
Sustainable Development (1987–2005): An Oxymoron Comes of Age

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ABSTRACT

The paper examines the conceptual history of 'sustainable development', from the Brundtland Commission's definition in 1987 to the present day. It argues that the superficial consensus that has characterized much of the early debate has given way to a series of parallel but distinct discourses around sustainability. The underlying assumptions behind much of the discussion are assessed, as is the move, after the first Earth Summit (1992), to focus on *rights*, rather than *needs*, as the principal line of enquiry. This analytical attention to rights is linked to the neo-liberal economic agendas of the 1990s, and the growth of interest in congruent areas, including human security and the environment, social capital, critical natural capital and intellectual property rights. The paper argues that increasing attention to questions of biology and science studies has strengthened this 'rights-based' approach, as well as interest in the linkages between 'natural' and 'human' systems, including attention to questions of environmental justice. It is clear that issues of global environmental justice are as important as they were when the concept of 'sustainable development' was in its infancy, but the new material realities of science and the environment in the 21st century demand a re-engagement with their social consequences, something which is largely ignored by the (market) liberal consensus. Copyright © 2005 John Wiley & Sons, Ltd and ERP Environment.

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Sustainable Development

THE TERM 'SUSTAINABLE DEVELOPMENT' CAME INTO USE IN POLICY CIRCLES AFTER THE PUBLICATION of the Brundtland Commission's report on the global environment and development in 1987. This report led directly to the term 'sustainable development' passing into policy discourse, if not into everyday language. It was also the first overview of the globe, which considered the environmental aspects of development from an economic, social and political perspective, a marked advance

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on the scientific work of UNESCO's Man and the Biosphere Program (MAB) almost a decade earlier. Herman Daly famously commented that sustainable development was an 'oxymoron'. Now, 18 years after it was first introduced, the oxymoron has come of age. This paper considers whether, having achieved its majority, 'sustainable development' has a future.

The Brundtland Report opened the way for non-governmental organizations (NGOs) to be considered a serious element in environment and development issues, a process that culminated with the first Earth Summit in Rio de Janeiro in 1992 (Adams, 1990; Redclift, 1987, 1996). Since the path-breaking deliberations of the Brundtland Commission, the expression 'sustainable development' has been used in a variety of ways, depending on whether it is employed in an academic context or that of planning, business or environmental policy. As a result, during the last 18 years we have been confronted with several different discourses of 'sustainable development', some of which are mutually exclusive. For example, campaigners for greater global equality between nations, huge international corporations and local housing associations have all had recourse to the term 'sustainable development' to justify, or embellish, their actions. It is often unclear whether these different perspectives are complementary or mutually exclusive. Exasperation with the limitations of much of the discussion has not been confined to the political Left: commentators such as Beckerman have argued that muddled thinking has seriously prejudiced the environmental case (Beckerman, 1994).

We can begin our analysis of these different discourses by returning to essentials. With hindsight we can see that each scientific problem resolved by human intervention using fossil fuels and manufactured materials is conventionally viewed as a triumph of management, and a contribution to economic good, when it might also be seen as a future threat to sustainability. In the 1970s there was a fear that our major environmental problems would be associated with resource scarcities (Meadows *et al.*, 1972). At the beginning of the 21st century we are faced by another challenge: that the means we have used to overcome resource scarcity, including substitution of some natural resources, and 'cleaner' environmental products and services, may have contributed to the next generation of environmental problems (Huber, 2000). This realization provides an enormous challenge to social scientists and others who value critical thinking, and who acknowledge the centrality of the environment and sustainability in a radical programme for bringing about substantial changes in late capitalism.

The Brundtland Commission defined sustainable development as '... development that meets the needs of the present without compromising the ability of future generations to meet their own needs' (Brundtland Commission, 1987). This definition has been brought into service in the absence of agreement about a process that almost everybody thinks is desirable. However, the simplicity of this approach is deceptive, and obscures underlying complexities and contradictions. It is worth pausing to examine the confusions that still characterize the discussion of sustainable development.

