From future shock to social foresight: Re-contextualising cyberculture

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> **"The most interesting puzzle in our times is that we so willingly sleepwalk through the process of reconstituting the conditions of human existence." (Winner 1986)**

The notion of "future shock" attracted widespread attention in the early 1970s but never became intellectually respectable. What it did do was to help express widely felt concerns about the nature of "changing times." The context in which it arose was that of a rapidly transforming world. As late as the mid-19th century human life was framed by what appeared to be the vast and inexhaustible realm of nature. But by the mid-20th century this relationship had been inverted: humanity had expanded to occupy nearly every niche on the planet and nature was in retreat. Similarly, the products of high industrialism (such as those that were proudly displayed at the Great Exhibition at the Crystal Palace in London in 1851) had been discarded, transformed, miniaturized or transcended. The replacement of old-fashioned radio tubes, by tiny and more durable solid state transistors became one symbol of this transformation. Another was the rise of the conservation movement, first in the U.S., then in other places too. For many people the revolutions and changes of the early 20th century overturned their sense of "normalcy," of a predictable and settled social order. Instability became the norm in many domains of social and economic life. Consequently, "the future" no longer appeared normal and natural. It increasingly looked more like some kind of artifact -- a consequence of what people did or failed to do. It was this sense of continuing transformation, existential threat and the intuition that the future would be very, very different that Alvin Toffler expressed in *Future Shock* (Toffler 1970).

Cyberculture is a relatively recent development that explores some aspects of highly technologized near future worlds. This essay seeks to contextualize cyberculture in a wider stream of human responses to transformed futures. It begins with a critical overview of the future shock thesis and attempts to situate this within the mindset of American futurism in the 1970s. It suggests that Toffler's work was one source of ideas that led toward the development of futures studies as a substantive field of inquiry. The essay considers how the latter has evolved into an intellectually robust and pragmatically useful field of inquiry and action. It then looks briefly at the interconnections between futures studies, cyberculture and the "real" future.

Shape of things to come

"The shape of things to come" had been a preoccupation of many writers, artists, visionaries and social critics for several centuries. For example, it generated an extensive utopian literature that speculated on future societies. But in the 20th century the utopian impulse was buried under the collective experience of two world wars, the coming of the nuclear bomb and the environmental crisis. Utopia gave way to dystopia -- darker visions of futures gone sour. The human race would be overwhelmed by its own procreative powers, by pollution or perhaps by "intelligent" machines that no longer supported its existence. Such collective fears gave rise to responses in at least three domains.

One was popular culture. Science fiction writers from John Brunner to William Gibson and Neil Stephenson produced a variety of highly credible dystopian future novels. Filmmakers explored the cinematic possibilities of dystopia in films such as *Blade Runner*, *Terminator Two* and the highly successful *Matrix*. The term "technofear" was coined to describe much of the work of this genre and suggested that the latter provided ways for the popular imagination to come to grips with some of the implications of rapidly advancing science and technology.

Another domain of response embraces a modern lineage of writers, who articulated concerns about the future(s) of humanity through polemical non-fictional writing. Into this group fall such names as H. G. Wells (who wrote fiction as well), Lewis Mumford, Rachel Carson, Herbert Marcuse, and Theodore Roszak.

Finally there were, and continue to be, a number of more formal disciplinary and institutional responses to a drastically altered civilizational outlook. They include the development of futures studies as a distinct discipline, the rise of a wide variety of explicitly futures-oriented nongovernmental organizations such as the World Future Society and the World Futures Studies Federation, the evolution of Institutions of Foresight (IOFs) and, much later, the emergence of cyberculture.

When *Future Shock* was first published in 1970 it became an instant best seller. It drew together many of the threads of these challenges and transformations. It also proposed measures for dealing with them.

The future shock thesis

Writing during the late 1960s Toffler summarized this thesis thus:

> [I]n three short decades between now and the turn of the next millennium, millions of psychologically normal people will experience an abrupt collision with the future. Affluent, educated citizens of the world's richest and most technically advanced nations, they will fall victim to tomorrow's most menacing malady: the disease of change. Unable to keep up with the supercharged pace of change, brought to the edge of breakdown by incessant demands to adapt to novelty, many will plunge into future shock. For them the future will have arrived too soon (Cross 1974).

