

Beyond the Threshold – Overviews of 14 Climate Change Related Works

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Introduction

In early 2009 Sean Hargens of the Integral Institute, Denver, put out a call for papers for the *Journal of Integral Theory and Practice* (JTIP). An issue was being planned to coincide with what I considered to be a highly significant meeting to be held in Washington DC in November.¹ This conference brings together two of the most productive strands of forward thinking anywhere. One is that represented by what might be called the ‘state of the world tradition’ long headed by Lester Brown and based at the World Watch Institute in Washington.² The other is that of the Integral tradition that springs from the work of Ken Wilber, the Integral Institute³ and a significant number of practitioners around the world who’ve taken up and applied this perspective. In other words this issue of JTIP would provide an opportunity to demonstrate just what Integral approaches could bring to the table in the context of a deepening world crisis and with particular reference to climate change.

So I set about reviewing a number of works that I felt had something useful to say about climate change and global warming which are two of the central themes of the conference. The first draft, however, was twice the length required and had to be significantly reduced in size. The solution was to take out all the material reviewing content and place it where it could be easily found. This document is the result.

I selected each work according to my assessment of their originality and contribution to the wider debate. At the suggestion of my friend Adolph Hanich, I also placed them in the order by which they were published, beginning with Will Steffan (et al’s) powerful work *Global Change the Earth System: a Planet Under Pressure* from 2004. In each case I tried to summarise key ideas and also highlight omissions. The task was both appreciative and critical. What emerged is a tapestry of insight, the overall product of hundreds of keen minds that each author has, in turn, drawn upon. It’s notable also that no single author covers the entire territory, and this should not surprise us. As is well known in Integral circles “everyone has part of the truth” and yet “ not all truths are equal.”

I should also add that in carrying out this work I have come to believe that humanity is already committed to a collective future that is very remote from what it currently believes likely or would have chosen if it had had the chance to do so. Global warming

¹ The State of The World Forum – Mobilising to Save Civilisation. Further information can be found at: <http://www.worldforum.org/state-2009.htm>

² <http://www.worldwatch.org/>

³ <http://in.integralinstitute.org/>

provides a profoundly severe challenge to the very existence of advanced civilisation per se. It is a largely (but not wholly) unanticipated product of unconstrained growth and development out of an industrial worldview itself intertwined with an economic system that ignored the global environment and rendered it as merely a set of resources for transformation and consumption. While various warnings about where this would likely lead rose to a crescendo during the 20th century these warnings were mostly ignored by the rich and powerful. The result is runaway climate change that challenges every human society to its core. The further ‘twist’ is that the price of these historical and cultural oversights would be paid by our children, theirs, and by future generations. If clarity precedes effective action then part of our task therefore becomes to strive for clarity at every level and in every conceivable domain.

Part of that drive for clarity involves opening out and exploring another, very different, option. As the penny drops and humanity comes to understand the nature of the futures in prospect it can choose to take a different path. It can put aside ancient enmities and collectively rise to what I call the ‘civilisational challenge.’ What emerges from this review of climate change literature is, I believe, new clarity about just what that involves. Here are many pointers not only for external innovation and change but also in the widely overlooked interior worlds from which they ultimately spring.

Steffen, W., Sanderson, A., Jäger, J., Tyson, P.D., Moore III, B., Matson, P.A., Richardson, K., Oldfield, F., Schellnhuber, H.-J., Turner II, B.L., Wasson, R.J. **Global Change and the Earth System: A Planet Under Pressure**, Springer Verlag, Heidelberg, Germany, 2004

For many years the Meadows team (eg, Meadows, 2005) has offered an increasingly authoritative perspective on the phenomenon of growth – especially exponential growth – and its impacts on the wider global system. At the same time economists and politicians have generally continued to see such growth as a positive good. Now the debate is changing as some types of growth become ‘dematerialised’, with a consequent reduction in certain impacts but not others. Yet overall, humanity continues to expand its collective ‘footprint’ to even the remotest areas, further undermining its own existence. In order to come to terms with this and to understand the significance for decision-making across the board, a much deeper understanding of the global system is needed. What this book offers is just the kind of summary and overview to balance and extend the work of Meadows and other more popular accounts.

The book draws together the results of a multi-team International Geosphere Program (IGP) headquartered in Sweden. Here is a summary from the pre-launch overview.

‘The interactions between environmental change and human societies have a long, complex history spanning many millennia, but these have changed fundamentally in the last century. Human activities are now so pervasive and profound that they are altering the Earth in ways which threaten the

very life support system upon which humans depend. This book describes what is known about the Earth System and the impact of changes caused by humans. It considers the consequences of these changes with respect to the stability of the Earth System and the well-being of humankind; as well as exploring future paths towards Earth System science in support of global sustainability'.

Further information can be found at: <http://www.igbp.net/booklaunch/book.html>

Diamond, J., **Collapse: How Societies Choose to Succeed or Fail**, Viking, NY, 2005

While *Guns, Germs, Steel* used comparative studies of earlier societies to understand how they were differentially built up and established, *Collapse* focuses on how they either survived or broke down. Eight factors are held to have been responsible for past breakdowns: deforestation and other habitat destruction; soil erosion, salinisation and loss of fertility; problems with water management, overhunting, overfishing and the effects of introduced species; and finally, contributing to all of these, overpopulation. Four additional factors are added that will affect our own prospects. These are anthropogenic climate change, toxins in our environment, energy shortages and, again, population growth.

The bulk of the book is a compendium of case studies showing how these factors operated at different times and in different places. *Diamond's hope is that in understanding the past we may be clearer about the causes of collapse and act more decisively to prevent it.* Thus the last three chapters are devoted to the 'practical lessons' that have emerged. He asks 'why do some societies make disastrous choices; how does big business relate to the environment; and finally, what does it all mean for us today?

Among the reasons cited for societal bad choices are the:

- failure to anticipate a problem before it arrived;
- failure to perceive a problem after it has arrived; and,
- failure to solve a problem after it has arrived and been recognised.

Reasons for these failures also have multiple explanations including: perverse subsidies, inappropriate responses to the 'tragedy of the commons' (ie., over-exploitation of commonly owned resources) and the overextension of values or, conversely, adherence to currently disastrous ones. In addition various psychological factors are mentioned including 'crowd psychology and the varieties of human denial. Some cogent observations are made here but he skips fairly lightly over this territory. In Diamond's hands, big business is treated with restraint. He considers positive example of constructive, long-term thinking and also areas such as agriculture and ocean fisheries where unsustainable practices are legion. Yet rather than blame business per se he holds 'the public' responsible for actively or passively acceding to business practices.

The final chapter, however, puts aside any residual doubt about where Diamond stands. It summarises a dozen familiar global concerns such as the loss of natural habitats and the steady decline in genetic diversity, various environmental insults, water and energy shortages, chemical pollution, climate change and continued growth in the human population. He concludes, as others have, that:

Our world society is presently on a non-sustainable course, and any of our 12 problems of non-sustainability that we have just summarised would suffice to limit our lifestyle within the next several decades. They are like time bombs with fuses of less than 50 years. (P. 498).