First, following the Brundtland definition, it is clear that 'needs' themselves change, so it is unlikely (as the definition implies) that those of future generations will be the same as those of the present generation (Redclift, 1993). Obviously development itself contributes to the characterization of 'needs', by helping to define them differently for each generation, and for different cultures. Is development, or economic growth, the primary determinant of changing needs, and to what extent does our consciousness of changes in our needs or 'wants' influence how they are met? These are questions that are rarely asked outside radical Green circles, but carry implications for all of us.

This raises the second question, not covered by the definition, of how needs are defined in different cultures. Most of the 'consensus' surrounding sustainable development has involved a syllogism: sustainable development is necessary for all of us, but it may be defined differently in terms of each and every culture. This is superficially convenient, until we begin to ask how these different definitions match up. If in one society it is agreed that fresh air and open spaces are necessary before development can be sustainable, it will be increasingly difficult to marry this definition of 'needs' with those of other soci-

eties seeking more material wealth, even at the cost of increased pollution. It is precisely this kind of trade-off that is apparent in developing countries today, when the gains from accelerated economic growth promise immediate rewards, and environmental mitigation appears largely to benefit the rich world. Furthermore, how do we establish which course of action is *more* sustainable? Recourse to the view that societies must decide for themselves is not very helpful. (Who decides? On what basis are the decisions made?)

There are also problems that strike at distinctive ontological positions. Much of the mainstream debate about sustainable development has ignored culturally specific definitions of what is sustainable in favour of the rather exclusive system of knowledge favoured by the dominant science paradigm (Norgaard, 1988). It is a paradox of our age that as more people in the developed world seek solutions to problems outside the conventional 'loop', in complementary medicine, lifestyle 'downsizing' and supporting alternative food networks and 'farmers markets', it is still routinely assumed that civil societies are pursuing the same social and cultural goals. Social fragmentation and disaffection from 'modernity' have been pronounced since 1987, most notably in the responses to September 11 and the challenge posed by fundamentalist religions (in both the West and the East). Curiously, these profound political and cultural changes have had only a marginal effect on the way in which 'sustainable development' is discussed. There is still considerable confusion surrounding *what* is to be sustained that different discourses of sustainable development sometimes fail to address.

What is to be Sustained?

Some environmental economists argue that the natural stock of resources, or 'critical natural capital', needs to be given priority over the flows of income that depend upon it (Pearce, 1991). They make the point that human-made capital cannot be an effective substitute for all natural capital. Sustainable development is described as 'strong', rather than 'weak', when it is most difficult to substitute human-made capital for nature. If our objective is the sustainable yield of renewable resources, then sustainable development implies the management of these resources in the interest of the natural capital stock. If we can measure 'critical natural capital' we are better placed to make choices about the level of substitution of human-made for natural capital (Ekins, 2003).

This raises a number of issues, which are both political and distributive. First, we should not lose sight of the fact that natural capital, 'critical' or not, is usually owned by individuals, groups or corporate interests. The defence of common property resources in the face of relentless market pressures has been the source of considerable political struggle, much of it intensified since the late 1980s, and the triumph of the neo-liberal agenda in international policy circles. The character of this social resistance has been recognized with the epithet 'social capital', a term that frequently underplays political struggles and has the imprimatur of the World Bank (Bebbington *et al.*, 2004). The conservation of natural capital cannot be separated from some key distributional questions. Who owns and controls genetic materials, and manages the environment? What is the relationship between the 'environmental services' performed by low-income populations, and their future stake in the conservation of resource systems? Far from taking us away from issues of distributive politics, and political economy, a concern with sustainable development inevitably raises such issues more forcefully than ever (Redclift, 1987).

The question 'what is to be sustained?' can also be answered in another way. Some writers argue that it is present (or future) levels of production (or consumption) that need to be sustained. The argument is that the growth of global population will lead to increased demands on the environment, and our

definition of sustainable development should incorporate this fact. At the same time, the consumption practices of individuals will change too with rising incomes, especially from a very low base. Given the choice, most people in India, China or Brazil might want a television or an automobile of their own, like households in the industrialized North. What prevents them from acquiring one is their low incomes, their inability to be effective consumers and the relatively 'undeveloped' infrastructure of poor countries. If countries such as China and India continue to exhibit high long-term rates of economic growth, as they have during most of the last decade, then their populations' expectations of their needs will change radically.

