

The Sustainability Horizon

With the publication of the Stern Report in 2006, we entered stirring times for sustainability. Any set of policy recommendations which manages to unite Shell UK, the TUC, Friends of the Earth and the Treasury in its favour must have a very great deal going for it. And indeed, there does seem to have been a sudden surge of interest in and concern about these issues – at least as far as they are represented by the need to mitigate or adapt to climate change. Probably now for the first time, there is the chance of real public recognition of global warming as an urgent problem, and of hard-nosed political work to address it. It helps, of course, that it is a Treasury economist who is now recommending action, rather than the merely academic and ‘green’ economists who have been recommending it for about two decades. The Report’s establishment pedigree, in fact, will surely give a major impetus to what has now become the standard prescription on climate change.

Just to summarize that prescription: governments rely on scientific prediction to steer their economies towards a low-carbon future, more or less directly depending on the particular national and sectoral circumstances. To this end they use a complex mixture of taxation, regulation and public investment in pursuit of a wide range of specific sustainability standards and targets. Corporations meanwhile recognize the business case for responding positively, raise their sights (with some government support) to the longer term and shift profitably into the new range of opportunities available. In the stark new light of realism both about climate trends and about the inevitably global-capitalist context for action, what else could we do? How could that possibly *not* be the way we must now go?

That kind of question is a warning sign that we may be in thrall to one particular way of looking at things. It is always a public service to try and think the unthinkable, even if all it achieves is to bring the grounds of our assumptions into view so that we can re-endorse them. But, of course, it sometimes achieves more than that – a kind of mental liberation, which can take us onwards in unforeseen directions. And thinking the unthinkable is an especially important public service to perform in this particular context. If the standard prescription for combating global warming were indeed workable, we might still just have time to implement it before things start to run potentially devastatingly out of control. But what we certainly don’t have time for is to find out ten or fifteen years down the line that it was never *going* to work.

I want to argue in this book that unless we change our approach there is a very real chance of our finding out precisely that. Our standard model of sustainability, cashed out for policy purposes as *sustainable development*, is so far from being the unchallengeable way forward that it could now be about to mislead us dangerously, if not terminally.

The dominance of sustainable development

That said, the fact that we are where we are is a triumph for the environmental movement, from its more-or-less standing start forty years ago, and the sustainable development idea has been a centrally important aspect of this achievement. The mainstreaming of ecological awareness and concern has been achieved in an extraordinarily short time for such a huge shift in the conventional wisdom. Significant changes in the overall sense that societies make of themselves have tended in the past to occur very slowly and patchily, with the transition from a few isolated voices to a common consensus taking centuries. Certainly, with improving communications and growing economic integration, the pace of cultural and conceptual change has been speeding up, as we can see if we think in turn, for instance, of the Christianization of Europe, the Renaissance, and then the French, Industrial and scientific revolutions. But it is still very striking how swiftly – indeed, in historical terms, how precipitately – the ‘green turn’ has been promoted from the fringes to the centre of human affairs, and how readily an accommodating discourse has been found for it. The emergence of sustainable development thinking in response to the environmental crisis has been a phenomenon of utterly unprecedented rapidity.

There is no need here for a full historical account of the process by which this idea has established itself; but it is worth noting the principal milestones, if only to register the speed of our passage. Awareness of how attitudes and behaviour towards the non-human natural world shape our humanity is indeed a Western cultural inheritance going back to the Romantic movement and beyond. Influential traditions of thought about the way our relations to nature bore on our economic life (represented classically by Ruskin and Morris in England and Thoreau in America) then flowed on through the nineteenth and early twentieth centuries. As a consequence of this pre-history, when the conceptual seeds of sustainability discourse were sown by the early scientific environmentalism of Carson, Commoner and others in the 1960s and 1970s, they found a fertile soil principally in the US and Western Europe. As the evidence mounted that human impacts on the rest of the biosphere were causing trouble, these seeds began to sprout across the globe. Organizations like the United Nations took an interest, with a particular growth spurt coming from the UN Stockholm Conference on the Human Environment in 1972. The term ‘sustainable development’ itself, as a policy idea for putting our newly perceived ecological responsibilities into practice, first achieved prominence in the World Conservation Strategy published

by the International Union for the Conservation of Nature in 1980. It then moved to centre stage in 1987 with *Our Common Future*, the report of the UN-sponsored Brundtland Commission, whence it served as the organizing principle of a further UN conference, this time on 'Environment and Development', held in Rio de Janeiro in 1992. As central to the agreements signed there (in particular, the Agenda 21 action programme), the sustainable development idea has since informed a huge and burgeoning volume of activity by central and local governments, non-governmental organizations, development agencies, community groups, business firms – and, of course, academics.