He is also clear where the main responsibility lies: ‘the prosperity that the First World enjoys at present is based on spending down the environmental capital in the bank’ (p 509). In this view there is no longer any room for debate about whether past collapses have modern parallels and associated lessons. Rather, ‘such collapses have actually been happening recently, and others appear to be imminent. Instead, the real question is how many more countries will undergo them.’ (P. 517) Given all this work, and especially the in-depth examination of a dozen or so case studies, the grounds for hope that Diamond offers seem to me to be rather slender. Here is a summary.

- Because we are the cause of our environmental problems, we are the ones in control of them, and we can choose to stop causing them and start solving them. (P. 521)
- Courage to practice long-term thinking, and to make bold, courageous, anticipatory decisions at a time when problems have become perceptible but before they have reached crisis proportions. (P. 522)
- Courage to make painful decisions about values...e.g., how much of our traditional consumer values and First World standard of living can we afford to retain? (P. 523-4)
- The fact that past societies lacked archaeologists and television, whereas today TV documentaries and books show us in graphic detail how past societies collapsed. (P. 525)
- Thus we have the opportunity to learn from the mistakes of distant peoples and past peoples. (P. 525)

Perhaps the greatest value of this book is the way it places our current civilisational dilemma in a long-term historical context, drawing out lessons of undoubted value to inspire understanding, decision making and action. This is a valuable gift that should not be under-estimated. In the process the author has also identified other areas that call for other areas of expertise and knowledge, including how to:

- operationalise some of the suggestions here, to have them socially enabled;
- improve group and national decision making;
- define and adopt values that will support sustainable innovations across the board;
- resolve a variety of psychological barriers and constraints; and, overall,

- shift the over-heated global megaculture away from its current overshoot and collapse path.

Meadows, D., Meadows, D., and Randers, G., **Limits to Growth: the 30 Year Update**, Earthscan, London, 2005

Of all the books summarised here, this is one that most deserves to be understood, its basic message propagated until the ideas and suggestions it contains become common knowledge. The book presents what the authors refer to as 'pervasive and convincing evidence that the global society is now above its carrying capacity.' They acknowledge that:

the idea that there might be limits to growth is for many people impossible to imagine. Limits are politically unmentionable and economically unthinkable. The culture tends to deny the possibility of limits by placing a profound faith in the powers of technology, the workings of a free market, and the growth of the economy as the solution to all problems, even the problems caused by growth. (p 203)

The bulk of the book is devoted to reviewing criticisms of the earlier books, considering changes in the World3 model, testing assumptions and showing very clearly why they believe humanity is already living in 'overshoot' mode. Though dealing with some very heavy issues indeed, it avoids being either shrill or defensive. The authors are clear about their values and open about their methodology. They intend to open out new possibilities for understanding and dealing with the global predicament. In particular they suggest a number of ways to avoid overshoot and collapse of natural systems. These include:

1. Growth in population and capital must be slowed and eventually stopped by human decisions enacted in anticipation of future problems rather than by feedback from external limits that have been exceeded.
2. Throughputs of energy and materials must be reduced by drastically increasing the efficiency of capital (de-materialisation, lifestyle changes etc).
3. Sources and sinks must be conserved and, where possible, restored.
4. Signals must be improved and reactions speeded up; society must look further ahead and base actions on long-term costs and benefits.
5. Erosion must be prevented and, where it already exists, slowed and then reversed. (p 178)

Clearly this amounts to a nearly impossible program for societies as they are presently constituted. There is simply insufficient broad understanding within society as a whole and, as a result, no political will to ensure that necessary actions are taken in time. Recognising this, the authors also consider what they call 'transitions' to a more sustainable system. They note that there are three ways that the human world can respond to the signals that environmental limits are being exceeded. These are:

1. deny, disguise or confuse the signals;
2. respond by alleviating the pressures through technological fixes; or
3. work on underlying causes and change the structure of the system. (235-6)

At present, it has to be said, the preferred response is 1, followed by 2. Again there is no prospect of approaching the latter at the present time. The conclusion must be that experience will continue to be a more effective teacher than foresight, and that is not good news for the human species.

Lovelock, J. **The Revenge of Gaia**, Allen Lane, London, 2006

James Lovelock is well known as the originator of the Gaia hypothesis, the notion that the Earth is a self-balancing system in which all the elements of nature work together to maintain global equilibrium. To some it is a metaphor and to others a useful way of thinking about an integrated planet. What is certain is that the science underlying this view has become clearer over the decades since it was first aired and provides growing support for it.

In this book Lovelock draws on recent science to propose that humanity is now faced with its greatest challenge ever – to restore the balance between it and the Earth or be mercilessly pushed to the margins. In his view global warming (here called global heating) from rising levels of CO₂ in the atmosphere will raise global temperatures by as much as 6 to 8 degrees centigrade and, in the process, trigger abrupt and irreversible climate shifts. Among them are the melting of the polar ice caps, the 'switching off' of the Gulf Stream that warms western Europe, abrupt shifts in rainfall patterns and the rendering of large tracts of land unproductive and uninhabitable. Sea levels will rise such that coastal cities and large numbers of people will be displaced. Overall, there will be 'a climate storm the Earth has not seen for 55 million years'. (p 105)

Perhaps the most pressing concern is that the human species has become complacent about its place upon the earth and takes seriously neither its current impacts nor where these will lead. As Lovelock notes 'our journey into the future is amazingly unprepared'. (p 155) Yet enough is now known about the global system, and about how it functions, to provide us with clear warnings of what lies ahead and perhaps time to deal with it. Business-as-usual thinking no longer makes any sense in this context and is seen as evidence of the inertia of the industrial outlook. If it remains in place then 'our species may never again enjoy the lush and verdant world we had only a hundred years ago'... and ... 'few of the teeming billions now living will survive'. (p 60).

The author adds several new ideas to the developing debate about these matters. First, he asks us to set aside notions of 'sustainable development' and so-called 'renewable' energy sources. In his view both are little more than 'romantic dreams'. In one of the most outspoken passages he writes that:

our religions have not yet given us the rules and the guidance for our relationship with Gaia. The humanist concept of sustainable development and the Christian concept of stewardship are flawed by unconscious hubris. We have neither the knowledge nor the capacity to achieve them. We are no more qualified to be the stewards or developers of the Earth than are goats to be gardeners. (p 137)

Second, he argues forcefully for a re-consideration of the possible role of nuclear energy which, in his view, has been too-readily demonised and dismissed but is the only source of energy that, in the absence of fusion power, will be able to provide base-load electricity for the foreseeable future. In this respect he parts company from most other observers who broadly identify with the environmental movement. Third, he proposes a value change that goes to the heart of the relationship between the species and the planet. He asks us to think of Gaia first and to place humanity second. That is, to reverse the deeply inscribed habits, ways of thinking, operating procedures and the like that have guided human behaviour over millennia. In part this means that 'we have to make our own constraints on growth and we have to do it now'. (p 142) It must be said that the prospects of achieving either of these in the next decade or soon thereafter appear remote. What therefore to do? There is a small ray of hope and it is inherent in the following statement:

We need the people of the world to sense the real and present danger so that they will spontaneously mobilise and unstintingly bring about an orderly and sustainable withdrawal to a world where we try to live in harmony with Gaia. (p 150)

The prospects for achieving radical change of the kind Lovelock (and others) call for by rational means: by persuasion, advocacy, policy debates, the democratic process and 'public participation' are all clearly inadequate and will fail. But the clear perception that the human race is shutting down the wellsprings of life on the planet, destroying its life-support systems and interfering in the great cycles of matter and energy to the point where its own survival is increasingly at stake, takes us into new territory. What if, instead of labelling disastrous futures as mere 'gloom and doom' we openly acknowledged the reality of what collectively stands before us: an uninhabitable world and the end of the human species as we know it? What then? We might just uncover the sources of insight, strength and motivation to prod us into making some of these deep-seated and systemic changes in self-concept and in how we live and relate to the rest of the world. Those standing for the status quo will dismiss this book out of hand but more reflective persons may see it as another indication that profound changes are under way that require considered human responses at every level.

Monbiot, G. **Heat: How to Stop the Planet from Burning**, Allen Lane, London, 2006

Heat is an attempt to find a pathway for the UK to reduce carbon emissions by 90% by 2030 in order to avoid runaway global warming. Monbiot is an idealist and a social reformer with deeply felt and clearly expressed progressive values. His book is well researched and has been well received by those who are open to its message. It has also generated contempt from those who see here only a new kind of totalitarianism. Some of the strategies that are required include:

- dramatically improved ways to build homes and other buildings;
- a mix of renewable and non-renewable means of energy supply;
- drastic changes to land transportation systems;
- a severe curtailment of air travel; and,
- a 90% reduction in greenhouse gas emissions by the retail and cement industries.

In the book Monbiot quickly distances himself from technophiles, radical greens, fatalists and market ideologues. While he does see a central role for the deployment of new technologies he is also clear that government regulation and enforcement will be essential if the plan is to succeed. And this, it turns out, is the ‘great unsolved problem’ of our time because there appears little prospect of any government anywhere on Earth being able to carry an agenda even remotely like this one forward for one key reason: no government currently has anything like the social sanction to do so.

A central aspect of Monbiot’s proposed solution sets aside carbon credits and trading systems - which are seen as inadequate and too slow - in favour of carbon rationing. (Spratt and Sutton take the same view in their 2008 book *Climate Code Red*.) This would involve creating a new ‘currency’ that would involve providing 40% of the national carbon allocation to each person for basic electricity and the remaining 60% to government. The latter would be sold off through an open market to the highest bidders, e.g., corporations. There would also be subsidies to facilitate improvements in the efficiency of home appliances and public transport and also for emergencies.

A great deal of effort is expended in considering strategies in each of the areas outlined above. For example, he suggests that it would be possible for the UK to produce all the electricity it needs but with a 90% reduction in carbon emissions by adopting a mix of:

- scrubbed natural gas burning generators;
- wind energy, in many cases from remote areas;
- electricity transported by high voltage DC lines; and,
- a mix of hydrogen furnaces and home based cells.

Transport is one area in which drastic changes are foreshadowed. There would, for example, be a huge reduction in the use of private cars in favour of express bus-only lanes and high-amenity buses to run on them for medium and long distance travel. But there are apparently no such solutions for air travel short of a savage 90% reduction in flights. This obviously raises serious questions about social and political acceptability.

Energy experts have questioned the detail of some of these strategies and some of the assumptions on which they are based. One, however, noted that no individual could be expected to ‘get everything right’ and that Monbiot had at least started the ball rolling. (Lipow, 2007) Where that ball might roll to, however, is problematic. The nearest that Monbiot comes to a social / political strategy is to recommend that individuals subscribe to what he believes will become a global activist political movement that will arise in response to global warming.

From an Integral point of view Monbiot’s attention is clearly directed to the LL and the LR domains. He does not really address the UL and the UR and should not be criticised for this. Rather, it is helpful to consider some of the questions that arise from his efforts that call for other efforts to be made in these latter domains. Here are some suggestions.

1. Rapid transition psychology
2. Leadership and communication skills
3. In relation to global warming, where do the social tipping points lie?
4. How can individuals move from passive to active responses?
5. Are social / political movements the best way to influence governments and, if so, how?

Even from such a brief list it is clear that Monbiot’s work evokes another agenda that also needs to be understood and brought into play.

Hamilton, C. **Scorcher: the Dirty Politics of Climate Change**, Black Inc, Melbourne, 2007

This book sat on my shelf unread for perhaps a year or more. When the time came to read it the Howard government had fallen and the Rudd government, a very different kettle of fish indeed, was in office. So *Scorcher* became an historical document and an exceptionally useful one at that.

Living in Australia during the ‘Howard years’ was, for many Australians, not unlike living in the US during the corresponding period of the Bush administration – an almost schizophrenic time of internal conflict and unending frustration. How could these two nations hope to be respected in the world when they’d signed on for a phoney war and fought tooth and nail against the fledgling attempts of humanity to come to grips with global warming through the Kyoto treaty?

Late on during these weary years an ABC Four Corners program tackled the issue of what it called the ‘Greenhouse Mafia’ – an obscure group of coal industry operatives that, apparently, had unusual access to the policy-making apparatus of government. Moreover, it appeared that they had even helped write energy policy in ways that benefited them and, in so doing, eviscerated early attempts to develop renewable energy sources. This much was therefore public knowledge when I commenced *Scorcher*. What I then learned,

however, was just how completely the work of government had been undermined and compromised by these special interests and what a shameful period we had thankfully left behind.

Hamilton's research shows how the Howard government allowed 'big coal' to run the show for close to a decade, leaving Australia years behind in the race to develop energy alternatives. Moreover, he also shows in some detail how the same government actively attempted to undermine the Kyoto agreement while, at the same time, pretending to be responding to climate change in other ways. In *Scorcher* the whole shadow play is exposed for what it is – a shameful display of government ineptitude and deception.

The value of the book now is two-fold. First, Australians can face the world and admit that their government had fallen so very far short of what they expected and deserved. Second, having such a lucid and blow-by-blow account of what actually happened will make it much harder for this kind of corruption to be repeated. *Scorcher* is a salutary tale of what can happen, even in open and liberal societies, when those 'at the top' get carried away by ideology and power. It would be reassuring to think that such threats are behind us. The fact is, however, that ideology and power remain very much with us, along with a largely supine and commercially dominated media that, on the whole, still does not understand how the entire human enterprise is still being undermined by impulses and dysfunctions of this kind.