There is nothing inherently unsustainable in broadening the market for TV sets or cars, so how would we begin to assess the implications of these massive consumer trends for 'sustainable development'? The different discourses of 'sustainable development' have different answers to this question. Many of those who favour the sustainable development of goods and service that we receive through the market, and through business activity, would argue that we should broaden the basis of consumption. Others would argue that the production of most of these goods and services today is inherently unsustainable – that we need to 'down-size', or shift our patterns of consumption. In both developed and, increasingly, developing countries, it is frequently suggested that it is impossible to function effectively without computerized information or access to private transport.

The different ways in which 'sustainability' is approached, then, reflects quite different underlying patterns of everyday behaviour (or *underlying commitments*), commitments that are seldom questioned. People define their 'needs' in ways that effectively exclude others from meeting theirs, and in the process can increase the long-term risks for the sustainability of other peoples' livelihoods. Most important, however, the process through which we enlarge our choices, and reduce those of others, is largely invisible to people in their daily lives, although understanding this process is central to our ability to behave more 'sustainably'.

Unless these processes are made more visible, 'sustainable development' discourses beg the question of whether, or how, environmental costs are passed on from one group of people to another, both within societies and between them. The North dumps much of its toxic wastes, and dirty technology, on poorer countries, and sources many of its 'needs', for energy, food and minerals, from the South. At the same time the elevated lifestyles of many rich and middle class people in developing countries are dependent on the way in which natural resources are dedicated to meeting their needs (Martinez-Alier, 1995). Finally, of course, social inequalities are also intergenerational, as well as intragenerational: we despoil the present at great cost to the future. Discounting the future, valuing the present above the future, is much easier to do in materially poor societies where survival itself may be at stake for many people.

There are other forms of inheritance from the past. Economics developed, historically, around the idea of scarcity, and the role of technology was principally that of raising output from scarce resources. Among other benefits of economic growth was the political legitimacy it conferred within a dynamic capitalist economy on those who could successfully overcome the obstacles to more spending, and 'create' more 'wealth'. This assumption of scarce resources and technological benefits sits uneasily with sustainability in the industrial North today, and underlines the difficulty in reconciling 'development' with 'sustainability'. It strikes at the legitimization of only one form of 'value', albeit the principal one, within capitalist, industrial societies. It also leaves undisturbed the meaning we attach to 'wealth', while it is clear that much wealth is created in ways that undermine sustainability. The German sociologist Habermas expressed this view forcefully, in asking '... Can civilization afford to surrender itself entirely to the ... driving force of just one of its subsystems – namely, the pull of a dynamic ... recursively closed, economic system which can only function and remain stable by taking all relevant information, translating it into, and processing it in, the language of economic value ...' (Habermas, 1971).

The Corporate Response to Sustainable Development

The logic and disciplines of the market constituted a source of potential conflict for Habermas and other radical social scientists, precisely because they appeared to devalue the intrinsic qualities of nature – which placed it apart from market capitalism. On this reading sustainable development could not be accommodated to market forces; the circle could not be ‘squared’. To others there was no inherent problem in pursuing sustainable development within the logic of the market economy. Green capitalism was a possibility if not a reality (Welford and Starkey, 1996). Indeed, for some business interests and representatives of corporate business, sustainable development was a necessary further stage in the development of capitalism, to be embraced rather than denied.

One of the principal features of *Agenda 21*, the framework for action proposed at the Earth Summit of 1992, was the call for partnerships between business and environmental groups. The Business Council for Sustainable Development, as well as the International Chamber of Commerce, represented the perspectives of global business at Rio. However, the ‘official’ corporate response to the Rio Conference, representing the views of over 100 international companies, was contained in a publication that was stimulated by the Earth Summit itself. *Changing Course* (Schmidheiny, 1992) helped conceptualize the phases through which corporate involvement in the environment had passed: the prevention of pollution in the 1970s, measures to encourage self-regulation in the 1980s and a concern to incorporate sustainability into business practices in the 1990s (Murphy and Bendell, 1997). The 1990s and the period post-Rio was seen as a turning point in the relation between corporate business and the environment, in which environmental concerns (at least in the case of the largest global players) needed to be internalized, and made a central part of corporate governance.