There are a range of definitions of the idea which has thus more-or-less burst upon the world, but what matters here is less definition than the broad topography of the sustainable development concept. The main features of this are twofold. In the first place there is recognition of a duty to strike some sort of balance between the present and future availability of natural resources for the human project. In the second place, there is the assumption that we can find ways of measuring our success or failure in striking that balance, such that policymaking can be designed to ensure the discharge of our future-respecting duty across society as a whole.

Thus, accepting a sustainability constraint on (especially) our economic activities means trying to work within the requirement that henceforth they must not derogate from the powers of the biosphere to regenerate resources and support for their continuance at an equivalent level, or for that of acceptable successor activities. The harvesting of a renewable natural resource, such as a fishery, for instance, will be conducted sustainably in the sense of this constraint when the annual catch leaves a sufficiently numerous breeding population in the sea for the stock to regenerate itself so that it can support the same level of take in the following season, and so on indefinitely. The activity of using a non-renewable resource, such as a fossil fuel, obviously cannot itself be sustainable in precisely the same way; but it can still be part of a sustainable energy economy, provided that we do not simply use up the coal or oil regardlessly, but invest enough of the revenues to build up alternative, renewable energy sources which can be phased in as the fossil fuels phase out in order to meet an agreed level of continuing energy demand indefinitely. (This is part of the point of the clause about 'acceptable successor activities'.) Similar considerations apply where the resource on which an activity draws is the capacity of natural systems to absorb its associated discharges, for example of nitrates or greenhouse gases to water or the atmosphere respectively. Such activities are sustainable when they are structured to operate on a permanent basis within these naturally self-regenerating absorptive capacities (which will often, because of ecosystemic interdependence, mean those of a very wide range of interconnected environmental media).

Within the sustainable development framework this sustainability constraint is formulated as applying specifically to our pursuit of 'development' – that is, to collective actions and policies designed to achieve present or short- to medium-term

improvements in human welfare. In perhaps the best-known version of this, due to the Brundtland Report, we are to go on trying to meet present needs, but only in ways which do not jeopardize the ability of future human generations to meet their own needs. Historically, this formulation, from a large UN Commission, represented a compromise between its members from the poorer South, who didn't want the roll-out of economic development abandoned, and those from the rich North who had the luxury of beginning to appreciate its downsides. The terms of this compromise were expressed, however, as the recognition of a constraint from the future. Overtly, this rests on what looks like a straightforward requirement of fairness. The needs of future peoples will be no less *needs* than ours are, so how could the mere fact that we are around now, and they are not, justify our behaving in ways which have the effect of privileging ours over theirs? More basically, though, some such constraint seems to be implicit in the idea of *development* itself. Once our most pressing survival needs are met, the aspiration to improve the human condition seems peculiarly empty unless the improvements are such as we can be confident of handing on to our children, and can hope that they will be able to hand on in turn to theirs.

The intended practicality of the constraint is the other crucial aspect of the framework. A requirement of fairness to futurity is merely aspirational unless we can derive from it some kind of criterion, or set of criteria, for adjusting the scope and methods of present development in the light of its anticipated ecological as well as its economic and social consequences.

Thus, for example, the Sustainable Development Strategy of the UK Government, *Securing the Future*, expresses these criteria in terms of two broad objectives or directing principles, neither of which is supposed to be sacrificed to the other in the framing of particular policies, plans and programmes. These objectives are, respectively, 'living within environmental limits' and 'ensuring a strong, healthy and just society'. The former requires us to identify and respect those limits to present activity implicit in preserving natural resources and ecosystem functions unimpaired for ourselves and future generations; the latter links this process to the meeting of present and future human needs for wellbeing, equality of opportunity and social cohesion. The strategy is informed by the confident expectation that sustainability criteria cashed out in these terms and conforming to these broad objectives can be operationalized through the kind of economic and social management machinery available to modern democratic governments. It endorses three further, contributory principles for the use of this machinery: achieving a sustainable economy (combining prosperity and environmental efficiency), promoting good governance through public engagement and participation, and using sound science in a responsibly precautionary way.

