the whole lifespan and (through intelligence, imagination, vision etc) beyond it to past and future. At a cultural level the present could be said to start in a particular era and merge finally into cosmological uncertainty.

The huge variety of possible timeframes within which to situate the present seems to create a problem of its own. No one could be expected to do justice to very long timeframes.

Moreover, suitable criteria are needed to choose between them.

Overlapping versions of 'the present'

Fortunately we have access to a range of options. People are very good at choosing appropriate timeframes for many personal activities. But on a social or cultural level the picture is different. In many cases we are not yet matching appropriate timeframes to suitable activities. Consider two examples. Despite the fact that futures studies have developed rapidly over recent decades and been successfully integrated into educational programmes at primary, secondary and tertiary levels, the standard or default empiricist assumptions that 'you can't study the future' or 'the future does not exist' still remain powerfully present in most educational systems. The result is a worldwide blind spot: a lopsided timeframe comprising past and present but with a minimal or undeveloped sense of the future. This structural fault obscures the centrality of the futures dimension and therefore impedes the young in their search for meaning and purpose.⁷

A second example is seen in the nuclear

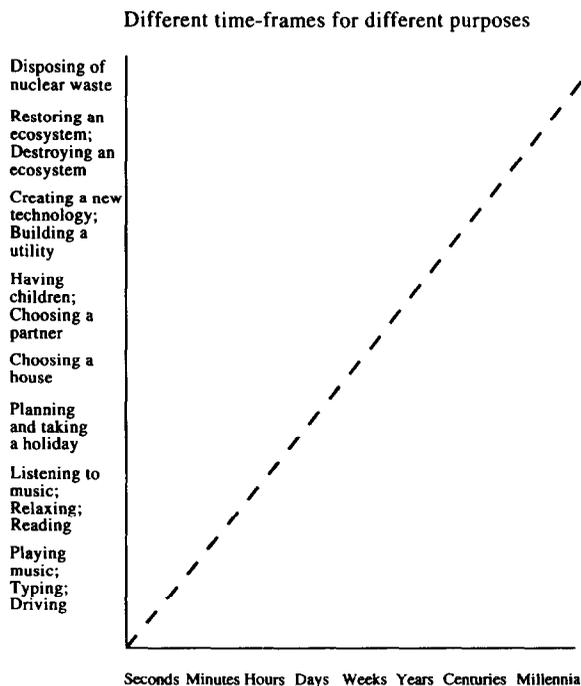


Figure 1. Different timeframes for different purposes.

and so-called 'defence' industries that have created quantities of radioactive materials for nuclear weapons and power stations. As is well-known, some of the waste products will persist for a 'half-life' of 250 000 years. This is clearly an unprecedented cultural and ecological experiment. In other words, the full costs have *already* been displaced into the future where, or when, other generations will have to pick up the tab. This is already evident in controversies over the decommissioning of nuclear plants. Such dubious commitments appear to be characteristic of a proud and hubristic technological culture which adopted short-term timeframes as a cultural norm, but which lacked an applied foresight principle and an underlying ethic respecting the rights of future generations.⁸

Such examples could be multiplied many times. But the point I want to emphasise is that the minimal present provides no way of coming to grips with lopsided and dysfunctional phenomena of this type. Yet, at the same time, it is too simple to merely argue for a longer view. The intention points in the right direction, but long-term thinking needs greater definition. It is therefore useful to consider some of the options. For the purposes of this discussion I look briefly at timeframes from one year to 200 years. (This is not to suggest that shorter or longer timeframes do not have their own uses.)

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 timeframe for activities which fall into this rhythm—farming and crop rotation, finance, the delivery of educational programmes etc. However, 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 timescale. Yet it is long enough to provide insight into dynamic processes which 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. Ten years is also a reasonable horizon for developing and testing new products and services. So, the ten year present is important in strategic thinking and in policy formulation. 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 timeframe. That is, one which can begin to incorporate some 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 judgments about the impacts and implications of existing and new technologies. 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, del-, or re-forestation, 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) solar objects such as comets become very clear. The long view begins.