Brown, L. **Plan 3.0: Mobilising to Save Civilisation**, Norton, New York, 2008

Lester Brown is a well regarded US activist and writer who, over the years, has produced many volumes about the global predicament. In some ways the current work can be seen as a culmination of a life's work in that it attempts a 'great diagnosis' that seeks to 'save civilisation'. There is indeed much to praise about this book. It clearly springs from progressive values, is informed by an extensive knowledge of global systems and is written with energy and determination. If only it were possible to see even a small part of Brown's progressive agenda taken seriously and implemented, especially in the US. If only...

Part 1 documents 'a civilisation in trouble' and runs through all the usual issues. Part 2 deals with 'the response'. Again, the issues are familiar: eradicating poverty, stabilising population, Earth restoration, food supply, the design of cities and renewable energy. The final chapter deals with 'an exciting new option' which is also described as 'the great mobilisation'. Here Brown comes to the nub of his argument. He writes:

There are many things we do not know about the future. But one thing we do know is that business as usual will not continue for much longer. Massive change is inevitable. Will the change come because we move quickly to restructure the economy or because we fail to act and civilisation begins to unravel? (P 265)

Although this is the central question of the book it remains unanswered. Indeed, the only way to answer it is to look deeply into the socio-cultural domain and to bring forward the ‘solutions-in-waiting’ that await discovery there. But Brown is at heart a principled empiricist. He sees the world in all its rich external complexity but overlooks the human and cultural interiors. This allows him to write an erudite and compelling story about ‘what needs to be done’ without really engaging with the sources of insight, motivation and value from which such actions may proceed. Moreover, the book falls into the very familiar pattern of a US writer operating out of a taken-for-granted cultural context and failing to show more than a token appreciation of how that context shapes his perceptions of the world. While there are indeed some criticisms of, eg, US energy policy and the war in Iraq, a clear-eyed critique of the culture from which they spring is entirely missing. If an up-date of this book is ever produced an in-depth analysis of how the usual operations of the US of A are themselves powerful drivers of unsustainability would make it far more convincing and useful.

Flannery, T. Now or Never? **Quarterly Essay #31**, Black Inc., Melbourne, 2008.

Somewhere I have a copy of a book called *The Way Out: Radical Alternatives for Australia*. Its main theme is that the commune movement of the 1960s provided an escape route from our descent into the desperate territory outlined by Tim Flannery. It’s not a view that I hold but it’s one of a large group of offerings that, over the years, have tracked the growth of trends that threaten to foreclose the human and non-human future and have suggested very many solutions.

So when Flannery repeats Lovelock’s view that “humans lack the foresight, wisdom and political will” to avert catastrophe, there is plenty of evidence to back it up. You don’t have to look very far to see that, on the whole, we seem to “need” some sort of tangible and immediate crisis to occur before we’ll act to avoid it. There’s some sense in this because the “opportunity cost” of early action can be prohibitive especially if – as with the putative “Millennium Bug” - the feared event fails to materialise. So it’s important to ensure that the proposed actions are, in fact, necessary. What’s much more difficult to understand is the way that we’ve allowed the global system to overshoot key environmental limits without triggering the necessary actions and adjustments; without, that is, fundamentally changing our relationship with the wider biotic world. The signals have been there but they’ve been almost universally “tuned out”.

Now a chorus of voices from Australia and overseas is telling us that time is short and we need to change course very quickly indeed if we are to avoid climate disaster. Yet set against the above are other voices whose fundamental interests cause them to dispute and deny any view that would place new limits upon their activities. They include business and financial types who’ve grown used to the abstracted and secondary world of stocks, shares, money flows and market niches – a realm currently preoccupied with its own traumas. They include those who see the world through the filters of physics, chemistry and the hard sciences, and who seek solutions through a range of technical innovations and fixes. They include many others who for various reasons find themselves so removed

from natural processes that the latter remain distant abstractions of no relevance to daily life. And they include a tiny minority who have gained some sort of perverse prominence by continuing to claim that things are not really *that* bad.

Seen in this context, Flannery's essay covers familiar ground. What may, perhaps, be new to some are the latest findings about global warming that lead us to wonder if we're not already looking at the end-game of civilisation as we know it. Frankly, I would say that we are. If that is correct, then HOW we respond from here on in is critical. Quite possibly the most scarce resource we have in tackling this monumental task is *clarity*. The issues are complex, the evidence widely distributed and / or contested and many of the most significant drivers of "unsustainability" are all-but invisible to science and to the naked eye.

The strengths of Flannery's effort are two-fold and they lie in two quite distinct domains. The first is his detailed knowledge of the physical world and especially what he calls Earth's "three great organs" – land, air and sea. The second is his passionate advocacy of values such as: taking responsibility and respecting the rights of other species and future generations. Yet the bulk of the text concentrates on the former, which is par for the course for scientists who are grounded in the observable phenomena of the material world. Flannery is in less familiar territory when he invokes the interior worlds of individual people, organisations and cultures with terms like: foresight, wisdom, political energy, will, leadership etc.

The substance of the piece deals almost exclusively with external factors: CO2, climate change, ocean acidification, coal, solar cities, trees and a range of technical fixes. At various points he *evokes* the human and cultural interiors as if, at some level, he intuits their significance, but otherwise pays them little attention. Given limited space one cannot cover everything. Still, they appear here only as poorly articulated background factors. I want to suggest, however, that if we are serious about making substantial shifts toward sustainable futures then we will have to balance our knowledge of external factors with that dealing with the interiors. In other words, we'll want to pay as much attention to values, worldviews and other developmental drivers as we do to CO2, coal and trees. These interior dynamics are at least as significant and possibly more so. This is certainly the view put forward in 2006 by Barrett-Brown where I noted the following comments:

It is not only unproductive but also potentially dangerous to merely focus upon the external world.

And again:

For individuals there is no behaviour without the interior motivation that drives it; for collectives there is no system without the interior culture that drives it.

The implications are clear. While the scientific effort to gain the kind of clarity into global systems that can guide policy is essential, there's an equal need for much greater

clarity about the interior forces that drive human beings and cultures. It is not too far-fetched to suggest that the ever-growing threat of ‘overshoot and collapse’ within the global system is driven as much by inadequate values and poorly functioning social systems as it is by the more familiar litany of external threats.

Some may see this as “academic”. But the implications are far wider. When Flannery weighs into the coal industry and those continuing to log native forests he seems unaware of the underlying clash of worldviews, interests, values and assumptions that operate in these situations. He does not see clearly enough that coal execs and Indonesian timber cutters have very different outlooks from each other and from him. Their interests differ, as do their values and worldviews. So it actually makes little sense to castigate them, and others, out of what can be termed a “world-centric” worldview as though that were the only available option. Clearly there are others. It follows that if we wish to communicate with people different from ourselves then we’d better understand much, much more richly than we seem to, just exactly “where they’re coming from”. The Australian film “The Burning Season” provides a fine example of this in the way that it pays close attention to the life conditions, values and dilemmas of indigenous farmers to our north who are driven to burn the forest through poverty and lack of choices. In this instance solutions began to emerge only after their real situation was understood and addressed.