The assumption in all this is that policies, laws and regulations carrying broad popular endorsement and steered by normal bureaucratic regimes, increasingly through the use of agreed measures and indicators scientifically

grounded and objectively applied, can address the problems of adjustment now recognized. The construction of such a legal and regulatory framework is now a major concern of both local and national policymakers, its implementation a growing task of bureaucracies, and working within it an increasingly important feature in the calculations of business – especially, but by no means exclusively, in the West and North of the world. Meanwhile, vigorous agitation around the multiple pressure points for change provided by this emerging framework is carried on by a whole new layer of non-governmental agencies, citizen and voluntary activity worldwide.

In summary, therefore: over the course of the past half-century, we have seen the discourse of sustainable development achieve worldwide recognition and claim a growing moral and political authority. Although this process had been prepared for by deep cultural shifts in the post-Darwinian period – away from transcendental religious accounts of the world and towards a naturalistic view of humanity and a general outlook thoroughly informed by science – it has nevertheless achieved itself with historically startling swiftness. Sustainable development now defines the sustainability horizon, the framing for collective concern about the longer-term global future. It shapes both the arena and the direction of aspiration – a trajectory into the distance which humanity must now deliberately pursue if it wants to avoid the dangers of resource depletion, ecosystem damage and, especially, climate change.

This has been, by any standards, a major achievement of political resourcefulness and international collaboration – perhaps the greatest since the establishment of the UN itself, and not even (as in that case) driven by the direct stress of world war. It is also in itself challengingly unprecedented. Never before have we been faced with having to devise a global regime for patterns of human life and work reflecting the real biogeophysical constraints under which we have now to operate as a natural species. Never before have we had to *think* of ourselves in that way, as a specific form of life with a global habitat and a mind-boggling technical reach. And yet we seem to be rising to the challenge. So the coming of sustainable development might seem to give grounds for real optimism. It ought surely to be encouraging that, even at this global level, we can recognize a common danger and move so comparatively swiftly to address it.

But – and it is a huge ‘but’ – such optimism is only well founded if the response really addresses the danger. If the sustainable development picture of what sustainability is about and how we should pursue it actually offers a deeply misleading model of our motivations and our understanding of the relations between present and future, the prospect is very much less reassuring. The argument I am going to develop through the book is that this is indeed the case. The sustainable development model provided a compelling in-principle picture of what was going wrong with the unbridled drive for technological progress. But because of its flawed structure, that model has an inherent liability to undercut and undermine itself when translated into a framework for practical action. Policy

efforts deployed within this framework to address the now-recognized urgent problems of climate change (above all) could well therefore be frustrated by the inherent defects of the model on which they are being understood and defended.

Why, though, should we suspect sustainable development in that way? Why should we even incline to think of it as a *structurally* deficient policy model? One can dislike its economistic picture of the issues, and many people with green concerns have done so. Such concerns can spring from a love of the natural world and a shame at humans' treatment of it which seem far away from the sustainable development language of resource usage and the management of natural capital – although undoubtedly having learnt that language was what got Greens listened to in the mainstream. But structural deficiency is much more than just the fact of an alienating discourse. What might prompt us to allege it?

I want to start from two major areas of concern which even people firmly committed to the sustainable development project will readily acknowledge. These are, firstly, the yawning gap between words and actions, between rhetoric and practice, in the field of sustainability politics; and secondly, the problematic compatibility of sustainable economies with a globally triumphant capitalism. I shall suggest that both these concerns, taken seriously, push us towards radically questioning the standard model.

The reality gap

The gap which has already opened up between the mainstream political rhetoric of sustainable development and the reality of change on the ground is very wide. It is indeed scandalously wide, if we recall what is at stake and how much warning people and governments have now had. After all, the Stern Report, while the most authoritative, is by no means the first set of injunctions from official sources about the need to alter collective and individual behaviour if lethal environmental damage is to be averted. UK governments since the later 1980s have actually been getting quite good at producing such injunctions. The quickest way to indicate the extent of the reality gap, in fact, is to look at what *Securing the Future*, the official UK Sustainable Development Strategy last updated in 2005, would actually commit us to if taken seriously, and compare it with what is happening – or, very much more typically, not happening – in practice.