He argued that a new force had entered history -- what he called "the accelerative thrust" -- and further, that individuals, organizations, society, and the entire world were completely unprepared for dealing with it. This led to a "sharp break with previous experience." We were now living in times that were "no longer normal." At the physical level we were "tampering with the chemical and biological stability of the human race," while at the psychological level we were subjecting whole populations to various forms of over-stimulation via "sensory, cognitive, and decision stress." The main thrust of the argument was that both individuals and societies needed to learn how to adapt to and manage the sources of over-rapid change. In particular this meant bringing technological innovation under some sort of collective control. The bulk of *Future Shock* is devoted to exploring these themes in different areas of human experience and culture.

The keys to the book, however, lie in the final section, which is devoted to what Toffler termed "Strategies for Survival." Here are four chapters on "coping with tomorrow," "education in the future tense," "taming technology," and "the strategy of social futurism." Here is where Toffler set out his best ideas for responding to the situation he had described. Under "coping" were grouped proposals for "personal stability zones," counseling, halfway

houses, the creation of "enclaves of the past" and "enclaves of the future," and the deliberate reinvention of coping rituals.

Possibly the best section in the book is that on education. Here he advanced a powerful critique: " ... what passes for education today, even in our 'best' schools and colleges, is a hopeless anachronism .... " He then added:

> [F]or all this rhetoric about the future, our schools face backwards towards a dying system, rather than forwards to an emerging new society. Their vast energies are applied to cranking out Industrial Men -- people tooled for survival in a system that will be dead before they are" (Toffler 1972, 202).

The thesis was then advanced that the prime objective of education should be to " ... increase the individual's 'cope-ability' -- the speed and economy with which he can adapt to continual change ... " (Toffler 1972, 364). Central to this was "the habit of anticipation." Assumptions, projections, images of futures would need to become part and parcel of every individual's school experience. Learning contracts would be needed, along with mentors from the adult population. The student's "future-focused role image" (that is, his or her view of their future self) would be nourished along with these capabilities. A democratic "council for the future" was needed in every school. Science fiction was an appropriate form of literature to encourage these capacities.

Regarding technology, Toffler put forward the view that a "powerful strategy in the battle to prevent mass future shock ... involves the conscious regulation of scientific advance" (Toffler 1972, 387). For Toffler "the horrifying truth is that, so far as much technology is concerned, no one is in charge." Hence what was needed was "far more sophisticated criteria for choosing among technologies" (Toffler 1972, 391). The option of what was later to be called an "expert system" named OLIVER was canvassed. Perhaps this would help diminish the demands on people. Overall, serious efforts needed to be devoted to anticipating the consequences of technological developments. Referring to changes in sexual habits consequent upon the contraceptive pill he asserted that:

> We can no longer afford to let such secondary social effects just 'happen'. We must attempt to anticipate them in advance, estimating, to the degree possible, their nature, strength, and timing. Where these effects are likely to be seriously damaging we must also be prepared to block the new technology. It is as simple as that. Technology cannot be permitted to rampage through the society (Toffler 1972, 396).

The writer concluded that "a machinery for screening machines" was needed. This could be created by appointing a "technology ombudsman" as part of an "environmental screen" for protecting society from untoward effects.

The culmination of *Future Shock* is a long final chapter on "the strategy of social futurism." It begins with a rhetorical flourish -- " ... can one live in a society that is out of control?" -- and then goes on to outline some of the social innovations needed to ameliorate change. There is an emphatic call for social indicators:

> [A] sensitive system of indicators geared to measuring the achievement of social and cultural goals, and integrated with economic indicators, is part of the technical equipment that any society needs before it can successfully reach the next stage of eco-technological development. It is an absolute pre-requisite for post-technocratic planning and change management (Toffler 1972, 413).

A Council of Social Advisers could be created to complement an existing Council of Economic Advisers. The 'proliferation of organizations devoted to the study of the future' is noted and their long-term time horizons commented on with approval. "Scientific futurists" would work hand-in-hand with them to explore possible, probable, and preferable futures. In Toffler's view the utopian impulse could be "used as a tool rather than an escape" and used to stimulate the social imagination in pursuit of better futures. But this would need institutional support:

> [S]cientific futurist institutes must be spotted like nodes in a loose network throughout the entire governmental structure ... so that in every department, local or national, some staff devotes itself to scanning the probable long-term future in its assigned field (Toffler 1972, 423).

In addition:

> [W]e need to train thousands of young people in the perspectives and techniques of scientific futurism, inviting them to share in the exciting venture of mapping probable futures (Toffler 1972, 423).