The 'two hundred year present'

I regard this as the ideal timeframe 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 past one hundred years provides the perspective with which to investigate the next hundred.⁹ Moreover, it is a time with which we are organically linked 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 such starting points one may begin to develop a kind of intergenerational biography or dialogue. This is one of many educationally productive activities which can develop from the use of longer timeframes.

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 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 industrialized consciousness that the view back takes precedence over the view ahead. 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 much 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.¹¹

It is at this point that the disciplined scholarship 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. These include: developing a vital concern for future generations, exploring the dynamics of cultural evolution, elaborating visions of sustainability, creating institutions of foresight and carrying out 21st century studies. Some of these themes are taken up below.

Choosing between timeframes

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:

- What is the underlying purpose or focus?
- Is there anything intrinsic about the focus or activity which suggests an appropriate timeframe?
- Can one foresee the timespan over which the effects of decisions will be likely to be felt?
- Is there a precedent for choosing one period over another; was the choice a conscious one, and if not why?
- Are there any distinct costs or benefits of choosing one timeframe over another?
- What interests or constituencies are involved, and what influence do they have over the ways the issue is framed?
- What are the nature of the pressures to choose a shorter or longer timeframe?

Such questions can help to clarify what time-

frames may be appropriate in different circumstances.

Short-term thinking and the politics of reconceptualization

The relevance of long-term thinking is not obvious to those who habitually live within narrow timeframes. So it is worth exploring some implications of this shift through the metaphor of a journey. Hence the following anecdote.

Imagine that you are 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, soon after you spot the danger, you begin paddling frantically. But it is 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 out 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? I suggest that it is the first. Why?

The quick answer is that hardly anyone is looking very far ahead. While all normal individuals have the capacity for foresight, and some institutions use it for specific purposes, nations on the whole have very little. Foresight declines markedly when we move from individuals to organizations, and again from these to societies. Why is this? 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 seldom actually leading in a way that is informed by the near-future context; rather, they are 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 from this is fatalism. One educated person said to me: '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. I take it as axiomatic that the future of social systems cannot be predicted. But its outlines can be drawn 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 important;
- discern sources of inspiration and hope.

These relatively straightforward questions outline a general futures methodology.¹² 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.

Futures work can be characterized by a loop made up of perhaps four stages. First: futures scanning; second: interpretation; third: action; fourth: evaluation. The futures map is constantly refreshed and updated by this process. So is our view of the past. In fact, past, present and future are constantly 'reconstructed' from this weaving process, back and forward in time. It follows that the future map can never be complete. However, it is useful. Let me give a couple of examples.

First, it is now being suggested that the human species uses about 40% 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 80% what does this imply for the rest of the natural world? Is it not evident that, while the numbers involved are certainly imprecise, the underlying message is very clear? One trend is towards greatly increased human impacts; the other is

towards reduced ecosystem capacity. This is not a pleasant outlook.

Second, conventional economics has a powerful but irrational commitment to growth. 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 conceptualized 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 us steadily toward the edge. The politics of reconceptualization (ie 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 20-to-50 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. This critical point is overlooked in all conventional discourses.

Consider *Figure 2*. On the left is a three-month summary of the value of the Australian dollar in early 1994. It clearly shows an upward trend. But change the scale. On the right is a four-year overview from January 1990 to April 1994. This is hardly 'long-term' but it

makes the point. Here the trend is clearly down; hence the short-term view is merely an artefact of the time-frame. If we now turn to the forward view the point is made even more clearly. *Figure 3* shows the 'standard run' of the world model created by the Meadows team. I am not concerned with the precise shapes of these curves. The point is that if we are moving along any of them using only a short-term view, we risk heading into the 'overshoot and collapse' mode almost without warning. This is exactly what the upper part of *Figure 3* is designed to demonstrate: the short-term timeframes in common use, contrasted with the life of a child and the long-term effects of CFCs on the ozone layer. On the other hand, a long-term view will illuminate the dangers and options, giving us time to respond.