The public stand taken by some large corporations in the 1990s was more visible than previously, and designed to open up new markets, rather than defend existing ones. One example, cited by Adams (2001) in his consummate review of the Rio process, is that of B&Q, the British hardware chain, which in the mid-1990s argued that the environment was of central concern to shareholders, staff and customers alike. It began to be recognized that the products that customers bought were looked upon as part of the natural environment, as well as the built environment, and a corporate response needed to fully acknowledge this fact. At one level this might lead corporations towards forms of ‘green consumerism’, which pointed consumers to the environmental standards met by different products, and persuaded companies of the public relations benefits of a ‘green’ image. At another level were more fundamental questions about the material nature of products and services themselves, and the extent to which ‘necessary’ environmental costs could be internalized.

This second thread has been given the label ‘ecological modernization’ (Janicke, 1991; Mol, 2001). During the last two decades, this label has been applied freely to several interrelated processes, and has taken on the ambiguity of terms such as ‘sustainable development’ itself. Essentially, ecological modernization refers to the way in which new, cleaner technologies can be utilized effectively by businesses, within a policy framework that is conducive to more sustainable practices, and which holds out the prospect of a ‘win/win’ situation: stimulating economic growth without increasing pollution. The leading examples were in consumer markets where environmental costs such as transport were often heavy, and there were clear advantages in streamlining production systems. This approach – sometimes referred to as ‘industrial ecology’ or ‘life cycle assessment’ (LCA) – had profound effects for companies such as Procter and Gamble and Unilever, where the commercial benefits were quickly grasped (Ayres and Simonis, 1995).

In other cases, large companies sought to establish themselves beyond the boundaries of ‘domestic’ environmental regulation and stringent controls. Garcia Johnson (2000) shows how some transnational

corporations, stimulated by their experiences on the home market, have even sought to ‘export’ higher environmental standards: ‘If multilateral corporations can establish the kinds of rules that favour the technologies and management approaches that they have developed through years of struggle in the United States, they will have an advantage over their competitors from developing countries’ (Garcia Johnson, 2000, p. 1).

Taking as his example the US-based chemical industry, Garcia Johnson argues that companies are actively exporting corporate voluntarism in Brazil and Mexico. Where this is true it might be looked upon as a cause for concern as much as a cause for optimism – since, as he acknowledges, spreading good practice in environmental governance is linked with the disadvantaging of Third World companies on global markets.

Critics of corporate ‘greening’ have sought to distinguish between the rhetoric of corporate environmentalism and the reality. Stephen Bunker (1996), for example, has criticized the so-called ‘green Kuznetz curve’, the view that as economies develop they become more sustainable and produce less waste. Bunker argues that ‘dematerialization’, as seen from the vantage point of industrial ecology, is a much more limited process than its advocates acknowledge, suggesting that materially ‘lighter’ products often have a greater proportional impact on the environment. Cleaner industry in one location can also mean the redistribution of environmental risks to other locations, and the process of ‘greening’ industry is neither as transparent nor as disinterested as many corporations avow.

Nevertheless, the 21st century has seen the development of various corporate responses to sustainable development, in addition to those discussed above. Perhaps the most important is that of product certification – through which industry endorses the more sustainable use of resources, and provides accreditation for businesses that meet defined standards of compliance. An example is the World Wide Fund for Nature (UK), which established the ‘1995 Group’ of companies, in an effort to make the timber industry more sustainable. The management systems introduced defined targets and devised a system of informal self-regulation, under the control of managers appointed for the purpose. The benefits of achieving more sustainable production of wood, via the Forest Stewardship Council, included the right to use the logo of the FSC on appropriate products (WWF, 1996).

All such schemes suffer from several weaknesses, which carry implications for our argument about the negative impacts of globalization on the environment. First, to be effective, certification programmes need to address problems in the supply chain, in the ‘real world’ situations where forest products are harvested unsustainably, on the back of great poverty and a lack of political representation. The history of these extractive economies, and their exploited labour processes, provides many examples of the inability (or unwillingness) of large manufacturers to dictate conditions in the forest economy. The chewing gum industry in the United States, dominated from the 1920s by Wrigley’s, depended for decades on suppliers who routinely exploited the forests for *chicle*, the natural resin that formed the basis for gum during the first half of the 20th century (Redclift, 2004). Today the certification of *chicle*, like many other forest products, has arrived too late to prevent wide scale environmental destruction and the human misery that accompanied it.