This UK Strategy is a fair test case. It is the upshot of a development process led by governments of two (somewhat) different political complexions, extending over ten years or more and in its latter phases supported by extensive public consultation. In itself it is a comprehensive and well-argued document. Stripped to their essentials, the four 'priorities for UK action' identified by the Strategy are:

- 1 *Sustainable consumption and production*. The key here is 'to break the link between economic growth and environmental degradation'.

- 2 *Climate change and energy.* ‘A profound change in the way we generate and use energy, and in other activities that release [greenhouse] gases’ is recognized as necessary under this heading.
- 3 *Natural resource protection and environmental enhancement.* Acknowledging that natural resources are vital to our existence, the aim is simply ‘to ensure a decent environment for everyone’.
- 4 *Sustainable communities.* Embedding the principles of sustainable development at all levels will require communities to have ‘more power and say in decisions that affect them’.

No-one involved in pushing sustainability slowly towards political credibility over the last quarter-century could deny that having these things on the national agenda at least represents an offer to take the issues seriously.

The four priorities are of course closely interconnected. Consumption and production will be sustainable only to the extent that they minimize greenhouse gas emissions and environmental degradation, and only if communities have appropriate economic and social arrangements in place will such sustainable consumption and production be possible. So, taking all that interlinkage as read, what *order* of action (that is, broadly governmental action, though premised on appropriate changes in the corporate sector, in the institutions of civil society and by people at large) would genuinely answer to the announced intention in each case?

One does not have to be a fanatical green activist, but only someone alive to the real size of the problems, to see that, as regards sustainable consumption and production in general, ‘breaking the link between economic growth and environmental degradation’ would require not just increasing the ecological efficiency of products and services across their whole lifespan, but confronting consumption choices in key areas (personal travel, food sourcing and domestic energy supply) with their full environmental costs, and investing seriously in more sustainable forms of provision in all these areas. Specifically in relation to climate change and energy, a change ‘profound’ enough to meet the case would mean not just investing massively in renewables and supporting energy efficiency – we would also need to be heavily taxing aviation fuel, creating an integrated public transport system through significant new investment, rolling out mandatory congestion charging to all major cities, and using a whole raft of other incentives and penalties to encourage a shift away from private car usage. Protecting natural resources genuinely recognized as ‘vital to our existence’ would require no new green-field housing developments, no new airports or runways, and no more road-building beyond present commitments. Nor would the sustainable communities required to support these changes be possible without fiscal incentives to decentralize workplaces, promote genuinely local production for local needs and transfer significant revenue-raising powers from central to local government.

Another way of putting all this would be to say that there is no hope whatever of a set of technical fixes allowing us to escape the need for major change. Consider, for instance, what would be involved in a real attempt to ‘break the link between economic growth and environmental degradation’. The Strategy talks hopefully and almost exclusively in this connection about increasing the ecological efficiency of products and services across their whole lifespan – that is, reducing the ecological impact of unit production. To remind ourselves of quite how hopeful this sort of aspiration is, recall the ‘Ehrlich equation’:

$$I = PCT$$

where I is total environmental impact, P is level of population, C is per capita consumption and T (the technology variable) stands for the environmental intensity of consumption (as what is called ecological efficiency or resource productivity increases, so that each unit of consumption uses up less environment, the value of T decreases). What the equation formalizes is the essential structure of the environmental crisis: it says that the more of us there are, consuming the more *stuff* requiring the more biospheric resources to produce, distribute and eventually dispose of it, the worse the ecological overload gets. This is a no-brainer, but the formalized version allows us to highlight some points with helpful starkness. Thus Paul Ekins has used it to emphasize what would actually be involved in reducing environmental impact by 50 per cent over the period 2000–2050 (a target given credence by officially sanctioned aspirations to reduce greenhouse gas emissions, for example, by 60 per cent on 1990 levels by mid-century). Assuming a world population increase from around 6 billion to around 9 billion (probably an underestimate) and an economic growth rate of 2–3 per cent (modest in conventional terms, but actually yielding a quadrupling of notional per capita consumption over fifty years), some very simple arithmetic shows that meeting this target would require the environmental intensity of production, T , to decline by a factor of about twelve, or in other words the environmental efficiency of unit production to rise by more than 90 per cent over this fifty-year period.

Now, although some genuine progress has been made over the last decade or so in improving resource productivity, this sort of target just looks unachievable – whether we are looking at either its technological or its political feasibility. As the Sustainable Development Commission observed in a recent authoritative report:

... the overwhelming consensus amongst academics, think-tanks and NGOs is that resource productivity will not, on its own, deliver the desired reconciliation between the pursuit of economic growth and the non-negotiable imperative of learning to live within the Earth's biophysical constraints.

