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Book review

Dennis Pirages, Ken Cousins (Eds.), From Resource Scarcity to Ecological Security: Exploring New Limits to Growth, The MIT Press, Cambridge Massachusetts, 2005

Human beings are an evolutionary experiment that may not be working out. Compared to the age of the universe, or of Earth, and of the origin of life on Earth – or of even the evolution of mammals – humans arrived only a few seconds ago.

But we have come a long way, baby. When we emerged, we were a very fragile and vulnerable species. No one would have given us much of a chance for survival, much less for dominance. But over the last forty thousand years or so, humans have indeed come to rival the cockroaches in numbers and pervasiveness. It is truly an amazing thing. How did we do it? It was a matter of foresight.

While recent research has surprisingly revealed that birds do it, bees do it, and we may eventually learn that even educated fleas do it, humans have mastered and utilized foresight in unprecedented ways. More precisely, we have developed information and communication technologies that have allowed humans to turn their foresightful dreams into reality in ways that (so far as we know now) no other animals on Earth have been able to do. It is that combination of purpose harnessed to technology that makes humans unique, if we are, but certainly globally dominant, and reaching eagerly out to the Moon, Mars, Venus and elsewhere in the solar system and beyond.

In the process of our rise to global dominance we have massively modified the environment within which we evolved and upon which we initially entirely depended. Modifying our environment is not a recent human development. The evidence now clearly shows that even the earliest humans tended to exploit their environment to exhaustion and then move on to other environments that they then used to exhaustion so that they had to move on again to other environments. When there were no new environments to move to humans either went locally extinct, or developed technologies that allowed them to exploit the environment in ways they had not been able to do before, and then to repeat that process of expansion, exhaustion, migration, technological innovation, or extinction with the consequent rise (and sometimes fall) in human population locally and globally, and with ever more powerful and environmentally-intrusive technologies.

While we have always, as a species, been much more destructive of our environment than most other species, for most of our earthly existence it really did not matter since “nature” was so vast and humans so few and puny. But several thousand years ago that began to change when, as a consequence of the invention of writing and all the subsequent social and mental developments that ensued from that, we became able to organize ourselves and to exploit our environment in ways we were not able to do via speech alone. Subsequent technologies—I think most importantly in communications which led to the other inventions and interventions—pushed and pulled humanity and the environment to where it is now-facing extinction (or at least substantial die back) at a global level for the first time, with no effective place

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to migrate (Bush's plans for Mars to the contrary notwithstanding), and thus with all hope placed in technologies that will, like the cavalry, rush over the horizon of the future at the last minute to save us all so we can go on to dominate and exploit, worlds without end.

Humans have only been aware of any of this for about a hundred years. Until forty years ago only a literal handful of humans were truly concerned with it even then. During the 1950s, 60s, and 70s the recognition of "the future as a way of life" (as Alvin Toffler cleverly put it) and of humanity's overwhelming impact upon the environment began to dawn on more people. Depending on who they were and what stake they had in the various games of life, they either became alarmed at the future of some things (while oblivious of others) or else they became defensive if not downright hostile to the alarm-sounders, assuring everyone that the concerns were without serious merit and that Man would prevail.

Futures studies emerged during this time with its feet firmly planted in both camps. Some of the earliest futurists were environmentalists (such as Harrison Brown, Rachel Carson, Paul Ehrlich, and Barbara Ward), while others (such as Arthur C. Clarke, John Diebold, Buckminster Fuller, Yujiro Hayashi, Herman Kahn, Hahn-Been Lee, and Alvin Toffler) were techno-optimists [To be clear, futures studies had more than two founding feet. Early futurists like Pierre Teilhard de Chardin, Bertrand de Jouvenel, Barbara Marx Hubbard, Eleonora Masini, John and Magda McHale, Margaret Mead, Frank Polak, and others were focused more on cultural, political, and spiritual issues.].

The point here is that while human activities have influenced the future of Earth for millennia, humans are very new at vaguely understanding this fact and even more tardy in considering how to think and act responsibly towards future generations. For almost all of human history, there was, in effect, no future — humans lived in what seemed to be an eternal present (though change actually happened, as I pointed out in one instance above, it was difficult to notice and especially to record and thus to ponder the significance of it). Thus most cultures developed mores that assumed that whatever seemed to work in the past and present would probably work in the fabled "seven generations" of the future.