Second, the evidence suggests that, at least where natural resources are sourced from a distance, only a small minority of businesses are conducted in a more ‘sustainable’ way; the majority continue to operate on the same basis as before (Adams, 2001). Indeed, there has been a strong and effective ‘backlash’ against calling businesses to account over their environmental performance, stimulated by the resurgence of new Right Wing pro-market ideologies and pressures. At the same time the precarious nature of many developing country economies, their continued indebtedness and poor governance, have made it difficult to enforce higher environmental standards. From the vantage point of California, or London, it is easy to be convinced of the benefits of ‘dematerialization’, of cleaner industry and more sustainable products. The view from much of the South is often at variance with this.

Sustainability Since Rio

After the 'Earth Summit' in Rio in 1992, the concept of 'sustainability' seemed to exist mainly within quotation marks. It has already been suggested that the power of the concept of sustainability lies in the *discourses* surrounding it, rather than in any shared substantive, or heuristic, value it may have (Becker *et al.*, 1999). It makes sense, then, to examine these discourses closely. It is the contention of this paper that the idea of sustainable development, having achieved its majority, is now being deprived of the full rights of an adult citizen. In place of radical new openings, which force us to reconsider what is meant by sustainable development, the term is usually attached uncritically to existing practices and policies that might benefit from 're-branding'. In what ways might the re-consideration of sustainable development lead to significant departures?

Changes in global communication and genetics have altered our relationship with the environment so substantially that it would be unwise to write them out of the 'nature' we describe as 'sustainable' (Escobar, 1996). In the 21st century it makes sense to consider *ourselves* as part of the discourse of sustainability. During most of the late 20th century, sustainable development evolved as a set of observations about nature, and our relations with it, but it was clear to many that the key to understanding this lay in the relationships that existed *within* and *between* human societies. 'Nature' as something external to us provided a rallying point for critics of economic policies that were clearly unsustainable. For others, dissatisfaction with the anodyne way in which 'sustainable development' was described led to a series of reflections about the human species *as part* of nature.

The re-emergence of market economics, and neo-liberal policies in the 1980s, with which the measurement of sustainability is associated, clearly marked a watershed for environmental politics. Increasingly 'sustainability' was detached from the *environment*, and environmental sustainability was confused with wider questions of equity, governance and social justice, which served to shift political discussion to different quarters.

Earlier discussion of 'sustainability' and 'sustainable development' had been preoccupied with *needs*, particularly (but not exclusively) human needs. As the sustainability debate became more mainstream in the 1980s, much of it was influenced by neo-classical economics, and an attempt was made to translate environmental choices into market preferences, following neo-liberal orthodoxy. Increasing attention to measurement was a necessary corollary of this trend. A search had begun for practical ways in which sustainability could be built in to existing policies and planning (Jacobs, 1991; Rydin, 1996; Roberts, 1995; Owens, 1994). This broadened the use to which sustainability was put, and opened up a new discourse around development with appeal to policy professionals and business.

Perhaps in response to the incorporation of environmental economics into more 'mainstream' policy, perhaps to compensate for a history of neglect, much of the discussion of sustainability as a political process was taken up by disciplines other than environmental economics. One consequence is that the sustainability discussion moved, almost imperceptibly, away from human needs, the original 'Brundtland' Commission's concern, to that of *rights*. The emphasis on both human and non-human rights, in turn, drew the discussion of sustainability towards other more 'orthodox' concerns of the social sciences: questions of power, of distribution and of equity (Mason, 1999; Barnett, 2001; Martinez-Alier, 1995).

The preoccupation with policy notwithstanding, the links between the environment, social justice and governance had become increasingly vague in sustainable development discourses, and the structural relationships between power, consciousness and the environment had become blurred. In the search for a more inclusive view of sustainability, political rhetoric has often replaced the discussion of environmental issues.

The sustainability debate reached the mainstream as environmental, and other campaigning groups, sought to distance themselves from neo-liberal solutions to environmental and social problems. However, environmental discourses which claim precedence for 'rights', and which are conducted at high levels of abstraction and geographical aggregation, are often only loosely connected with cultural choices and political decisions on the ground. At the same time the criticism of market economics, which has characterized international non-governmental organizations (NGOs), presents problems of its own.