A real commitment to decoupling current production and consumption patterns from environmental degradation would involve, inescapably, some effective intervention in the value of the *consumption* variable *C*. Genuinely sustainable consumption, that is, must involve both consuming differently and (at least in the West) consuming *less*. It means consumption which satisfies need but does not cater to greed, is not constrained by current environmentally damaging patterns of international trade, does not depend on using up irreplaceable raw materials and ecological resources, does not generate unassimilable wastes, and is not artificially boosted by an advertising industry devoted to making invention the mother of necessity.

Of course, nothing remotely like this is happening, either here or in response to any of the four priorities identified. Nor, in fairness (whatever one might sometimes feel in exasperation), can this be blamed on government. Only an exceptionally brave democratic government will get out very far ahead of its electorate in any new direction of thinking or behaviour, and the public at large does seem to exhibit pretty much the same order of disjunction between rhetoric and reality on the sustainability issue. A UK government public attitudes survey in the early 1990s, for instance, indicated that, while 80 per cent of people believed there is too much traffic, only 25 per cent had actually tried taking up alternatives to the private car. And nothing much has changed since, in actual practice. DEFRA's 2007 survey of public attitudes and behaviour towards the environment showed three-quarters of the population believing that reduced car usage and air travel would have a significant impact on the UK's carbon emissions – but more than 50 per cent of people who take short-haul flights declining to feel guilty about it. Not walking the talk on sustainable development is, it seems, a very general failing.

This reality gap is certainly an important datum. The question is, what does it tell us? Many who endorse the sustainable development paradigm regard it as frustrating, certainly, but not fatal to their hopes. They would say it shows merely that we have not yet tried very hard to go beyond the rhetoric, to translate welcome theoretical endorsement, and perhaps a general shift of perception, into change on the ground. There are various explanations for why not, pointing to quite genuine problems of engrained habit, fear of the new, institutional inertia and the disincentives confronting individuals who might try to act on their own.

There is also a more general argument. The period from the 1972 Stockholm Conference until comparatively recently saw considerable progress, at least in the OECD countries, on what the former environmental campaigner and senior government adviser Tom Burke calls 'the easy politics of the environment'. This agenda comprises broadly the issues of air and water quality, recycling, chemical and radioactive pollution, and endangered species. Remedial action in all these areas, as Burke notes, has tended to receive broad public support once the issues are understood. Such action offers solutions which can cut costs in the medium

term and which can typically be seen to produce a lot more winners than losers. It can also be seen as addressing itself to matters of fairly minor political significance – things on which everyone could hope to agree, after a little rational consideration, since crucial questions of ownership, power and deep-seated expectations have not yet been raised.

But while such progress is welcome, the easy politics is not, as the label suggests, really the problem. What has been looming more and more threateningly since the Rio de Janeiro ‘Earth Summit’ in 1992, by contrast, is the *hard* politics of the environment: climate change, soil loss, deforestation, the state of the oceans and the threats to biodiversity at large. At stake in each of these arenas is not just the condition of one or more of the Earth’s major ecological systems, but also established patterns of global economic and cultural hegemony. In these problem areas, the issues are often powerfully contested – not just politically and culturally, but scientifically too – and any real attempt to tackle them is likely to yield, in the short to medium term at any rate, more losers than winners. (It certainly threatens to make losers of societies and groups who, however the actual numbers stack up, wield far more global power than the potential winners).

The advanced societies have therefore, by and large, been shirking the plunge. The hard politics is now imminent and inescapable. Unsurprisingly, however, a rhetoric expressing the steadily accumulating rational persuasiveness of the environmental case has hitherto largely outstripped the reality of what has been attempted in practice. But this problem (it is claimed) is not insuperable once the collective will is there, and as such the current reality gap is one which emergent events like Hurricane Katrina and the Stern Report will now begin to push us across.

But what if they don’t? How long can we wait to see? And what if the reason why they don’t is that what I have called the reality gap is after all not a temporary phenomenon, an unavoidable phase in the process of mainstreaming sustainability, but a structural feature of the sustainable development model itself? What if it reflects a mirage-nature in sustainability goals themselves – a characteristic trick of constantly receding as we try to approach them – and does so because that is the underlying truth of our relation to them? In that case, we might well wait until it is far too late for action to make enough difference before this truth became so plain as to be unignorable.