At present virtually all governments are proceeding with characteristic myopia: playing industrial era games; hoping, fearing, denying, blocking and generally not getting the drift of things clearly in view. While the waterfall story was certainly a metaphor, it is one that rings true. For in the mid-1990s it is quite clear that the predicament of humankind is becoming progressively more serious, and time is not on our side. The global system has been sending us messages for some time. Now with glacial slowness it is adjusting to the onslaught of human activity in ways that impair its ability to support life.¹³

But the media is ambivalent about the global predicament. In general the former is

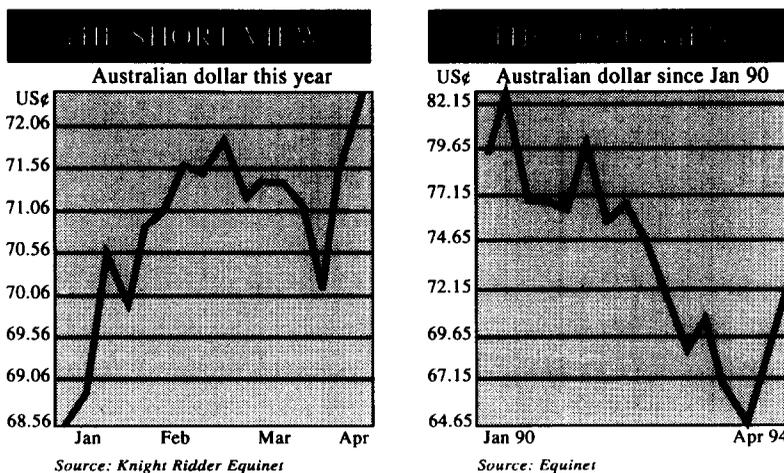
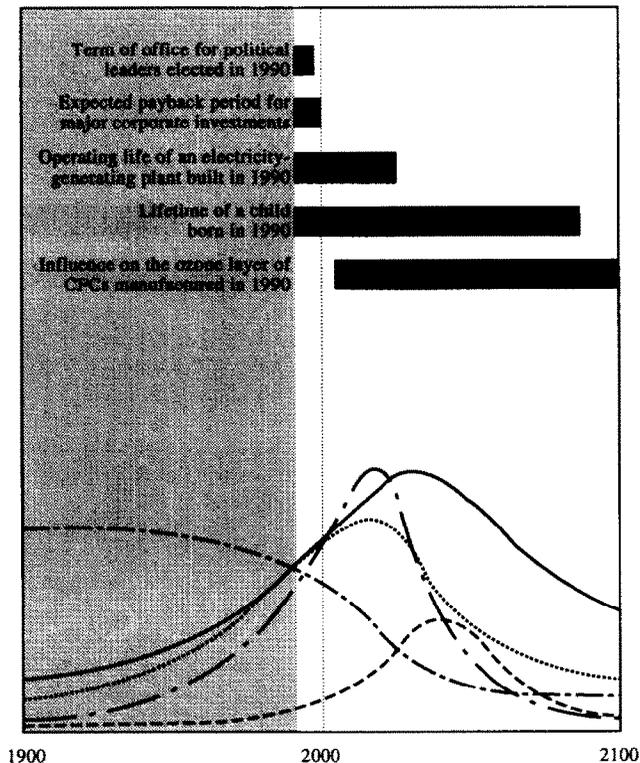


Figure 2. Different views of the value of the Australian dollar.



Source: Meadows, *Beyond the Limits*, Earthscan, London, 1992, page 235

Figure 3. Timeframes and the World 3 Model.

characterized by a business-as-usual-view, supplemented by the patchwork reporting of events, and wholesale reality avoidance. The media agenda is strongly influenced by political events, disasters, commercial imperatives and short-term thinking. It seldom looks at processes, good news, non-commercial values or long-term thinking. Yet if there is one future I do not believe in it is 'business-as-usual'. The reason is simple: neither Western industrial societies, nor any others can sustain the rapid rates of material growth established in the past. So 'business-as-usual' can only be a temporary state. It literally has no future because it leads inexorably on to other scenarios: perhaps a breakthrough to another form of society or, more likely, a breakdown to a more primitive one.

Septics often reply that an emergency of this magnitude will stimulate us to produce more scientists and more technology. But what they overlook is that science and technology are ambiguous and secondary. That is, they produce new costs and penalties along with

any new benefits. They are also secondary in the sense that they cannot solve systemic problems (such as the greenhouse effect or the alienation of youth) or problems which emerge from wrong values and dated worldviews. These are matters for human judgment, the exercise of practical ethics and the politics of reconceptualization.