Opposition to neo-liberalism is at its most effective when it moves beyond a critique of institutions to embrace new networks of global communication. This was evident in the 'virtual', but very *material*, opposition to the World Trade Organisation (WTO) talks in Seattle in 1999, and later in the street protests in Washington, in Prague and in the Netherlands the following year. These 'anti-globalization' protests coalesced around the view that current economic growth is both socially regressive and environmentally unsustainable.

These 'oppositional' discourses on the environment represent the communicability of different codes, but frequently depend on the same formal terminology surrounding sustainable development. They mark *practices* of communication, which themselves carry symbolic and political meanings – 'democratic power', 'empowerment', 'natural justice' – and which are seen by their advocates as an alternative to the bankruptcy of elective democracy (Esteva, 1999; Langhelle, 2000). These new environmental discourses reflect changes in globalization, genetic engineering and the communicability of information via the Internet, all processes that were much less developed at the time of the Brundtland Commission's report in 1987. They also demonstrate vividly the importance of new spatial inequalities, and the weakness of many existing social ties. In this sense they may be constructed as 'post-sustainability' discourses.

The key to understanding new sustainability discourses lies not only in their symbolic meaning but also in advances in technology, and therefore communication, itself. The prime example is that of the Internet. Another example is prompted by recent revolutions in both human and animal genetics. At the same time as global communication is being revolutionized, radical changes have occurred in 'nature' itself, which appear to have blurred the species barriers. Species boundaries have become subverted and, in the view of some commentators, the 'new biology' is altering what it means to be an individual, and to participate fully in civil society (Finkler, 2000).

The formal challenge of the Earth Summit in Rio de Janeiro in 1992 was nothing less than the governance of the global system according to newly acknowledged sustainability principles. At the time, this meant the global environment, and the institutions that were established at the first Earth Summit soon became vested with expectations that they could not possibly meet. Within the last two decades the global system has been enlarged and reconstituted. Institutions such as the World Trade Organization (WTO), the Human Genome Project and the World Wide Web are now integral to it. They are as integral to the global system as the Global Environment Facility or the United Nations General Assembly. None were in existence in 1987.

In this new global system territoriality is no longer a necessary property of the environment, but a conditional feature of it. It is not only shared territory which binds people together, and prompts calls for universal rights to be extended to all. Persistent calls for 'natural' rights to be protected, and for better governance of the environment, have to be placed within a new context, in which the scales of justice have been widened and in which 'sustainability' is a property of different, contending, discourses. The first of these contending discourses is concerned with 'globalization' (Castells, 2000).

Globalization and Sustainability

The Rio Declaration (*Agenda 21*) in 1992 reflected an increasing concern with global environmental issues: a concern that was to lead to the establishment of a number of institutional mechanisms to try and ensure that environmental problems could be managed more effectively. Behind this concern were a number of assumptions. The first was that international environmental problems – notably climate change and biodiversity loss – were ‘... anomalies to the existing institutional arrangements of politics and science, and their capability of dealing with problems’ (Becker *et al.*, 1999, p. 284). Environmental problems had eluded the international system, since they had not been predicted (in the main) and were difficult to control through the orthodox instruments of financial institutions.

The second assumption, on which the 1992 Earth Summit itself was based, was that both North and South had a *shared* interest in ensuring that future economic development was not prejudicial to the environment. At one level, this normative framework was very attractive: it marked a departure from past divisions, especially post-1945, and an acknowledgement of the vulnerability of the planet itself. This ‘liberal consensus’ approach is still the dominant discourse surrounding key concepts such as ‘sustainable development’, ‘human security’ and ‘global environmental change’ (Mason, 1999; Langhelle, 2000).

However, the discussion of globalization carried with it assumptions about the trajectory of global development that early critiques of ‘sustainable development’ sought to challenge. According to Law and Barnett, globalization ‘Constructs the present as a moment, which is part of a fundamental historical transformation. Globalization has become the grand narrative which justifies the end of all the other master narratives of social change...’ (Law and Barnett, 2000, p. 55). Globalization had taken on the mantle of modernity itself; it was the name given both to the journey modern societies are taking, and their ultimate destination.