In what was, perhaps, an unconscious echo of Wells' notion of a "global brain," (Wells, 1938, 1971) Toffler suggested that "as the globe is itself dotted with future-sensors, we might consider creating a great international institute, a world futures data bank" (Toffler 1972, 424). This, in turn, would support what Toffler termed "anticipatory democracy." The latter would set up "a continuing plebiscite on the future," simulations of various kinds and "social futures assemblies," all designed to encourage wide participation in social decision-making. Toward the end of the chapter Toffler summarized his position thus:

> [T]his, then, is the ultimate objective of social futurism, not merely the transcendence of technocracy and the substitution of more humane, far-sighted, more democratic planning, but the subjugation of the process of evolution itself to conscious human guidance (Toffler 1972, 438--439).

He added:

> [F]or this is the supreme instant, the turning point in history at which man either vanquishes the process of change or vanishes, at which, from being the unconscious puppet of evolution he becomes either its victim or its master (Toffler 1972, 439).

These ideas and proposals drew widespread attention because they attempted to craft a number of responses to issues and questions that concerned many people but which fell outside the usual problem detection, problem resolution systems of an industrial society. They also drew attention to defects in the way that society operated and considered a range of innovative responses. But most of all, perhaps, what people responded to was the notion that here were clues to a very different future. Here, indeed, was a whole new way of responding to change that people felt they could begin to grasp and possibly use.

Future Shock 30 years on

Three decades later, the underpinnings of many of the ideas advanced in *Future Shock* remain problematic. There is no doubt, however, that the thesis focused many peoples' attention on futures-related concerns. These included: the difficulties of understanding and responding to complex processes of change; issues of human and environmental adaptation to unprecedented rates of change; the problem of subjecting ever more powerful technologies to some form of effective social control; and, overall, the problem of how to come to terms with the wide range of futures clearly implied by all of the above.

Like others before and since, Toffler rightly argued that these transformations in the conditions of human life were unprecedented in human history. His work aligned with that of countless other people in many countries to help stimulate a range of social responses. Among them were the development of futures studies, the application of futures approaches in education and the growth of future oriented NGOs.

As noted previously, the *Future Shock* thesis portrayed people as being "overwhelmed" by change to a point of widespread dysfunctionality that might prefigure widespread social breakdown. But "change" was seen as a wholly external force, rather than something that worked through specific social formations and through the structures and processes that maintain their interests. Such a diagnosis placed the onus for response rather heavily upon these decontextualized and "shocked" individuals. It overlooked the social entities that were (and remain) complicit in generating and sustaining "change." Overall, this was a disempowering approach that displaced autonomy from individuals and groups into poorly defined and shadowy social locations that could not be readily located or challenged.

Linked with this is the way that Toffler ascribed the prime responsibility for "rapid change" to "technology" -- not to the agencies and powers that have the ability to define, focus, develop, market, and apply it. The effect was mystificatory in effect, though not, I am sure, in intent. While Toffler sought to encourage "social futurism" and "anticipatory democracy," he did so in a way that completely overlooked the difficulties people face in (a) understanding and (b) attempting to intervene in their historical context.

In summary, the *Future Shock* thesis can be seen as an expression of a journalistic view of macro-change from a very particular viewpoint in space and time. It foregrounds the habits of perception that are characteristic of that time and attempts to universalize them. As noted, this framework certainly provided some useful suggestions for possible ways forward. But as an interpretive agenda it was unworkable in practice. Conspicuously lacking were ways of understanding, and coming to grips with, other dysfunctional imbalances in culture. "Change" is only one of them. Meaninglessness, lack of purpose, hyper-materialism, technological narcissism, and spiritual hunger are a few of the others that might be encompassed within a wider view. But *Future Shock* was silent upon them all.

The mindset of early American futurism

Early American futurist work based on *Future Shock*-type analyses was nothing if not ambitious. It attempted to monitor global trends (some of which were and are poorly understood), act as a societal early warning system, explore and illuminate a bewildering range of possibilities and choices, influence public and private decision-making in a multitude of contexts, and disseminate its ideas and conclusions as widely as possible. Its practitioners wanted to help "create the future."