Science and technology can help us to master the global predicament only if they are set within a context of a non-material outlook and a thoroughly post-post-industrial worldview. What might these entail?

From pragmatism to sustainability

It is not unusual to find comments by politicians and others which advocate an essentially reactive approach to the challenges of the future. Visions are out, pragmatism is in. How valid is this? Certainly too much vision making is little but naive wish fulfilment and reflects poor-quality thinking. It fails to engage with the characteristics and constraints of the real

world. Sadly, there are some who are either inspirational in approach or who have captured a fragment of methodology which they tenaciously market to the uninformed. But these are not my concern here.

I take the view that, while future events are unpredictable, the broad outlines of the coming decades are fairly clear. As noted above, the study of factors such as continuities, trends, change processes and items in the pipeline provides plenty of material to outline the general features of this time. A broad grasp of this 'future landscape' can provide strategic intelligence in many areas, suggesting, for example, that nations should maximize their long-term comparative advantages. However this is only a beginning.

To debate anything at all requires immersion in a particular discourse. For example, I never bet. I am disqualified from discussing racing because I know absolutely nothing about it. What has been widely overlooked on the wider scene is that to debate futures in any depth requires a *futures dis-course*. The latter is created and supported by futures concepts, futures methods, futures organizations and futures literature. These permit views of futures to be much clearer, much more explicit.¹⁴

The key questions about the 21st century cannot be resolved by ungrounded visions, fragments of methodology or pragmatism. Is it possible to imagine the captain of a ship taking the latter view? ('We'll just put to sea and take it from there...') No. It is a recipe for disaster. Beyond these sterile approaches lie very many real and useful possibilities that can be examined, debated and implemented. Some of the latter greatly clarify views of viable and sustainable futures. The real problem is that a debate of this nature and quality has barely

penetrated the halls and councils of power.

I find it illuminating to contrast the industrial outlook with that of what I call a wise culture. *Table 1* illustrates the way that different operating assumptions lead to rather different outlooks.

As noted, the meaning of 'growth' means different things to different people. It is quite clear that the old view—rapid material growth, high-volume material throughput, nature as a resource etc—is no longer viable. But there are so many paradigm commitments and entrenched interests supporting the old view that we should expect a protracted period of conflict and difficulty before a more qualitative understanding of growth will become common. Partly this hinges on understanding, and responding to, global limits.

The *Limits to Growth* study of the 1970s was widely criticized. However, a more recent book has clarified the situation considerably. In *Beyond the Limits* (1992) the Meadows team clearly depict the dynamics of exponential growth in the world system. It is clear that there are indeed limits on such things as the stocks of certain raw materials, the capacity of 'sinks' (where things end up) to absorb waste and the health of ecosystems. However, the vested interests which gain a living from running the present economic machine do not want to know about a world of limits and they will not change their ways voluntarily. In a short-term view this is viable. But in a wise culture limits would be reconceptualized and rechosen in the light of long-term thinking and post-materialist values.

In such a context, nature is no longer viewed merely as a resource. It is resacralized, ie made special, and seen as a community to which we belong. A sense of the sacred is not

TABLE 1. ALTERNATIVE OPERATING ASSUMPTIONS

	Industrial culture	A wise culture
<i>Growth</i>	Rapid, quantitative	Problematic or qualitative
<i>Limits</i>	None recognized	Reconceptualized and chosen
<i>Nature</i>	Set of resources	Resacralized, seen as a community
<i>Person/person person/nature relations</i>	Exploitive and exclusive	Reverent, participatory
<i>The present</i>	Fleeting, alienated	Extended, variable
<i>Technology</i>	Violent, dominant, destructive	Appropriate, secondary peaceful

just a theoretical construct. When handled well, its influence affects human interactions, which are here seen as more gentle and participatory.¹⁵

The technology of the industrial period can be thoroughly worked over and, where found wanting, abandoned or reinvented. There is a structural shift away from high-impact, high-cost technologies to those that are elegant, economical and appropriate. Technology is not seen as a solution on its own, but as contributing to solutions when properly integrated into a social and ecological context.