Then, beginning only a few hundred years with the so-called "scientific-industrial revolution", "progress" became the official image of the future everywhere in the world. The future was still singular and clear, though for the first time the future was discontinuous and thus different from the past and present. It is only in the last few decades that some few persons (and only a very few, even among futurists) have come to realize that there is not "one" future, but rather many alternative futures ahead. Most humans still cling to the old and once-valid belief that it should be possible to "predict" the "most likely future", and that after having discerned it, to move confidently towards it. We can hardly be blamed for this naïve ignorance since we are so new at this whole futures enterprise, but it has caused some problems.

There were several wake-up calls sounded in the early 20th Century which initially woke up almost no one, but when Rachel Carson published first *The Sea Around Us* (1960) and then even more dramatically *Silent Spring* (1961), more humans woke up to the possibility of a future that was not "better" (because of "progress") but worse. *The Population Bomb* (1968) by Paul Ehrlich was the next in the series. But the biggest bombshells in the battle for the future were those sparked by the Aurelio Peccei's book *The Chasm Ahead* (1969), his founding of the Club of Rome, and then his funding of the *Limits to Growth* (1972) study based on pioneering "system dynamics" computer modeling programs developed by Jay Forrester. *LTG* was the intellectual bomb that exploded with the maximum impact on human awareness worldwide. Almost every newspaper, magazine, or scientific journal anywhere in the world had an article by Donella or Dennis Meadows, or in reaction to their work.

In spite of many other reports by the Club of Rome based on computer modeling, none had the impact the *LTG* did. Indeed, the second and, as it turned out, last big boom of environmental concern was *The Global 2000 Report to the President* (1980) which was commissioned by President Jimmy Carter and compiled by Gerald Barney. The huge volume, full of charts and graphs from all over the world, came to a very gloomy conclusion about the future of the environment. Many kinds of preventive and ameliorative action were called for.

However, the report, which was initially published by the US Government Printing Office as an official government document, arrived just after Ronald Reagan took over the presidency, and distribution of the document was basically suppressed since it represented ideas the Reagan administration did not favor. Instead, Herman Kahn and his colleagues in the Hudson Institute and others began a concerted and well-financed set of activities aimed at counteracting the effects of the *LTG*, the *Global 2000 Report*, and other environmental doomsaying. Two influential publications were Julian Simon's *The Ultimate Resource* (1981) and especially *The Resourceful Earth* (1984) edited by Julian Simon and Herman Kahn. Authors of the chapters in *The Resourceful Earth* sought explicitly to demonstrate that the concerns of the *LTG* and *Global 2000 Report* were wrong, and that the future was basically in good hands now, as long as we did not do the dangerously stupid things the environmentalists proposed.

It is clear who "won" this battle: The Hudson Institute led to the Heritage Foundation which was the major think tank in back of Reagan and Reaganomics which then led to The New American Century Project which was the think tank in back of George W. Bush. While there have certainly been many affirmative actions taken on behalf of the environment since Jimmy Carter's days (though many more were begun earlier under Richard Nixon), I would conclude that the techno-optimists have won all the major battles as far as environmental and related policies and actions in the US are concerned.

I need to make my own position in this conflict clear. While I shared and expressed many of the concerns of the early environmentalists, I was basically a techno-optimist in the early days. I was absolutely certain that given what we could do technologically and the seriousness of the consequences if we did not, we would act quickly and appropriately, and thus that the future was bright. I wrote some pieces to this effect in opposition to *LTG*, and actually spent two years (1974–76) working with the Ontario Educational Communication Authority and others in Canada developing television and other projects in support of their nationwide "Conserver Society" project. However, my focus then was mainly to temper the intensity of their environmental fervor with some techno-optimism about the future. The intent of the Canadian government's project was to turn Canada from an energy and resource wasting "consumer" society into an energy and resource saving "conserver" society. While the intention was basically good, I thought they were being too restrictive and unimaginative about it. But I completely failed to understand the power and appeal of rightwing futurism. I obviously was not a very good futurist—or even political scientist—myself since I thought reason and concern for future generations would surely win out over greed and self-centeredness.