In view of the enormity of these self-imposed tasks there is a strong case for a low-key, self-effacing mode of discourse hedged around with qualifications of various kinds. But when Edward Cornish wrote of the "great future that we all know is possible," he articulated a deeply felt and widely shared American attitude that "if we can create believable dreams of a better future world, then we can build for that world, for we live in an age when a peaceful, prosperous, and happy world is a genuine possibility." This view reflected a sense of optimism and power that was, perhaps, central to the American experience (Cornish 1980, 15--19). Another, much reprinted, paper exposed the darker side of this sensibility by concluding that "the only possible conclusion is a call to action." Along with, "the task is clear. The task

is huge ... time is horribly short ... today the whole human experiment may hang on the question of how fast we now press for the development of a science for survival" (Platt 1973, 16).

Statements of this nature sprang from the same sources of self-understanding, concern, and limitation as *Future Shock*. They attempted to express the ideals and the fears of much of humankind. But, sympathize though we may, they simply did not travel well, and it is important to understand why. In these, and countless other cases, it was not always clear how, or in exactly what sense, people could begin to exert control over events or act to prevent threatened crises. Regardless of whether the view expressed was optimistic or pessimistic, whether the task was to create utopia or merely to avoid dystopia, something was missing.

People who were deeply involved in particular ways of life, values, logics-in-use, traditions, and so on -- people whose worldviews differed in many substantial ways from those of futurists -- were being asked to cooperate from a great social distance in a demanding series of more or less well-defined tasks that lacked historical precedent, or, so far as they were concerned, contemporary sanction. Thus, generalized "calls to action" were not an effective way to make progress. The implicit view of individuals and societies was an under-dimensioned one that glossed over more than was prudent of the substance of social life and social being.

Then and now most people realize that the future is inherently uncertain and conditional. Its relation to the present is complicated by a host of social, cultural, and ideological factors. The sense in which it may be "built" or "chosen" needs to be clarified in some detail by those with ideas about what it should be like. That this seldom happens is not really a comment upon individuals. It is founded on a universal dilemma. People who are necessarily embedded in their own historicity cannot readily aspire to the almost supernatural (or supra-historical) powers involved. As Radnitzky put it, "what is 'irrational' in human history is that men make their history but ... do not know the history they make. They have not yet been able to make it with full consciousness" (Radnitzky 1972, 119). This is a dilemma facing anyone wishing to direct change. To avoid "future shock," to build a "science of survival" or to design a "peaceful, prosperous, and happy world" not only begs a number of very important questions, it also requires the development of more inclusive and enabling forms of consciousness and action.

Hence, during the 1970s and 1980s the presentation of particular futures ideas -- and indeed, of the futures field more generally -- was marred by exaggeration, by a rather naive view of human capacities and by over-optimism about the potential for social change. Yet despite these drawbacks, the future shock thesis also helped to stimulate a number of constructive social responses.

Future Shock *as a stimulus to social innovation*

Toffler was dissatisfied with what he regarded as "technocratic" forms of decision making and social administration. PPBS (planning, programming, budgeting systems) and a president's council set up by Nixon fell a long way short. Rather, he called for a "revolution" in the way long-term social goals were formulated. What he wanted was a "continuing plebiscite on the future." To this end he proposed the creation of what he called "social futures assemblies" throughout America, coupled with a range of social simulation exercises in schools.

Yet Toffler's vivid social imagination exceeded his practical grasp of what would be needed to enable such innovations. To read *Future Shock* 30 years on is to be struck by the disjunction between the power of the vision and the poverty of means. The vision stimulated a number of attempts to set up such assemblies. For example, in Hawaii citizens were polled as to how they saw likely and desired futures. The results were summarized as scenarios in a newsletter and acted out on television. A television vote then followed. A book entitled *Anticipatory Democracy* provided a showcase for ideas and experiments of this kind (Bezold 1978). So there is no doubt that *Future Shock* stimulated the social imagination. But most of Toffler's ideas needed a lot more work before they could be put into practice.

Part of the explanation lies in Toffler's habit of privileging aspects of the outer empirical world (facts, trends, change processes) and overlooking the inner interpretive one (worldviews, paradigms, social interests). In subsequent years it became clear that to carry futures proposals from the realm of ideas into social action requires far more than a description of the organizational forms they might take. What Toffler, and indeed many futurists, overlooked is that *the futures domain is primarily a symbolic one*. To operate successfully within it requires a working familiarity with the language, concepts, frameworks that support future-oriented modes of inquiry and action. While Toffler's research had provided him with an elaborate futures vocabulary and a rich store of futures-related ideas and proposals, most of those reading his work were not able to translate his proposals into action because they could not cross this symbolic gulf. To move from ideas to action in fact requires progress though several "layers of capability" which had not yet been described at that time (see From Future Shock to Social Foresight, below). Thus the main drawback of the future shock thesis was that it did not help people find their way into that domain and hence discover the deeper sources of understanding and insight that Toffler had himself overlooked.