Shifts such as these may seem far-fetched. Yet they hold out the hope of viable and sustainable futures. The underlying shift is one of worldview, of outlook. Pragmatism is not only useless in this context—it is actively dangerous. I conclude that until the worldview shift is fully underway there is really no prospect of a successful transition out of the industrial period.

The shift from short-term to long-term thinking is primary. But who really takes it seriously? That is the nub of the problem. Once we can answer that we will be well on the road towards a future worth having. So what kind of organizations will act as cata-lysts?

Why institutions of foresight and national 21st century studies are needed: the case of Australia

When politician the Hon Barry Jones set up the Australian Commission for the Future (CFF) in 1985, he hoped it would help to determine the national agenda, to clarify the view ahead. The fact that it didn't get that far has been taken by some to imply that the effort was wasted and that such initiatives are unnecessary. But both these conclusions are wrong.

The significance of the CFF is much easier to understand when seen in terms of *an institutional learning process*. Its achievements include making the term 'greenhouse' a household word, various research studies, social innovations (including a science shop and Asialink), a vast number of public and parliamentary briefings and a variety of publications—particularly the high-profile *21C*. In retrospect it is clear that the CFF was under-designed, understaffed and over-ambitious. But much has been learned over the past eight years. So an appropriate response would not be to write it off, but rather to ask 'what has been learned? How can it be done better?'

In the twin role of friend and critic, I have learned a number of things from the CFF. First, that any such initiative must be grounded in a clear understanding of what futures work is and how it may be carried out. Second, the key staff of such an organization should be properly qualified in futures study or one of its subfields. Third, enthusiasm, idealism and good ideas are all very well. Yet without access to a range of tried-and-tested futures methodologies, not a lot will actually happen and the dynamic of success will remain elusive. So, global best practice in a range of futures methods is an essential goal. Professional visits should be organized with this kind of skill transfer very much in mind.

Fourth, an organization occupying a futures niche becomes vulnerable to very, very many competing demands and agendas. There are two key ways of dealing with this. One is to have the grounding in the field that I mentioned above. The other is to operate the organization in the light of a clear ethical stance. The former provides an intellectual basis, the latter a moral basis for decision making and strategic management. Both are needed to provide guidance in dealing with a challenging workload. They also prevent the organization from being diverted by other agendas.

Fifth, good communications are vital. Communication, that is, with key constituencies within Australia and with the wider field overseas. The lack of this capacity in earlier administrations goes some way to explaining the intellectual and organizational isolation of the CFF. What is needed is a detailed strategy for communication, using a range of methods (including e-mail). Sixth there needs to be a shared corporate understanding of, and commitment to, a specifically futures-related mission. While aspects of this emerged in the past, neither the proven strengths of well-grounded futures work, nor the simple (but powerful) rationales for the greater use of foresight, were clearly articulated.¹⁶

If such guidelines are followed in future, organizations such as the CFF can play a much more robust and effective cultural role. More generally, the need for what I call institutions of foresight (IOFs) emerges not from particular sectoral needs, and still less from special interests. Rather, it grows from reading the nature of the times we live in and responding appropriately. For example, a turbulent international context characterized by instability and rapid change requires that all nations

develop a sophisticated foresight capability. Such a capacity would form part of an early warning system which would more than pay for the resources expended upon it. This is needed to consider major problems, assess national strategies, avoid disasters and set long-term goals.

It follows that nations should not attempt to 'walk blindly into the 21st century'. Nor should they attempt to do so in isolation. They each require their own futures expertise, developed locally. All need to be continuously informed of developments in theory, practice, literature and methodology from around the world. At present there is no systematic way to participate in, or to take advantage of, these debates and developments.¹⁷

There is also a need to go beyond 'problem avoidance' to identify in positive terms the outlines of sustainable futures. At present the task is hampered because a futures discourse is needed to frame the key questions. This discourse has developed to a remarkable degree in the futures field yielding, for example, a range of very rich insights into the nature of sustainability.¹⁸ None of this is esoteric. It can be taught and learned at all educational levels, with the result that the future ceases to be merely an irrelevance or an empty space. It becomes a principle of present action.