But it is not the battle of the words that is important. It is what the environment is really like now, compared to what were the concerns of the 1970s, and, even more importantly, what the environmental situation is likely to be thirty and more years from the present.

This is what *From Resource Scarcity to Ecological Security: Exploring New Limits to Growth*, compiled and edited by Dennis Pirages and Ken Cousins, seeks to do — assess what was right and what was wrong about the concerns expressed by *LTG* and *Global 2000*. Ten chapters (many with multiple authors) survey the past thirty years and (roughly) the next thirty years in global population, water, food, energy, climate change, forests and biodiversity. Each of the essays is comprehensive, evenhanded to a

fault, and mildly optimistic. There is no hysteria but neither is there any great sense of urgency. There is a scholarly balance. Though there are some pretty grim statistics and statements, one gets the overall impression that things are basically under control.

Each chapter identifies the areas of concern in the early 1970s and describes briefly the state of those factors at that time. Each then presents what the data showed the situation to be for those factors in 2000 (or thereabouts). What do they conclude?

While global population has grown almost as anticipated, the rate of global population growth has declined far more than expected, and in most developed countries (the US being the major exception) and even in some developing ones, the “problem” now is declining population and aging. Population growth is not a major global problem in the future though it is a problem for some localities.

Water use is lower than projected and while there are some severe local shortages, water is not the major global problem that was anticipated, and will not be if properly managed and priced.

Similarly, while there were forecasts in the 1970s of global famines, in fact we have had agricultural surpluses even in the countries most endangered in the 1970s. No major problems appear on the horizon as long as global population growth continues to slow or decline, as it probably will.

Finally, fossil fuels are still in sufficient supply for renewable energy sources to come online before fossil fuels run out, as they will.

These conclusions are not stated exuberantly, and many caveats and uncertainties are presented, but the feeling that I came away with after reading these chapters is that the environmental concerns of the 1970s were exaggerated and that the future can still be very good as long as we continue doing the right things, as we can and should.

However, the authors do present some areas of concern, primarily as a result of global climate change (which they take seriously), deforestation, and especially loss of biodiversity. Still, on the basis of their stories, there appears to be no reason for panic or heroic efforts even here. Things are more or less under control.

Some authors in various chapters mention things that were of major concern in the 1970s that have proven to be absolutely unimportant after all. The most dramatic was the (false?) concern with climate cooling. Being a Hawaii boy and not really understanding “winter”, I vividly remember seeing pictures in Toronto newspapers showing Canada and much of the northern US covered in glaciers as a result of a coming new ice age. Similarly, concerns about running out of certain important minerals and materials proved false as “dematerialization and substitution” (and the 1980 global recession) lowered our dependence on them.

On the other hand, several authors note that there was no concern expressed in the 1970s about biodiversity loss (the term apparently not even having been coined until 1985), and nothing was said about the emergence of new diseases (the 1970s being the beginning of a period when some people began to believe that death might be a curable disease).

The overwhelming message in each chapter in this volume is that politics and economics are far more powerful than are appeals to “nature”, new technology, or reason. I apparently was not alone in believing in the 1970s that simply informing people of the urgency of major technology-assisted changes – and the many advantages those technologies and changes would bring to everyone – would result in the necessary

and desirable changes well before 2000. But there is more to it than even this. Even people who tried to rise above politics and self-centered economics made mistakes because all humans are so new at trying to take responsibility for the future seriously. We live in an extremely volatile world the totality and interactivity of which we do not begin to understand with any accuracy. Each of us tends to look at the world through sharply-focused glasses that let us see only what we have been trained to expect to see. It is very difficult – if not presently impossible – to see the world in all of its interactive complexity, much less to anticipate successfully the consequences of all of our actions and interactions in shaping the future.

About five years have passed since most chapters of this book were written (judging by the references, though some chapters are more closely current with the 2005 publication date) so it is interesting to see what the authors themselves got right and wrong, and what they omitted that seems essential now.

One thing that they clearly got right is global warming. Though the Bush administration is still unmoved, even a report of a handpicked administrative study group acknowledged in May 2006 that anthropogenic global warming is real, serious and urgent.

