

Thinking About Sustainability

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How should we think about the challenge of sustainability?

For those of us who have been profoundly concerned about the state of the planetary ecology for many years the past few months have been extraordinary. The Intergovernmental Panel on Climate Change[1] confirmed the science of anthropogenic climate change beyond reasonable doubt. The Stern Review[2] argued that climate change had been brought about by “the greatest market failure the world has ever seen”. Al Gore has shown the challenge graphically in his film *An Inconvenient Truth*. The UK Chief Government Scientist has described climate change as a far greater danger to humanity than terrorism. And we have seen the CEOs of Tesco, Marks and Spencer and Wal-Mart competing to be seen in the forefront of change toward a lower carbon economy. All this is good news: not a day passes without a mention of climate change somewhere in public conversation, although it is still easily displaced from the front pages by the latest piece of political or social scandal.

It is now generally accepted that we must keep temperature rises below 2°C—even that will cause major disruption and discomfort to our lives—and that in order to do this we need to keep to keep carbon dioxide equivalents in the atmosphere below 500-550ppm. This means that we in the West must reduce carbon dioxide emissions by something like 80% by mid century. We can argue about the precise figures. But essentially we have to decarbonize our economy by mid-century.

While we worry about climate change, we should not let it overshadow the other environmental challenges that confront us: We are living through the sixth major extinction spasm in the history of life on earth, some 1000 times the background level[3, 4]; we lose topsoil through erosion and desalination at an alarming rate; fresh water is increasingly scarce; population increases continues to exert enormous pressures on ecosystems; and so on. As Lester Brown points out, “the economic policies that have yielded extraordinary growth in the world economy are the same ones that are destroying its support systems” [5]

My experience is that one of the great difficulties in addressing issues of such magnitude—we are talking about the serious degradation or even loss of a habitat suitable for humans on planet earth—is that we don’t have language to talk about it every effectively. Or maybe more accurately, there are so many different ways of talking about it that this in itself causes problems. Different discourses start from different premises, draw on different data, have different internal logics, are informed by different value systems, reach for different end goals. In order to grasp the magnitude of the problem and make sensible choices for action we need to be able to understand these different discourses—otherwise we will keep talking past each other.

The political theorist John Dryzek[6] offers a helpful way of thinking about this: environmental discourses, he argues, are on the one hand either reformist or radical,

and on the other hand either prosaic or imaginal (see figure)—offering us a way of seeing four different kinds of discourse.

- The prosaic and reformist sees the challenge within the current economic and social worldview and argues that what is needed is simply problem solving to make current policies and practices more effective and efficient. Markets and technology, properly applied, will solve the problem.
- The prosaic and radical perspective, staying within taken for granted assumptions, argues that there are practical limits to what the planetary ecology can contain. This is the neo-Malthusian limits to growth argument, and leads to an attitude of survivalism: we must limit the damage by cutting back on economic growth
- The reformist and imaginal perspective accepts many of the objectives of current capitalist society but argues that we need to be much more imaginatively smart about what we do. This perspective sees that the industrial process of extraction-production-consumption often involves digging up stuff on one side of the world, expensively transforming it, carrying it to the other side of the world, using it briefly, and dumping in back in a hole in the ground. There must be smarter ways of doing business.
- The imaginal and radical perspective seeks to change the way we experience ourselves and the planet. This is the Deep Green perspective which argues that all life on earth has intrinsic value, not just value as a resource to humans; for some this leads to a spiritual perspective, seeing the earth as a sacred unity and the divine is immanent in the ecology of life.

We might see these different discourses as overlapping somewhat but as essentially in competition: What is the relevance of Green Radicalism for management? how can the Deep Greeny tolerate what they will see as the superficiality and materialism of the prosaic reformist? But my argument is that if we are to fully address the challenge of developing an ecologically sustainable society we will need to draw on all four kinds of discourse and be able to appreciate that the different perspectives they offer. Let me attempt to show how this might work.

I want to look first at the prosaic-radical discourse because in some senses this is the sparsest argument, easiest to express but maybe the most difficult to grasp. It was first introduced in 1972 by the Club of Rome publication *Limits to Growth*[7]. At that time, as now, economic growth was the holy grail and the suggestion that there might be limits was seen as ridiculous. However, as modern ecological footprinting approaches demonstrate, if everyone in the world lived as we do in the UK we would nearly need three planets to support us: humanity as a whole surpasses the carrying capacity of the planet around October each year. There are necessarily limits to growth on a finite planet, and it is arguably self evident that there are too many of us doing too much and consuming too much. The modelling in the *Limits to Growth* book (which has recently been updated and republished[8]) shows (as does Stern) that business as usual will lead to overshoot and collapse: collapse of living standards, of economic output, and of the ecology which supports us. While notional incomes have continued to rise, measures of total wellbeing seem to peak in the late 1970s and have been declining every since. This is not an argument for hairshirts and ashes; it is an

argument for dethroning the imperative of economic growth (which arguably distorts social relations[9]) and replacing it with broader qualitative measures of well-being; it is an argument for living more lightly on the planet, for thinking more carefully about how and what we consume, for knowing our own footprints and taking action to reduce them; it is an argument for dethroning *homo economicus* and for taking joy in the conviviality of human relationships and delight in the beauty of the more than human world.