The stakes are just too high, in other words, not to give some real attention at this stage to what a critique of the standard model in these terms might have to say for itself.

Working with the grain of capitalism

Such attention must, however, recognize the context for any plausible critique. That is that the capitalist system is now a given.

For a long time many people thought, or hoped, that proper attention to our environmental responsibilities would have to mean an end to this system, which had so plainly generated ecological crisis. This has been the implicit, and often explicit, political rationale of a great deal of vigorous environmental campaigning over the past thirty years. But the overthrow or voluntary abdication of capitalism on environmental grounds was never remotely likely – and now, given the political and economic history of the last twenty years, such a prospect looks merely risible. Concerned people of all shades of green simply need to face this fact. It is certainly a premise of this book, and one for which I shall not spend any time arguing. For good or ill, the global market economy is where we have to operate to save the planet: it's there, or nowhere.

This is not in any sense to *exculpate* capitalism. There is no denying that certain features of the major capitalist societies of the past century, associated with a peculiarly blind form of short-term thinking, have been heavily responsible for the present ecological crisis. Principal among these features has been the consumerist materialism which these societies have encouraged, with its artificial creation of new wants not emerging spontaneously through the natural co-evolution of culture and material circumstance, but deliberately manufactured by hectic advertising in order to inflate the levels of profitability at which the whole system operates. As better communications and geopolitical change have spread emulation of this socio-economic form more and more widely around the world, demands on raw materials and ecosystem resources and services have increased exponentially (to the extent that the annual global production of a century ago is now achieved every fortnight)*, and the biosphere's resilience has been stretched towards, and in some cases beyond, breaking point. Indeed, environmental limits are not (as they are often represented) something which we will be running up against at some point over the next few decades unless we change our ways. The shortness of time before predicted collapse measures also the extent to which the tensions straining towards collapse now pervade the system. We have in effect already reached the limits – they press on us in the form of systemic volatility and instability across a whole range of circumstances under which business and society increasingly have to operate.

In bringing us to this pass, capitalism has responded to, and in turn has helped to widen, the post-religious gap in the human soul which the modern world has tried to fill with more and more *things* – with material possessions and (imagined) security as a substitute for life-meaning and real human purpose. That gap, or void, is of its nature unfillable by such means – something we all know, deep down, even as we succumb to the latest seduction. Its characteristic ever-craving emptiness has thus itself become a powerful driver for the hypertrophied version

* I cannot now recall where I came across this comparison, which has, however, stuck in my mind as such statistical nuggets will. Anyone who can't accept it without a reference is free to discard it – the general line of argument remains unaffected.

of capitalism which currently dominates the world. This capitalism, powered by self-deception, depends on a hysterical refusal to see what it is doing and to face the consequences for the biosystems in which it is embedded.

But none of this alters the fact that it is still capitalism which must mend itself and clear up its own mess. There is no other help to call on. The capitalist nexus has now been assimilated into the human ecology of the world. Increasing recognition of these realities informs the work of respected figures like Paul Hawken and the Lovinses in the US, and in the UK of key thinkers associated in particular with Forum for the Future. Books such as Paul Ekins's *Economic Growth and Environmental Sustainability* and, more recently, Jonathon Porritt's magisterial *Capitalism as if the World Matters* argue in detail that we now have to create the conditions for what might be called 'sustainability capitalism' if there is to be any hope of tackling the world's steadily worsening environmental situation.

If sustainable development is to be our paradigm of action in pursuit of sustainability, therefore, that requires at minimum that sustainable development run *with* the deep grain of capitalism, rather than actually *against* it. But does it? Is it actually compatible with the dynamic strengths and forces within this system, through which any future at all will have to be realized?

Those who have so far pushed the case for a new 'sustainability capitalism' certainly seem to think so. For them, the necessary transition has two principal and complementary tracks. The first involves governments in setting a new framework of taxation and regulation capable of tilting the operations of the market towards the delivery of sustainable outcomes. The second involves corporations themselves adopting criteria of business excellence which result in sustainable products, processes and sourcing patterns. Action along both tracks is seen as a matter of deliberately bringing in the longer-term perspective as a corrective to short-termism. The perverse imperatives of the currently dominant business model are tamed by building in structural features representing the longer-term requirements of climate and ecosystem stability, maintenance of natural resource levels, and the associated shifts towards more equitable patterns of distribution.