There are several issues that the authors might now want to express differently or simply to discuss, since they were ignored:

One of the most urgent issues (which the authors did mention, but in passing) is “Peak Oil”—the concern that even with new discoveries and improved drilling, oil will become progressively more scarce and expensive, and that it will take more and more energy just to produce any energy at all. And that while renewable energy sources exist in theory and sometimes in reality, there do not seem to be enough of them available now or in the foreseeable future to prevent significant disruptions within the next few decades, more and more experts fear.

The world basically “eats oil”. The agricultural practices that averted famine in the past resulted in large part from efficiencies produced by oil-fed mechanical and chemical processes. Thus the future of food may be much more in doubt than authors in the *Pirages and Cousins* book acknowledge. Moreover, several authors do observe that one reason food and water scarcities projected in 1970 did not happen by 2000 is because billions of people were allowed to starve and to be without potable water. In 1970, it was generally assumed that people would be fed and watered as needed. But instead they have been left to die or sicken since they fail to have the “effective demand” the “free market” economy requires. One reason water consumption now is less than projected (and food more abundant) is that while many people want and need water and food, they can not pay for it where and when they need it.

I am not as sanguine about the future of global population as the authors (and many others) are. *Global 2000* saw birth rates remaining high. Now they are low. The authors here see the rates as remaining low where they are low and decreasing where they are still high. The reason for this change in fertility is generally said to be women’s education and economic development that together cause “the demographic transition”. It is assumed these factors will continue to cause low fertility. But just as population growth rates declined faster than many people anticipated in the past, it is dangerous now to assume that they will continue to decline and will not rise again. Policies and appeals are already being made in many countries to convince women to have more children, and it would be folly to assume they will be unsuccessful. It is useful to recall that one of the trends most techno-optimists were rather confident about in the old days was increasing rationality and secularization, and the decreasing

influence of superstition and religion. Indeed, at the same time some scientists were worried about impending global cooling (they actually may not be wrong, however), others were crowing that “God is Dead”. Few anticipated the rise to absolute political dominance of religious, economic, political and cultural fundamentalism in the United States and many other parts of the world. Similarly, some futurists have long expected the demise of the nation-state, but 9/11 reignited supernationalism in the US and by imitation in many other parts of the world. And while Europe seems to be immune to these factors now, prenatal and nationalistic forces are by no means inoperative there.

As Garrett Hardin used to say in another context, “trends are not destiny.” It seems to be a human characteristic to believe that the future will be “whatever is happening now” extended. But even history shows repeatedly how that has not been the case in the past, suggesting that it is a dangerous assumption for the future.

Turning now to what the authors of *From Resource Scarcity to Ecological Security* did not discuss, one important omission concerns the serious depletion of fish stocks and other marine resources as a consequence of unregulated, energy- and technology-intensive fishing practices. Ocean pollution is also ignored.

Two social factors also are not discussed. This may be understandable in a book devoted to environmental and resource issues but nonetheless it does seem necessary for them to be considered in order to have a fuller picture of what the future of the environment and resources might be. One omission is the matter of massive and growing debt – personal, corporate, and national – that already seriously prevents many so-called “advanced” nations from addressing future problems and opportunities. “Developed” societies assume that “the market” will always guarantee the existence of the energy and other resources necessary to grow materially-forever. Thus, debt is said to be permissible since there will always be more wealth in the future to pay off the debt. Now it is not clear to many that future generations will be able to pay for the debts we are leaving them.

The second undiscussed issue is “terrorism”. I do not mean that “terrorism” is actually a threat on par with the environmental issues under discussion. To the contrary. Rather, I mean that because “terrorism” (like the old “Cold War” for decades before it) is being used as an excuse to waste precious resources – including dwindling energy resources – in an endless and provocatively-ignited “war on terrorism”, our abilities to address the opportunities and challenges of the future are even more restricted than they need to be.

But as I said, who can blame us? We humans are new to this futures business. We are doing the best we can. If by some miracle we are able somehow to muddle through the 21st century without exterminating ourselves, we might begin to learn enough to “govern evolution” as Walter Truett Anderson some time ago said was our challenge. The many authors of *From Resource Scarcity to Ecological Security* deserve our thanks for the great service they have provided in this volume. Now it is our reciprocal obligation to keep learning more, and acting more responsibly towards future generations, if we will and if we can.

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