A more considered balance between visible external factors and invisible interior ones gives access to a wider “playing field” and also permits other kinds of solutions to emerge – solutions that have not yet figured very largely in science-based approaches to global dilemmas. Take, for example, Lovelock’s view noted above that human beings lack foresight, wisdom and political energy. It’s a view that is often repeated by scientists as eminent as E.O. Wilson and other observers. But, in the case of foresight this limitation can be resolved.

We know that all normally equipped individuals possess foresight because without it everyday life would be impossible. Strangely, this capacity seems to decline as we move from individuals to groups, and thence to institutions, societies and the global system. And yet, what we learned at the Australian Foresight Institute was that this human ability can be nurtured, developed and put to work at the social level. In other words, the deliberate use of a currently under-regarded and under-utilised human capacity can be translated into a social principle of considerable power and influence. It’s not, to quote the current PM, a “silver bullet”. But if the implementation of social foresight were to become a genuine priority it would provide a greatly improved and more broadly shared understanding of the world we’re heading towards. It would not only buy us valuable time, it would also provide motivation to participate in the necessary changes and opportunities to act in new and innovative ways. Progressive governments, local authorities and city councils would have access to sources of grass roots support that are currently unavailable anywhere and “re-localisation” – itself a solution in progress - would take on tangible new meaning.

Near the end of the piece Flannery gets to the question at the very heart of this discussion – what kind of society do we want to live in? This question should needs to be considered

more widely than ever before. Central to it is a willingness to probe our interior worlds and understand the well-studied processes that operate there. When it becomes clear that certain values do indeed lead directly to the abyss it will be easier to substitute others. When we recognise that certain worldviews cannot support the world-centric values that Flannery advocates, we may invest greater efforts in promoting more inclusive ones.

The basic point is this. If we accept that currently the global system is on the road to disaster then we need to marshal ALL the resources at our disposal, both interior and exterior. This means bringing together the hard sciences, systems theory, psychology and in-depth cultural understanding as well. Not one or two, but all of the above.

Lynas, M. **Six Degrees. Our Future on a Hotter Planet**, Harper Perennial, London, 2008

A growing literature documents the implications of what is variously called ‘climate change’, ‘global warming’ or ‘global heating’. Mark Lynas’ book is one of the best I’ve read on the subject in terms of placing a clear case before the general public. It pulls no punches when setting out the implications for human civilisation.

The author has examined the scattered scientific literature on global warming and, as he uncovered the evidence, collected it together in six sections, each dealing with a one degree change (from 1 to 6). This is not only an effective dramatic device for ‘ramping up’ the levels of tension in the text, it also effectively depicts the cascading consequences.

In this view humanity has less than a decade before it becomes impossible to avoid a 2 degree centigrade rise in global temperatures. Furthermore, all the actions taken thus far have not dented the rise in CO₂ at all – in fact levels have continued to rise. Even a one-degree rise in temperature is having a range of serious effects that include: accelerating the human-initiated ‘sixth extinction’; the further loss of coral reefs, melting glaciers and ice sheets and so on. Over two degrees and the Earth reverts toward states it only saw in the very distant past, states that would drive humanity away from low-lying areas, eliminate croplands, raise the sea level by many metres and wipe out the majority of other species. As the progression continues various ‘feedback effects’ such as accompany the melting of sea ice and the release of methane from previously frozen tundra serve to accelerate the process. In this way some of the earlier projections undershoot the likely outcomes.

Despite the overwhelming evidence this is not, however, a despairing book. In the last chapter entitled, ‘choosing our future’, the author asks if there is a way to turn our society around. This is not easy, given that ‘currently social and economic pressure works the other way’. There is, however, a tantalising glimpse of hope. Were we to truly understand the devastating and diminished future that the human species is now so strongly tending towards, would we collectively choose to create a different, low impact and (implicitly here at least) post-materialist culture? It is clearly a familiar question to futurists but one

that will become ever more cogent as the penny finally drops that humanity has already left the settled conditions in which it grew and thrived. Indeed, it has already left the world of cheap fossil energy that has sanctioned the hyper-growth of the last century.

It was HG Wells who, in the first half of the 20th Century, suggested that humankind was in ‘a race between education and catastrophe’. Now the terms of that race are clearer than ever and the need to change course more compelling than ever before in human history.

McIntosh, A., **Hell and High Water: Climate Change, Hope and the Human Condition**, Birlinn, Edinburgh, 2008, 289 pp + ix

As this review was being written bushfires were raging in the southern state of Victoria. Marysville and other small towns nearby had been blasted out of existence leaving only ash, rubble and suffering. Meanwhile, in northern Queensland, floods had deluged large areas leaving people overwhelmed, isolated and angry. In both areas lives were lost, property destroyed and the whole nation burdened with a sense of grief and déjà vu, for this has happened before and it will certainly happen again.

Even without such disasters you only have to travel a few kilometres away from the manicured coastal strip into the vast interior to understand that humans are not in charge – we are merely tenants in this wide brown land and much less secure than we’d like to imagine. Much has been written about how this elemental insecurity lies beneath the patina of everyday life in Australia and how it is remembered mainly when triggered by disasters that very briefly puncture the usual self-confident, up-beat atmosphere.

Our tendency is to struggle through such disastrous times, to pull together, invoke a spirit of mateship and rebuild. There will be government reviews. The experts will gather. Some of their recommendations will be implemented, others set aside. Until the next conflagration, the next flood. Then the whole cycle begins again.

What’s different this time, however, in early 2009 is that these familiar disasters are taking place in the context of another slowly-dawning realisation – that we are so very close to the ‘tipping points’ whereby the global climate spins completely out of human control and spawns a gathering series of disasters from which the human species may not recover. This fact confronts us with primal fears that we are exquisitely well equipped to ignore. The experts could be wrong. They’ve been wrong before – remember the ‘millennium bug’? And so it goes. The ‘window’ during which effective action for humanity to act in concert to avoid runaway climate change is now simply too short for all the adjustments, revisions, re-thinking and reconstitution of nearly all social arrangements across the board to take place. Theoretically it is possible if, and it’s the biggest ‘if’ in history, perhaps, humankind were suddenly to wake up to its predicament and together decide to change direction. But one has to say there’s really little sign of that. I don’t detect any diminution in the one-person-per-car traffic chaos every morning. I don’t see any reduction in the efforts of marketers and merchandisers to sell us more stuff that we don’t need. I don’t see the mass media weaning us off of pap and diversion

in favour of truth telling. And I don't see governments around the world exhibiting world-centric aspirations or behaviour. 'Sustainability' remains an empty illusion.

Hell and High Water is written by Scottish writer and campaigner Alastair McIntosh. It is attempt to address this unprecedented situation in a way that goes beyond mere optimism to explore a different notion of hope. The book opens with a telling story of how his mother had moved from a Scottish island to the safety of Stornaway, a small mainland town, only to be almost inundated during an exceptionally powerful storm. Her attempted move to safety turned out to be illusory and her experience stands as a motif for this book. Our much-vaunted consumer society represents our own collective bid for safety and security. Yet it also hides from us deficiencies that compromise our common humanity and our environment as well.