Toffler was equally adamant about the need for technology assessment -- and in principle he was right. In the chapter "Taming Technology" he put forward the notion of a "technology ombudsman," a public agency that would investigate complaints about irresponsible applications of various technologies. Closely related to this was the idea of an "environmental screen" that would assess the impacts of technologies before they were adopted. Companies would employ their own "consequence analysis staff" to carry out this kind of work. In both cases it is possible to see one of the starting points of the OTA (Office of Technology Assessment) that was established some years later (only to be axed by Reagan). Similarly the environmental screen may be seen as a precursor of environmental impact statements, which later became common practice. In these cases a generous interpretation of the role of *Future Shock* would see it as helping to popularize the need for such arrangements in a rapidly changing society.

On the other hand, since Toffler did not attempt a deeper analysis of the worldviews, presuppositions, ideologies and embedded interests that were driving (and continue to drive) the global system, he was in a weak position to call into question the apparent inevitability of technological advance or to propose means of dealing with it at a constitutive level. Hence his well-meaning suggestions were, in effect, outstripped by vastly more powerful forces.

Legend has it that in 1966 Toffler was involved in one of the first high school courses in futures studies. What is certainly the case is that a few years later he edited a wide-ranging book called *Learning for Tomorrow* in which he collected together articles by many future-oriented educators in the U.S. (Toffler 1974). Here were displayed some of the early formulations of theory, practice, and self understanding that later were incorporated into more

durable approaches to futures education. While the book was by no means as successful as the earlier one, it achieved a significant readership in the U.S. and elsewhere.

Toffler's ideas about future-oriented education certainly provided a stimulus to this hitherto neglected area. But, over time, it became increasingly clear that the foundations of futures in education were shaky. A close look at American classrooms during the 1970s and 1980s made it clear that innovative futures work had been successful in practical terms. But a search for durable underpinnings was fruitless for one very simple reason: there were none. The pop-psychology approach taken by Toffler served to initiate, and perhaps to inspire up to a point. But it could not nourish and support. Thus during the time of Reagan and Thatcher futures education initiatives were perceived to be inessential and were widely discarded. It would be some years before a more durable foundation would be constructed and a new wave of future-oriented educational work taken up by other hands and minds elsewhere (Hicks and Slaughter 1998).

In summary, the *Future Shock* saga provided a particular sort of thesis about social change, economic development, the role of technology, and, overall, the ways that organizations and individuals might begin to come to grips with them. But it did so in ways that failed to enable the very category of human agency that it sought to assist. Toffler went on to other work on other projects: *The Third Wave*, *Powershift*, *War and Anti-War* and the diminutive but ambitious paperback *Creating a New Civilization* (Toffler, A. and H. 1994). Perhaps the chief outcome of all this activity was to establish Toffler, and as time went by his wife Heidi also, as highly "mediagenic" futurists who not only earned a handsome living with their speculations and proposals, but also were sought out and promoted by politicians such as Newt Gingrich, one-time leader of the U.S. House of Representatives. The path from public engagement and discipline-building to lucrative private consulting is regrettably, however, a common one. It helps to explain why futures studies has taken longer to advance than it might otherwise have done.

Development of substantive futures inquiry

Futures studies has been described as:

> [A] field of intellectual and political activity concerning all sectors of the psychological, social, economic, political, and cultural life, aiming at discovering and mastering the extensions of the complex chains of causalities, by means of conceptualizations, systematic reflections, experimentations, anticipations, and creative thinking. Futures studies therefore constitute a natural basis for subnational, national, and international, and both interdisciplinary and transdisciplinary activities tending to become a new forum for the basis of political decision making (Masini and Samset 1975, 15).