At the heart of this 'business case' approach is the good sense it is supposed to make for firms to keep ahead of the curve and the competition by anticipating change. Forward-looking businesses see ecological and resource pressures coming, and improve the eco-efficiency of their sourcing, production and distribution processes in advance. Similarly, they see pro-sustainability tax and regulatory changes coming, and reconfigure their operations to facilitate easier compliance. In both these ways they boost the bottom line by reducing or avoiding costs. At the same time, such behaviour will strengthen a firm's reputation with the growing proportion of its customers and other stakeholders who are persuaded by the sustainable development case, thus helping to build product loyalty and also to recruit and retain committed staff. Most importantly, firms on the lookout for sustainability-enhancing innovation in processes, products and services will gain

powerful first-mover advantages in increasingly volatile markets. All this, it is argued, means that the pursuit of sustainability, far from crippling competitiveness, delivers increased shareholder value.

This argument is seeking to make an absolutely vital linkage. But crucially, it only seems to achieve it by taking for granted the feasibility of some assumptions about future developments which have to be extremely robust in the accounting sense. To treat costs avoided (which may of course entail significant costs *of* avoidance) responsibly and persuasively as savings in a company reporting context, for example, you need much more than a guesstimate of their order of magnitude. To invest responsibly in specific sustainability-relevant innovation, when such investment may hazard alternative profiles of profitability, you need more than vague ideas or pious hopes about the actual sustainability value of particular new products and services. The business case and the governmental framework-setting case in effect mirror and reinforce one another in their dependence on the fundamental idea of the standard sustainable development paradigm: *that we can get real leverage on the short term through sufficiently reliable prediction of the longer term*. The government or firm which is most responsible about sustainability is the government or firm which responds most alertly and sensitively to the signals that bounce back to it from the future.

The trouble with all this is twofold. First, there *are* no signals back from the future – only signals which the present sends itself about what it thinks will happen in the future; and beyond the very short term, such signals are inherently unreliable, a point which I will develop in much more detail in the next chapter. Second, and crucially, the whole point of capitalism – the reason why it has been responsible for such an unprecedented explosion of human welfare, all told, over a mere couple of centuries – is precisely that it trades on this reality of the human condition.

Historically, capitalism brought together newly won liberties of individual action, slowly accumulated surplus value and some key technological breakthroughs in a spontaneously created system for dynamic response to the inevitably short-term nature of our knowledge. It thus became the most powerful material form yet to have emerged of the exploratory open-ended learning and adaptation which is our species' natural way of dealing with its epistemic relation to the future. The source of creative energy in this system is its generation of competitive diversity in response to widely distributed and largely tacit knowledge of immediate drivers and constraints. Its essential strength is the flexibility through which this multiplicity resolves itself iteratively forwards in renewed multiplicity at (normally) higher levels of material satisfaction. Products and services, all making a slightly different bet on what will run, on what the near future will endorse, turn out to reward some producers and squeeze the margins of others; these outcomes reorient the next round of production towards reflecting emergent patterns of behaviour and satisfying emergent patterns of need, patterns which were strictly unpredictable at the earlier stage because their emergence itself depended on how things actually panned out. And it is because we all know (in practice, as the common basis of our daily lives) just how little we can

really second-guess the future that this constant efflorescence of dynamic diversity goes on reproducing itself.

Its focus on the short term, in other words, is not a curable bad habit but the natural, proper and inevitable *habitat* of capitalism. Entrepreneurs succeed by addressing themselves to a moving horizon of comparatively short-term opportunity – a horizon which as it moves, but only as it moves, carries us into an indeterminable future with which the whole social enterprise is always learning just in time to cope. It is surely clear that only by working with the grain of these very deeply embedded system characteristics can we hope to effect the key linkage of increased shareholder value and improved resource productivity in successive presents, on which the possibility of any genuinely sustainable capitalism must depend. But the currently standard sustainable development model of getting leverage on the short term by pursuing longer-term obligations and targets seems to run directly across that grain.

So here are two substantial straw-bales on the wind. Both the reality gap and the poor fit with the deep structure of capitalism suggest that the sustainable development model may be more than just rather ineffectual so far. It is at least plausible that the problem may be something much deeper. We must now turn to exploring what that problem might be.