To summarize, engaging with futures problems is a challenging task which requires long-term thinking, well-qualified people, rigorous intellectual frameworks, robust methodologies and decisive, ethical management. The underlying comparison to be made is not with protests, minority interests, media stunts or even social movements, valuable as these are, but with social provision for long-term structural needs—that is with fire brigades, hospitals, the armed forces, emergency services and the like. It is this level of social commitment that is needed to secure the benefits which a well-grounded foresight capacity can deliver.

21st century studies

Why, specifically, are 21st century studies needed? It follows from the above that present debates about futures are pretty minimal. As noted, they lack a futures discourse and seem to be dominated by narrow views of science, technology, economics and marketing. Whereas what is needed is a panoramic overview of the terrain, or future landscape, of the

next 20-to-30 years which is not predictive or deterministic. It will include major trends, a range of carefully chosen scenarios, problems, existing and emerging issues, items 'in the pipeline' and a range of options, choices and alternatives. All these resources exist and are being used. They are simply not being used widely enough.

How can a study be mounted? There is no need to reinvent the wheel. Costa Rica, Mexico, Ireland, Portugal, Poland, Turkey, India, China, Korea, Japan, Indonesia and the Pacific Islands are among the countries where some kind of national 21st century study is already well underway.¹⁹ This means that there is a growing body of expertise about how such work is organized, funded and managed. This expertise is specific, relevant and unrestricted. It is constantly developing and even includes supporting materials and software.²⁰ So new projects would be joining an international process which is well underway, not starting at the beginning.

To put it briefly, we need national 21st century studies because the 20th century is nearly over and the outlook from the mid-1990s is exceptionally challenging. I don't believe for one moment that people realize just how challenging it really is. But unless we move fast, our children and grandchildren will find out the hard way. It is astounding to realize how few people are prepared to think about—let alone actively create—the future. But the challenge is to engage with the forward view, and then act. The fact is that the keys to the future do not lie in what is hoped for or feared, but in the nature of the human response.

I call this the empowerment principle.²¹

Conclusion

The spread of Western culture and epistemology throughout the world has universalized a view that time is linear, time is money and time is short. However, none of these assumptions is cosmically valid. Moreover, quantum physics has undermined the neat world of empirical certainty that they implied. As Darling puts it:

The whole perceived universe, the macrocosm in which humans lived out their apparently well-ordered lives was fashioned upon a quivering quantum framework. The human world itself was quantal in nature! And the fact that men and women were not personally conscious of the strange goings-on of their subatomic infrastructure was beside the

point. Humans saw, because they were equipped to see, the smoothed, aggregate behaviour of countless trillions of ghostly quantum particles and their interactions. That aggregate behaviour had been the province of 'classical' physics—commonsense physics by any other name. But classical physics was a sham, a mirage, albeit a convincing one. At every scale the universe was quantal, now, at the dawn of the twentieth century, as it had been since the earliest moments of time.²²

So now we are challenged to take another leap. That is a leap from a taken-for-granted immersion in temporal processes that unfold naturally, or mechanically, to one in which we take responsibility for choosing appropriate timeframes; for probing beneath the surface of everyday life and reconceptualizing long-held cultural commitments.²³

This essay has explored some of the choices. It suggests that the default minimal present which developed over the past two or three centuries is itself something of a fossil. If continued, it will rob the present generation of a wider, richer view, and permit it to edge steadily towards global limits without foresight, without a clear awareness of how dysfunctional short-term thinking has become. The result would be an unparalleled disaster. For exceeding global limits simply means that the environment would snap back into a more primitive mode, thus shrugging off large slabs of life—including human life. However, the conscious use of timeframes, and the use of longer-term thinking in general, provides sufficient leeway (just) to think, decide, and act.

Quivering beneath the surface of these workaday suggestions is the quantum universe which is richer and stranger than we can yet know. What a waste it would be if, just as these insights permeated our historical present, the human race were to lose its grip on this small planet. Future generations yet unborn are waiting in the wings. They will be the beneficiaries of our efforts—or the victims of our failure.

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