Another definition was offered by Roy Amara in 1981. He saw it as an exploration of possible, probable, and preferable futures (Amara 1981, 25--29). However, by the 1990s it became more appropriate to consider it as an emerging "meta-discipline." "Meta-" because of the way it integrates material, data, ideas, tools, etc. from a wide variety of sources; and "discipline" because when done well it clearly supports disciplined inquiry into the constitution of human futures (Slaughter 1988, 372--385). By the end of the 1990s four main traditions, or paradigmatic ways of framing and approaching futures work, were defined. These were as follows:

- **The empirical/analytic tradition.** This is basically data-driven, positivistic, often corporate and hence identified most strongly with North American sources. The names of Herman Kahn and Julian Simon are often identified with this approach.

- **The critical/comparative tradition.** This is a more socially critical approach which recognizes different approaches to knowledge and its use, and different social interests. It takes a more comparative approach and is linked with this writer, Hazel Henderson and Sohail Inayatullah, among others.

- **The activist/participatory tradition.** This is very much about facilitation and activism. Hence it has links with some of the social movements that are close to futures studies, such as the peace, women's, and environmental movements. The approach is expressed most directly in workshop formats such as those created and implemented by Robert Jungk, Elise Boulding, Warren Zieglar and Joanna Macy.

- **The multicultural/global tradition.** This more recent approach springs from the emergence of futures studies, and its underlying concerns, from many non-Western contexts. It has been supported by UNESCO and by the courses run in various countries by the World Futures Studies Federation. Those associated with this arena include Zia Sardar, Tony Stevenson and Sohail Inayatullah, as well as a growing number of non-Western futurists.

Besides these four traditions, or paradigms, of futures work, there are also a number of substantive levels at which this work can take place (Slaughter 1993). These include the following:

- **Pop futurism.** This is trite, superficial work. It is media-friendly and often seen in weekend newspaper supplements and on brief television features. It is summed up by statements such as "how science and technology are improving our lives and creating the future." This is the world of the fleeting image and the transient sound-bite. It is eminently marketable, but bereft of theory. It arguably detracts from "real" futures work (that is, work with useful social consequences).

- **Problem-oriented work.** This is more serious work. It looks at the ways that societies and organizations are responding, or should respond, to the challenges of the near-term future. So it is largely about social rules and regulations. It emerges most typically in, for example, environmental legislation and organizational innovations, particularly in business -- which often gives the impression of being "stranded" at this level.

- **Critical futures studies.** Critical work attempts to "probe beneath the surface" of social life and to discern some of the deeper processes of meaning-making, paradigm formation, and the active influence of obscured worldview commitments (for example, "growth is good" and "nature is merely a set of utilitarian resources"). It utilizes the tools and insights that have emerged within the humanities and which allow us to "interrogate," question, and critique the symbolic foundations of social life and -- this is the real point -- hence to discern the grounds of new, or renewed, options. Properly understood, the deconstructive and reconstructive aspects of high-quality futures work balance each other in a productive fusion of methods.

- **Epistemological futures work.** Here is where futures studies merges into the foundational areas that feed into the futures enterprise and provide part of its substantive basis. Hence philosophy, ontology, macro-history, the study of time, cosmology, and other disciplines are all relevant at this deep level.

Thus futures studies has developed breadth and depth over the last three decades. It is now a globally distributed meta-discipline taught in a number of universities and which increasingly figures in strategic decision-making, policy debates, and the emergence of social innovations. In essence, it provides interpretative or propositional knowledge about the future, up-dates this regularly, assesses the quality of emerging understandings, and uses them for a range of socially useful purposes. When *Future Shock* was first published such claims could not have been supported, whereas today they are a reality -- a fact demonstrated by work such as Wendell Bell's two-volume opus *The Foundations of Futures Studies* (Bell 1996) in the *Knowledge Base of Futures Studies* series (Slaughter 1996).

Drawing on such sources, futurists "study the future" or "construct forward views." In so doing they open out the future as a symbolically and practically significant ream. The discerning of in-depth understanding from these processes enables us to identify options and choices in the present. The point is to move away from a passive or fatalistic acceptance of an "unknown" future to an active and confident participation in creating positively desired futures. Most futurists believe that the future can be shaped by the careful and responsible exercise of human will and effort. Futurists differ in many of their views, but most agree that individuals, organizations, and cultures that attempt to move into the future blindly are taking unnecessary risks. They support the proposition that we need to understand and apply foresight in our private, public, and professional lives.