What I most like about the book is that it deals explicitly with both sides of our dilemma – the interior and the exterior dimensions. In this respect it is unusual. Within the growing debate about our compromised future the vast bulk of attention is given to exteriors – to technologies, the economy, finance, politics and the like. Not that these are unimportant but, rather, that they represent only half of the story. The other half is represented by the interiors of human beings and societies. Indeed is here that the sources and any possible solutions to the global problematique actually lie. Informed commentators have, for some time, understood that 'we have met the problem, and the problem is us'. That is, the sources of global breakdown and disaster originate within the very constitution of our own humanity. Or to be even more specific, they lie in the way human beings re-constitute their world and, in the process, destroy parts of it progressively over time. Equally, the most powerful 'drivers' of decline are found in the limitations of human perceptions, habits, values, worldviews and the like. This, in essence, is why they cannot be changed overnight. They are embedded, locked in place, by centuries of enculturation, habit and daily practice.

Half of McIntosh's book summarises the evidence for the onset of drastic climate change. Yet it does so in a way that constantly reflects the way that the exteriors reflect interior factors such as narcissism and hubris. For example, he writes of how 'we mostly stay 'sane' because the hubris of the world is *socially managed* within limits we can cope with.' (P. 99; my emphasis.). He pinpoints a widespread fallacy when he condemns the '*arrogance of forgetting* that our own inner realities also shape the world' (P. 139; my emphasis) The underlying thesis is that 'the sustained onslaught of hubris, and especially its intensification during the early modern era, diminished our collective capacity to sustain a rich inner life.' (P. 139)

The second half of the book looks back to Socrates and others in an attempt to revitalise notions of what might be meant by 'sensibility'. This certainly provides a valuable historical grounding. Yet I found the account less salient than the story of how in the early 20th century US psychologists 'set about trying to convert therapeutic insight into commercial gain' (P. 166). While I understood the attempt to re-ground and rehabilitate 'sensibility' in classical sources, the identification and 'calling out' of those who helped to fashion the consumerist nightmare is perhaps more useful because it allows us to

understand and separate ourselves from unconscious immersion in this deadly system of deception and manufactured needs.

The author's attempt to 'sort out the human condition' is a valid but ambitious one but takes on more than he can reasonably manage. His 'take' on reinvigorating the inner life is clearly genuine and grounded in his own experience. It is an authentic record of one person's journey and I'd be surprised if it were not inspirational for some readers. Yet it's useful to recall the metaphor of there being 'a thousand paths to the top of the mountain' and I wondered how many would detect resonances with the 'new age' thinking that was so in vogue a couple of decades ago. In other words and in very general terms, an approach that involves the re-cultivation of the inner life is undoubtedly part of the solution, but I imagine that most people will need to work out the details for themselves on a case-by-case basis. Equally, his 'twelve steps for reconstituting the world' are brave statements of idealism and authentic aspiration, starting points for many kinds of innovative work. Yet, again, I don't see any real prospect of them being taken seriously, let alone put into wide practice, in the very short time available. Here, at any rate, is the author's 12-step agenda.

1. We must re-ignite the inner life.
2. We must value children's primal integrity.
3. We must cultivate psychospiritual literacy.
4. We must expand our concept of consciousness.
5. We must shift from violent to non-violent security.
6. We must serve fundamental human needs.
7. We must value mutuality over competition.
8. We must make more with less.
9. We must regenerate community of place.
10. We must build strong but inclusive identities.
11. We must educate for elementality.
12. We must open to grace and truth.

Clearly this amounts to a cultural revolution but the question is, is there time for it to succeed? For example, to take point 11, the author wants educational experience to embrace nature in all its aspects, including the elemental ones: earth, air, fire and water. Yet I cannot think of any existing system of formal education with the capacity to fully embrace a vision of this kind. There are simply too many other agendas, constraints and, overall a mind-numbing capacity for 'not knowing' for anything along these lines to succeed.

Overall, the main propositions of the book make a great deal of sense. But I think we need something a little more informed by social process combined with a little more depth and a more clearly actionable framework. The book is certainly a refreshing change from the usual 'external' focus and, as such, a step in the right direction. But it won't shift us very far from the 'overshoot and collapse' trajectory that humanity is currently set upon.

Starke, L. (Ed.) **State of the World 2008. Innovations for a Sustainable Economy**, Worldwatch Institute, Washington, 2008

In the Preface, Christopher Flavin states that ‘the main purpose of the book is to showcase ‘the innovations that will be needed to make a sustainable economy possible’. (Flavin, P. xx.) Many innovations and positive case studies are described. Equally, the contributions demonstrate rather starkly the gap between leading edge thinking and the widespread continuation of business-as-usual. That is, with certain exceptions, the thinking demonstrated here is significantly in advance of common practice. Many arguments are put forward for fundamental changes in all sectors of social and economic activity but it is equally clear that such changes are not being achieved, or achieved quickly enough. For example, in a chapter on ‘building a low carbon economy’ Flavin writes that:

The politics of climate change are advancing more rapidly than could have been imagined a few years ago. But the world has not yet reached the kind of political tipping point that would ensure the kind of economic transformation that is required. And the divide between industrial and developing countries over how to share the burden of action must still be resolved. (P. 91.)

Overall, therefore, the series to which this book is the latest contribution continues to track the long-standing disconnect between environmental realities and socio-political-economic ones. Yet it is the now discredited, expansionist, growth-oriented model of industrial-era capitalism that continues to dominate. This is confirmed, rather ironically, in the Foreword by a Yale academic who argues strongly in favour of a minimal role for government in favour of the private sector and market-oriented ‘solutions’.

The challenges set out in the book clearly cannot be resolved by old-style economics focused through the capitalist model. In a chapter on ‘a new bottom line for progress’, Talberth writes:

We need to measure economic progress by how little we can consume and achieve a high quality of life rather than how fast we can add to the mountains of throwaway artefacts bursting the seams of landfills. We need to measure progress by how quickly we can build a renewable energy platform, meet basic human needs, discourage wasteful consumption, and invest in rather than deplete natural and cultural capital. We need an economic system that replaces brutal and wasteful competition between nations, businesses, and individuals with one that binds us together in cooperative frameworks for solving civilisation’s most urgent problems. We need an economic system that is firmly ensconced within Earth’s ecological limits and guided by our spiritual and ethical traditions. (P. 21.)

He then quotes Edwards summary of seven themes that appear to be common to all such frameworks. They are: stewardship, respect for limits, interdependence, economic

restructuring, fair distribution, intergenerational perspective, and nature as a model and teacher'. (P. 21.) All of these are radical breaks from the currently dominant economic system. Essentially, therefore, the book is a compendium of critiques and good news stories which suggest that some progress is being made on a number of fronts, but by no means enough. What is needed to build on these contributions is a clearer picture of how the multi-layered transition can be envisaged that would set out a 'critical pathway' from one system to another.