If we turn to look at the Stern Review we could argue that this falls squarely into the prosaic reformist discourse. Stern and his team use scientific data and economic modelling to reach their conclusions. Look at the language:

This Review has assessed a wide range of evidence on the impacts of climate change and on the economic costs, and has used a number of different techniques to assess costs and risks. From all of these perspectives, the evidence gathered by the Review leads to a simple conclusion: the benefits of strong and early action far outweigh the economic costs of not acting.

Stern provides an impressive and thorough exploration of the economic consequences of climate change and the benefits of early action to mitigate it. What is important and significant about Stern is precisely that that he does argue within the accepted economic and scientific discourses of our time reaching seriously challenging conclusion that “the benefits of strong and early action far outweigh the economic costs of not acting”

So, you might argue, is the Stern review sufficient? If he is able to reach these conclusions drawing on economic modelling, why do we need the other discourses at all? Well, first of all, Stern is actually in some ways more radical than he seems. In choosing a low discount rate for the impact of current choices on future generation he places a much higher value on future generations than is usual in economic arguments saying “if you don't care much about the future, you won't care much about climate change”. By explicitly (and controversially) bringing value and moral judgements into the picture he vastly widens the discourse away from what we might describe as ‘problem solving’ and drawing into the debate fundamental questions that are explored in the imaginal radical discourses.

But in contrast, Stern’s solutions are distinctly unimaginative. He argues that three elements of policy are required for an effective global response:

- the pricing of carbon, implemented through tax, trading or regulation.
- support for innovation and the deployment of low-carbon technologies.
- action to remove barriers to energy efficiency, and to inform, educate and persuade individuals about what they can do to respond to climate change.

Well yes, one might say, nothing wrong with that! But how are we going to inspire ourselves and each other to grasp and respond to this enormous challenge to humanity if we can only talk about tax, regulation, technology and efficiency? How will you or I be able to see ourselves as part of this enormous human endeavour if we can only think in terms of a co-ordinated global response? Surely some deeper transformation of attitudes and values is needed, surely some greater call on human ingenuity?

So if we turn now to the imaginal-reformist discourses we can find a whole range of exciting ways that people are reconceptualizing the processes of economic life. Fundamentally the arguments here are that the design of our economy is grossly inefficient, that the products and service we produce at such great cost to our ecology often don't really do what we want. So, for example, the perspective of 'natural capitalism' builds on Fritz Schumacher's original observation[10] that humans treat the irreplaceable resources and ecosystem service of the planet as if they are income, when they are better seen as capital. A capitalism 'as if living systems mattered' would see that the limiting factor to future economic development is the availability and functionality of natural capital, in particular, life-supporting services that have no substitutes and currently have no market value. The loss of natural capital is caused by misconceived or badly designed business systems, population growth, and wasteful patterns of consumption. Thus natural capitalism[11] seeks to remodel economic system in four ways

- Radical Resource Productivity: fundamental changes in both production design and technology mean that we can make natural resources of all kinds stretch five, ten, even 100 times further than they do today[12, 13]. This is the argument for 'dematerializing' our economy.
- Biomimicry. Natural capitalism seeks not merely to reduce waste but to eliminate the very concept of waste. In closed-loop production systems, modelled on nature's designs, every output either is returned harmlessly to the ecosystem as a nutrient, like compost, or becomes an input for another manufacturing process[14].
- Service And Flow Economy. In place of the traditional business model resting on the sale of goods, value is delivered as a continuous flow of services—such as providing illumination rather than selling light bulbs. This aligns the interests of providers and customers in ways that reward them for resource productivity.
- Investing In Natural Capital: natural capitalism seeks wherever possible to actively to restore ecosystems to a healthy state where they can thrive and supply the many ecosystem services on which we rely

Sam Manly[15], one of our undergraduates, researched an example of the way a combination of industries using one another's waste products as inputs for different processes.

In Kalundborg, Denmark for example, six companies: a Power Station, a plasterboard factory, a pharmaceutical plant, an enzyme producer, an oil refinery, a waste disposal company and Kalundborg Municipality exploit each other's residual or by-products on a commercial basis. This leads to an elegant set of interrelationships... which turn waste products into raw materials elsewhere. This system embodies a combination of biological and technical cycles, as can any industry. The industries' proximity to each other and carefully designed relationships allow energy used in the production process to be minimized. Once this is completed, the energy still required could easily be provided from renewable energy sources.

As Sam points out, in the way the "good intentions of present day sustainability advocates have been combined with corporate profit motivation to form an elegant

cyclical production function and an industrial symbiosis; even within the same economic system which motivates waste and environmental degradation elsewhere”.

The McDonough and Braungart Sam refers to are the authors of the classic text ‘cradle to cradle’ in which the call for a design revolution. They ask, if a community of ants can

- Safely and effectively handle their own material wastes and those of other species
- Grow and harvest their own food while nurturing the ecosystem of which they are a part
- Construct houses, farms, dumps, cemeteries, living quarters, food storage facilities from materials that can be truly recycled
- Create disinfectants and medicines that are truly healthy safe and biodegradable
- Maintain soil health for the entire planet

... why cannot humans? This is a profoundly challenging question and one to which management needs to rise.