From future shock to social foresight

Future Shock was the attempt of one individual to come to terms with change. But building the disciplines of futures studies and strategic foresight is quintessentially a group process involving many actors in many different places. The progression from individual to social capacity is crucial, and there are four "layers of capability" that can lead us there:

- **The brain/mind system.** Human beings are reflexive creatures and their frame of reference embraces past, present, and future. The ability to think ahead is grounded in this biological inheritance. People use foresight informally every day of their lives. This means that we do not have to introduce some new capacity, merely up-grade an existing one.

- **Futures concepts to enable a futures discourse.** Students who take futures courses for the first time find that the language of futures studies and foresight practice opens up the futures domain so that it becomes a symbolically vital realm of understanding and action. Futures literacy is created by active immersion in the material and the process of considering this with others. From this emerges a distinct futures discourse that enables the forward view.

- **Futures methodologies and tools.** But discourse has its limitations. In order to engage with real-world projects, statistics, extended problem analysis (such as the siting of a new road, airport or power utility) a variety of methodologies are used. Chief among these used to be forecasting. Today the focus is more on scenarios and strategic decision-making. These are two of a much wider set of methods that permit us to extend the discourse into new domains and to tackle complex, extended problems.

- **Applications of futures work in purpose built organisations or "niches."** But even with all three of these "layers of capability" functioning in concert, still there would be something missing. Futures work would merely be episodic, rising and falling with demand. So the final step is to embed such work in purpose-built organizational niches, or in what I call IOFs or 'institutions of foresight'?

With applied foresight work occurring in this powerfully grounded way in many social locations in organizations of all kinds we may reasonably expect to see the beginnings of social foresight. In systems language it would be an "emergent capacity" of all this work (Slaughter 1996a). Thus, 30 years later, future shock has been superseded by more structured and disciplined approaches to the creation of applied social foresight.

Futures studies, cyberculture, and the "real" future

Long-term immersion in the futures domain means that the future is no longer seen merely as an empty space or a blank screen upon which the concerns of the present are projected. It takes on positive symbolic content. One way to get a rapid impression of futures in prospect is to pose a number of key questions and then look for high-quality answers. For example:

- What are the main continuities?

- What are the main trends?

- What are the most important change processes?

- What are the most serious problems?

- What are the new factors in the pipeline?

- What are the key sources of inspiration and hope? (Slaughter 1996b).

In-depth answers to such questions begins to reveal the contours of the "real" future from the viewpoint of a particular observer/interpreter. One such reading is as follows. The globalization process is driven by powerful transnational corporations in pursuit of abstract goals such as: growth, innovation, profit, and shareholder value. These processes are not linked with any notion of social need or human value. Indeed, they have many negative human, social, and environmental impacts. They are stimulating the too-rapid development of a series of technological revolutions that threaten to destabilize all human civilizations and societies. Thus, in a nutshell, the most likely future for humankind at this point is a radically diminished one in a world that is mined out, depleted, polluted, and overwhelmed by technologies that we can neither see nor control. (See Broderick 1997 for an overview of the latter).

The central challenge of futures studies, foresight work, and, indeed, social and organizational decision-making in general, is to reveal the contours of this unacceptable world and to generate widespread social discussion about feasible alternatives. Alternatively, we can turn the problem on its head and ask: what are the contours of the next level of civilization, the one beyond the mental/egoic, capitalist/late industrial world of the early 21st century? More simply: how might a more positive future be framed?

Remarkably enough, there is a great deal of high-quality material that deals with these generic alternatives. The work of transpersonal synthesist Ken Wilber is paradigmatic. Wilber establishes an interpretive framework that is based on a "four quadrant" view of evolution. The four quadrants cover the following areas (Wilber 1996):

- **The inner individual world.** This is the inner world of reference of each person. It gives access to identity, feelings, emotions, ideas, meaning, and purpose. It provides an overview of individual stages of development.

- **The outer individual world.** This is the human being as known to science. It refers to those aspects that can be directly observed or measured. It is comprised of the structures and functions that enable biological life and awareness.

- **The outer collective world.** This is the rest of the external world as known to science, engineering, architecture, and so on. It embraces the external natural world and the infrastructure of the built environment.

- **The inner collective world.** This is quintessentially the world of reference of stages of social development, of worldviews, languages, professions, and the like.