There is brief discussion in one chapter of how 'the balance between altruism and selfishness is not hardwired in people' and how shifts from one pole to the other are socially determined. (Jackson, p. 55.) In other chapter there's a discussion of economic values which makes it clear that 'the economic system is not broken. It is doing exactly what it was set up to do: deliver more of what people value ... and less of what they don't.' (P. 137) If that means fewer whales and more iPods, that's how the system works. The question is 'how much should society be prepared to spend to protect nature?'

One senses in all these examples that these writers are nibbling away at the edges of a huge problem that still, to a large extent, lies out of sight and barely comprehended. While these critiques and good news stories are welcome, the resolution of these legitimate concerns requires a broader, deeper and more systematic framework. This becomes clearer if we look at how the content of the book pans out when related to the four quadrants of integral enquiry, as set out below.

1. Seeding the sustainable economy (Gardner & Prugh) LL / LR
2. A new bottom line for progress (Talberth) LL
3. Rethinking production (Lovins) LL / LR
4. The challenge of sustainable lifestyles (Jackson) LL
5. Meat and seafood (Halweil & Nierenberg) LL / LR
6. Building a low carbon economy (Flavin) LR
7. Improving carbon markets (Chafe & French) LL / LR
8. Water in a sustainable economy ((Bergkamp & Sadoff) LL / LR
9. Banking on biodiversity (Bayon) LL / LR
10. The parallel economy of the commons (Rowe) LL / LR
11. Engaging communities for a sustainable world (Assadourian) LL / LR
12. Mobilising human energy (Calder) UR / LL
13. Investing for Sustainability (Baue) LL / LR
14. New approaches to trade and governance (Halle) LL / LR

Totals: Lower left: 12; Lower right: 12; Upper left: 0; Upper right: 1

It is clear from this overview that the book addresses the interiors and exteriors of social and systems. Then, as noted, while concerns about human interiors and performance are evoked throughout they are not addressed in any detail.

Spratt, D. & Sutton, P. **Climate Code Red: the Case for Emergency Action**, Scribe, Melbourne, 2008

This book has three main sections. Part 1 covers similar ground to Lynas' work *Six Degrees* and summarises the scientific evidence for disastrous global warming, including the 'feedback processes' that look likely to accelerate it. Part 2 looks at the actions necessary, including eliminating all CO₂ emissions, recognising a global emergency and putting in place a plan for dealing with it. This includes acknowledging and working toward what the authors call a 'safe climate zone' – which is something they do not see in official responses anywhere. The core of the book, however, is in part 3 where they set out a variety of strategies and potential solutions to these unprecedented threats. They basically argue that the entire human economy needs to be re-directed away from business-as-usual operations toward actively dealing with the climate emergency. Three specific steps are:

- reducing greenhouse gas emissions to zero;
- removing excess CO₂ from the atmosphere; and
- taking steps to cool the earth by direct means.

They examine some of the most currently discussed options such as 'clean coal', biofuels and carbon trading, acknowledging that none of these are sufficient on their own. Of much greater value are strategies that bring renewables to the forefront, deep economic transformation and the intense use of 'biochar' sequestration – a way of taking enormous amounts of carbon out of circulation by drawing it down into soils. According to research that they cite, this method could mean that 'all historical emissions could be reversed in 70 years'.

To their credit the authors do not merely address the 'external' aspects of the issue, they also refer to some of the human and social dimensions that have thus-far received all-too-little attention. These include some of the psychological dimensions of denial and not-knowing, political hurdles and, overall, society's long-standing lack of investment in effective foresight. In fact this is one of the underlying themes of the book. They note that it is vital to focus on other issues besides climate change and then add the following:

Since the beginning of the industrial revolution, we have failed to build and maintain a system that has enabled modern society to ensure its own sustainability and that of other living species. Now we have a sustainability crisis with a multitude of serious symptoms. An effective governance system would anticipate and prevent threats to sustainability, and would also have the capacity to restore the Earth and society to its safe zone as soon as possible.
(p. 151)

The main advances that the authors provide in this book are, first, that we are indeed living in a global emergency, second, that, apart from a few scientists, few are taking this seriously, third that there is now a sound basis to require a wholesale change of direction

in the global economy and finally, their review of some of the means for making that transition happen.

Inevitably, therefore, there are a number of related concerns that require a lot more work before the kind of systemic change that they seek stands any real chance of occurring. There are also some key omissions that I will mention first. It is rather odd that, when looking for sources of social and cultural support for the changes they advocate they, like so many others, largely overlook the very active role of advanced futures / foresight enquiry and action. While they clearly see that for political leaders and others to have any hope of leading in the 'right' direction, and such leaders need widespread grassroots support, no mention is made here of what may best be called the 'futures in education' work that has been carried out around the world – but never widely adopted – for several decades. Specifically these Australian writers overlook the work of the Australian Foresight Institute (AFI) and its continuing work on social foresight. If ever there was a substantive body of thinking and practice that supported the authors' case it is this. Widespread investment in both of these areas would go a long way to providing the social means to carry out many of their recommendations.

There are also some important areas that should be included in any related future work. One of these concerns the role of 'integral thinking' – a perspective that brings much greater clarity to crucial differences between the structural domains (individual/collective and interior/exterior) that are centrally involved in this and any other global issue. The other area that they overlook and that demands much more rigorous and focused attention is the role of what I call the 'spoilers' within the global system. That is, those social entities that actively block, or work against, any effective action or response to the great global issues of our time. This is not merely a theoretical issue. The authors go to great pains to outline some of the social innovations that they feel are required (such as eco taxes and rationing). Yet such strategies will continue to be marginalised – and perhaps insupportable - while the US and other countries devote so many billions of dollars to military uses that contradict everything these writers stand for. Similarly, no mention is made of the malign web of international criminal organisations and the 'shadow economy' that they run. Nor, finally, is any mention made of what might be called 'aggro states' (currently Russia, for example) or the dismal list of failed or failing states in Africa and other parts of the world.

In some ways factors and actors of these kinds provide some of the most difficult challenges because they are neither amenable to reason nor to democratic influence. Rather, they reflect some of the more unfortunate aspects of human psychology and being that are, to an extent, shared by us all. Thus, when attempting to diagnose and resolve global issues the 'interior personal' and 'interior cultural' domains require at least equal attention. So, while some mention is made of them here, this, in my view, is where the next focus of urgent work is required.

Taylor, G. **Evolution's Edge: the Coming Collapse and Transformation of our World**, New Society Pubs., BC, Canada, 2008. 308pp + xii

Evolution's Edge is a brave and inspiring book that deserves wide attention because it endeavours to tell the truth about a central fact of our time – that humanity is now set on an 'overshoot and collapse' trajectory with incalculable consequences for itself and all other species. The reasons for this are many and varied so to provide a succinct overview is no easy task. Here the author has chosen to use a broad systems perspective that captures many – but not all – of the dynamic processes involved.