The last of the four discourses is both imaginal and radical: it seeks to re-vision the relationship between the human and the more than human world. We humans in the Western world are profoundly separated from the natural ecology within which we evolved: we rarely hear an owl call or see the stars; we don’t know where our water comes from or where our waste goes. This is a strange and dangerous predicament for how can we attend appropriately to that from which we are radically separated?

The field of Deep Ecology[16] is based in the scientific insight into the interrelatedness of all systems of life on Earth (as for example by Lovelock’s Gaia theory); and second in an realization that our profound anthropocentrism—human centreness—is a misguided way of seeing things. If we focus on narrow human purposes, and especially if we have developed technologies, we destroy the systemic qualities, the balancing feedback loops, which preserve the integrity of ecosystems. We end up with degraded farmland, fished out seas, polluted aquifers. So the deep ecology perspective argues that we have to place ourselves back in the context of the ecology of which we are a part, see that we are part of, rather than apart from, the community of beings on the planet. This leads us to see, with Aldo Leopold[17] (who was one of the founders of this perspective) that “A thing is right when it tends to preserve the integrity, stability and beauty of the biotic community, it is wrong when it tends otherwise”

Thomas Berry[18-20], a priest, monk and cultural historian, sees the roots of our alienation from our planet as going back to the Black Death in Europe. He argues that at that point, when nearly 2/3 of the population died, Christendom was so shaken that it lost its trust in the natural world. The religious and cultural emphasis moved from the earth as a revelation of the divine to the imperative to transcend this fallen world and aim for a perfect heaven. This is one of the core roots, he argues, which led to the desacralization of the phenomenal world and changed perceptions so that rather than being a manifestation of the divine earth could be seen as a resource to be exploited.

To restore the balance between the human and the planet, we have to see the earth again as sacred community. For Berry, the universe itself and every being in the universe has both psychic/spiritual and physical/material dimensions, an intangible inner form as well as a tangible physical structure, and that these two aspects must always go together and be understood together. Thus for him (and for many others) the devastation of the earth is the consequence of a deep cultural pathology which separates these two, seeing the world as purely material. He sees the 'Great work' of our time as that of "moving modern industrial civilization from its present devastating influence on the Earth to a more benign mode of presence" and argues that a fundamental condition for doing this is that we learn to see the whole universe as a 'communion of subjects' rather than a 'collection of objects'. He challenges us to see that the "devastation of the planet can be seen as a direct consequence of the loss of this capacity for human present to and reciprocity with the nonhuman world". We need to move from a human-centred to an earth-centred norm of reality and value, and that is the only way we can be truly human and play our proper part in life on earth.

Each one of these four discourses has something important to offer us and a trap into which we can fall. We need the challenge of seeing there are necessary limits to growth, that we are going beyond these, and this must inevitably lead to overshoot and collapse. We need this as a terrible warning to change the path we are on, but we don't need to fall into a nihilism which would lead us to feel that nothing can be done or that we must return to a primitive existence. We need the kind of thorough and detailed examination of our predicament that Stern offers, cast in the language of policy and economics, and drawing on the best scientific and economic data available. It shows that, *within our current assumptions and perspectives*, we are on an unsustainable path. The pitfall of Stern's approach is that he suggests that we can resolve the problem with relatively conventional policy instruments and by describing the issues in familiar terms takes some of the sting out of it. After all, he claims that "Tackling climate change is the pro-growth strategy for the longer term, and it can be done in a way that does not cap the aspirations for growth of rich or poor countries". Of course there are all kinds of important opportunities and economic benefits in tackling climate change, but limitless growth of the kind we have seen since the Industrial Revolution is not one of them.

In response to the relative conventionality of Stern, we desperately need the visionary perspectives of thinkers and entrepreneurs who are reinventing our ways of providing the goods we need and creating a service based economy. For example, the network WorldChanging.com works on the premise:

that the tools, models and ideas for building a better future lie all around us. That plenty of people are working on tools for change, but the fields in which they work remain unconnected. That the motive, means and opportunity for profound positive change are already present. That another world is not just possible, it's here. We only need to put the pieces together [21].

And we need the deep ecology perspective because ultimately the ecological crisis is not about economics or technology, although these matter. It is a profound challenge to our understanding of the nature of the human, a spiritual challenge in the widest sense of the word. Until we stop seeing ourselves as separate from the rest of the universe; until we stop seeing humans only as intelligent and the rest of the planet as

brute matters, until we see ourselves as a mode of being of the universe, with all other beings as sacred participants in an unfolding universe, we just won't find the psychic or spiritual energy to make the changes we need to make.

	Reformist	Radical
Prosaic	Problem Solving: rationality and efficiency	Survivalism: Limits to Growth within industrial structure
Imaginal	Sustainability: Natural Capitalism	Green Radicalism: Green Politics, Deep Ecology, Gaia

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