Through an elegant usage of these distinctions, Wilber has established four profiles of evolutionary development and a method for understanding the likely "deep structure" of civilizations beyond the present one. This is possible because evolution continues in each of the four quadrants along a partly known path. Hence a post-postindustrial world would likely be a world that strove for balance between its different parts. It would be a multi-leveled world, postmaterialist but not anti-technological. Rather, technology would be required to adapt and "fit" clearly articulated human and social values. The main environmental ethic would be a commitment to stewardship. There could also be a re-spiritualization of worldviews and outlooks, as well as a distinct increase in the conscious capabilities of people and organizations.

The foregoing provides a context in which technology, cyberculture, and "the future" can be looked at afresh. Various writers have speculated on the existence of a "discontinuity" ahead as the overlapping developments in biotech, AI, robotics, the miniaturization of computing, and nanotechnology create wave after wave of disorienting change that can't possibly be modeled (Broderick 1997). Some speculate on the "uploading" of human consciousness into enormously sophisticated computer substrates and the potential for machine intelligence to overtake our own redundant biological models (Kurzweil 1999). But from the viewpoint developed here these responses look like technological narcissism, where parts of the human system become split off from the whole and lead to dystopian nightmare futures.

Thus, a central concern for cyberculture is that it skates so perilously close both to technological narcissism on the one hand and to nihilism on the other. The exploration of cyberspace, various "unreal worlds" by Gibson and his successors, would be less of a concern in the context of a shared moral and epistemological framework. But when that framework has been problematized by postmodernism, mass media saturation, and the rise and rise of compulsive global merchandising, it is legitimate to ask if the human race is in peril of undermining itself. That, perhaps, is the core meaning of the highly popular movie *The Matrix* (Slaughter 2001). At least three readings of the film are possible. One is a straight science fiction plot posing standard questions about "the real" and the possibilities of technological domination. Another is an extended homage to the action film/comic genre, albeit with some novel features (such as genuinely meditative scenes and a hero who transcends genre limitations). A third reading is to see *The Matrix* as a compelling postmodern fable, but one whose images, themes, and story lines lack coherence. Which resonates most directly with our hopes and fears for the future? All, or none? *The Matrix* poses many questions but answers few.

Conclusion

In the late 19th century a suite of cigarette cards was commissioned in Paris on "life in the year 2000" (Asimov 1986). It explored the universal applications of mechanical lever technology, the leading-edge technology of the time. In the early 21st century levers have all but disappeared. Few can be unaware that it is the computer that is now projected willy-nilly upon the future, along with all its manifestations. Yet we already know that the computer, as

such, is about to disappear from our desks into the virtual world of universal information appliances (Norman 1999).

For most of those involved in futures studies and applied foresight, however, the future is not about massive computing, AI, and a vastly expanded Internet. These comprise only a fragment of Wilber's four-quadrant view. The over-identification of technology with the future is a long-standing bias within Western culture. A more balanced view suggests that the "real" future is not primarily about technology at all. Rather, it centrally involves a search for new definitions of our shared humanity. In that context Vernor Vinge's "singularity" and Damien Broderick's "spike" provide only a partial view because they only deal with externalities. That is, they primarily focus on the outer collective domain and largely overlook the inner ones that are involved in the constitution of human and cultural significance. Similarly, Toffler's future shock thesis was partly helpful (in proposing social innovations) and partly diversionary (because it focused on external change, and missed the shaping power of self-reference possessed by all human beings).

Since the 1970s people all over the world have become aware of the need to anticipate likely futures, to avoid undesirable ones, and take greater responsibility for the direction of change. Many individuals have contributed to this process. Thus, Toffler's early formulations have been superceded by the development of futures studies as a discipline and the emergence of applied social foresight. The latter may be defined as "the construction and maintenance of high quality forward views and their application in organizationally useful ways."[1] Progress through the four layers of capability previously outlined suggest that social foresight will develop over time. It will be an "emergent capacity" of widespread human effort. The hitherto obscured futures domain will then become an integral part of everyday thinking, life, and work. Society's views of its likely futures will become thoroughly integrated into its present. Instead of falling into dystopia we will see the emergence of "deep design" in every field and a true flowering of human hope and aspiration.

It is for such reasons that shared attempts to develop more highly evolved forms of society and consciousness seem primary: a constructive approach to engaging with the "real" future has more to do with the pursuit of wisdom than the pursuit of, or avoidance of, any technological capability whatsoever. A possible resolution, however, is that both can be included in a higher order synthesis. Hence the keys to the future lie in seeking a balance between different aspects of humanity in its world: inner, outer, individual, and collective (Wilber 1996).

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