The book achieves a good balance between diagnosis and solutions. Part one deals with 'collapse – the dominant trend'. It begins with an excellent foundational chapter that goes straight to the point and looks at the factors driving the overshoot dynamic. In brief these cover population, resource consumption and availability and human impacts or 'ecological footprints'. The following chapters take up themes exploring the global crisis, the unsustainable global culture, the need for a new model (of development) and the dynamic of cascading crises and system failure.

Part two deals with 'transformation' which is portrayed here as 'the emerging trend'. It considers the nature of sustainable development, technological and social processes, responses to crisis, scenarios, what it calls 'the design of a flourishing Earth community' and, finally, 'tools for transformation'. There are extensive endnotes and an index but the lack of a bibliography is rather puzzling.

What most appeals to me about this book is the way that it fearlessly attempts to tell the truth and, in so doing, brings valuable clarity to some of the big issues of our time. Then, looking at the grounds of possible solutions, the book sets out some key suggestions including the following.

The key to establishing a sustainable global system is realising that it is not possible to meet all our needs through limitless consumption. Once real material needs are met, we will gain more happiness from improving the quality of our lives than from increasing the quantity of our possessions. (p 122)

The alternative to future resource conflicts is to eliminate the potential causes of war. This strategy (called developing sustainable security) will require the major powers to reduce their military budgets and use the savings to rapidly convert their unsustainable economies into sustainable economies. (p. 186)

Such suggestions all make complete sense and few progressively minded people would disagree with them. And yet there are other forces at work in the global system that actively work against these would-be innovations. They are the 'spoilers', the agencies and actors whose daily operations prevent progressive changes from taking root and thriving. They include: international criminal networks, the vast investments in advertising and merchandising, the policies of oil and coal companies (and the 'perverse

incentives' that they still attract) as well as the actions of militaristic and failed states. The book, however, pays rather too little attention to the spoilers and their cumulative impacts. Equally, I found it somewhat over-optimistic about the progressive potentials of new technologies (such as nanotech and IT) and of the likely impacts of citizen action movements. Both have drawbacks that need to be acknowledged.

The fact that the book is founded on a systems perspective gives it a strength and consistency that tend to be lacking in more inspirational accounts. What this also means, however, is that discussions of social, symbolic and psychological factors are perhaps rather too brief. The practical result was that in some cases when transformative options were being suggested or discussed, I found myself saying 'OK, but how will this happen?' There are relevant discussions of values and worldviews, but the analysis does not penetrate far enough into the interiors of cultures or people to see more clearly where the developmental drivers of sustainability may actually lie. In this respect, however, the book is not alone.

What does distinguish the book and helps it stand out well ahead of the current crop is that it tackles the 'overshoot and collapse' issue head-on and in a way that is both clear and accessible. Another outstanding feature is that it is illustrated throughout with some very fine illustrations contributed by the author's wife, Fereshteh Sadeghi, a talented artist and graphic designer. These usefully highlight many of the key concepts. The section on 'the design of a flourishing Earth community' deserves close reading and could perhaps benefit from a more in-depth discussion. As it stands, however, it sketches in many key aspects of a new world order that may emerge from the present crisis. I therefore recommend the book unreservedly to all those who know that present global trends lead to disaster and are looking for new sources of understanding and insight.

Faris, S. *Forecast: The Consequences of Climate Change from the Amazon to the Arctic*, Scribe, Melbourne, 2009.

While the threats of climate change and global warming have emerged onto the public agenda over much of the world it remains very difficult to persuade people that we need to respond urgently and effectively. The reasons for this reluctance are many and varied. It is 'only human' to nurture fond hopes that such changes will not affect us – at least not yet. The issues about 'who pays' are unresolved. The world is not united socially or politically and world centric awareness is a scarce resource indeed. So how can anyone influence those for whom these threats remain distant or so uncertain as to render any real response literally unthinkable?

One answer to this perplexing question is provided here by Faris in this short and accessible book. To research it he travelled to many different parts of the world to look at the evidence for himself. He not only found it, he found it in spades, so to speak. As one respondent in Manitoba put it 'the evidence just bombards you.' The reader, however, is not bombarded. Rather he or she is led through a series of first-hand vignettes,

conversations and reports that are both brief and yet remarkably clear. What emerges from each is a real sense of the ‘texture’ of the situations described.

For example, nearly everyone will be aware of the tragic loss of life in Darfur. Yet Faris puts the genocide there into a wider context. He shows how traditional ways of life were disrupted by long-term environmental changes that ended up pitting previously peacefully coexisting groups against each other. It’s an immensely tragic story, but one that looks set to be repeated in other places. As the planet warms so the numbers of poor people who are already living on the margins will increase, as will the associated tensions and conflicts. This is already visible in many places in SE Asia, especially those that rely on the great rivers of the region. Those that support Pakistan’s agriculture, for example, are said to derive 80% of their current flows on ice melt from Kashmir. But with retreating glaciers and reduced snowfall, the rivers will slowly diminish. Conflicts over land use and access to water appear unavoidable and the consequences will be global as large numbers of people are displaced. Places like Bangladesh are particularly vulnerable to sea level rise and flooding due to their low elevations. As a result of these and similar difficulties, migration pressures on the rich nations will become progressively more extreme even though they’ll also be increasingly under siege themselves from climatic and other shifts. And here another conundrum presents itself – if the lifestyles of the rich are already unsustainable, how could even they support millions of would-be immigrants from elsewhere?

The early signs of global warming are seen not only in poor nations. Faris describes how vineyards in California are running out of water and how ice melt in Northern Manitoba is overturning settled ways of life and creating new economic conflicts. He reports back on the ways that increases in the prices of storm and flooding insurance in America’s Key West is driving people out of the market and creating an exodus from that once desirable island. In fact there are enough examples from a number of sources to demonstrate that this is a global phenomenon and it has already started.

In an all-too brief epilogue Faris concludes that:

Global warming is putting the whole planet under pressure, and the first to have felt its effects have been those in places where even a small change was enough to make a big difference. Arctic ice is giving way to open ocean. Glaciers are melting faster. Stronger storms are spreading fear along the coasts. Ecosystems are crawling north and uphill. Areas once a bit too cold for tropical diseases are hosting epidemics. (P. 215).

He then points out that ‘unfortunately, the battle against climate change is unlikely to be won with measures that will pay for themselves’ and poses the question that ‘if the richest people on the planet won’t make economic sacrifices to address the problem, what chance is there that the rest of the world will?’ (P. 220 & 222.) This remains an open question.

Will the book persuade the climate change sceptics? Perhaps not. It may be that they will only be convinced when runaway global warming sweeps away their comfortable lives along with the assumptions upon which the latter rested. For, make no mistake about it, books like this one show that the proverbial writing is upon the wall. The early signs of global warming are unmistakable and we are all challenged to take part in responding. By visiting some of the places and meeting people who are already affected Faris has provided us with a series of concrete accounts that have human, not merely intellectual, significance. As such the book is a valuable contribution that might just persuade some of the doubters to revise their earlier views.

Global warming is real. It is now. And it urgently requires us to re-think the terms of our tenancy upon this small planet.

Note

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