From the perspective of the new century, policy discourses of this kind are essential ideological underpinnings for concerted action by national governments and international organizations (Baumann, 1998). They translate ideas such as ‘sustainability’ into discursive terrain, providing a framework that is largely absent from traditional international diplomacy. They also suggest opportunities for different actors and groups to mobilize around policies and, in the process, provide them with legitimacy (Prakash, 2001). Different actors are also able to elaborate and embroider these discourses, providing ways in which it could be redefined, or deflected. These discursive narratives have influenced the way in which international environmental policy and sustainable development are viewed today, at distinct spatial levels (Jordan, 1994; Milbrath, 1994).

We can take a common example to illustrate the point. Within international nature conservation the word *nature* is used in a variety of different ways, to express social and economic interests in the environment. Conservationists use it to mean an ‘object’, such as a habitat, a field, a forest, wetland or reef. Environmental groups, however, have also adopted ‘nature’ to express place-based identity; their own legitimate (natural) environment. Finally, ‘nature’ is used in policy discourses to express a professional judgement on the type or value of a resource – ‘critical natural capital’, ‘biodiversity hotspots’, ‘common-pool resources’ or ‘natural sinks’. Each of these definitions of nature provides symbolic meaning for different groups of people, and reflects their different interests.

Similarly, in the case of tropical forest management, we can identify several contrasting discursive fields through which nature is characterized, and conservation objectives are expressed. Protecting ‘nature’ becomes synonymous with protecting environments and endangered ecological systems, as well as the ‘indigenous people’ who inhabit these environments. Nor is it always clear where these discrete interests overlap or diverge.

There is another facet of the new discourses surrounding nature that has received insufficient attention. Under globalization, discourse narratives frequently obscure *spatialized* social processes, which remove and redirect biological resources from one location to another. The tropical forest becomes, literally, a global resource, to be exploited at several removes, and in the interest of 'science' as well as the market. Before the benefits of bio-diversity can be commoditized and traded, they must first be privatized, and their ownership clarified. This is the important, and highly contested, domain of intellectual property rights. According to McAfee it is built on shifting sand:

Contrary to the premise of the global economic paradigm there can be no universal metric for comparing and exchanging the real values of nature among different groups from different cultures, and with vastly different degrees of political and economic power' (McAfee, 1999, p. 133).

These changes carry clear political consequences. The processes through which globalization is undertaken, and environmental agreements made, involve highly unequal capital and information systems, to which groups of people, and governments, have highly unequal access. Vogler shows how some members of the international community wield disproportionate power: 'In most . . . regimes . . . there (is) fairly marked evidence of the way in which norms and rules emanating from United States practices and legislation (are) translated to the international level' (Vogler, 2000, p. 209).

It is a paradox of globalization that the deliberations that accompany decisions to exploit genetic material in the wild, for example, are rarely public property, in the way that political decisions were in the past. A basic unease with these new realities has, in turn, stimulated new forms of social protest, and new legitimacy practices.

Sustainable Human Futures?

The political significance of globalization discourses is not confined to the individual, however. The environment, seen as a strategic resource, can be managed in much the same way as 'non-aligned' status was negotiated during the Cold War. To increase human security, supra-national organizations might be expected to act with 'the global interest' in mind, since environmental stability is perceived as a 'shared' problem, for the developed and less developed world. The human security discourse is one of qualified support for interventions which reduce environmental vulnerabilities, and in which the political nature of this intervention is obscured. In entering the policy mainstream it provides much the same purpose as the sustainability discourses that preceded it (Barnett, 2001).

A central principle of the new global 'environmentalism', then, is the role it affords the state and supra-national institutions. Ecological systems and 'environments' leave the moral domain under this perspective, and become things which the state, or supra-state, must administer. This represents a major shift away from the principle of national sovereignty, beloved by the realist tradition of international relations theorists, and seen in the early writing on 'sustainable development' as a barrier to progress.

At the same time, the new 'sustainability' paradigm around human security and the environment assumes shared responsibility for the environment. Ideologies of 'co-partnership' emphasize the benefits of better management to both 'endangered populations' and ecosystems. Finally, although the environmental security discourse apparently departs from the nation state logic of the realist school, it builds upon the post-War liberal consensus in new ways. It provides a kind of neo-Keynesianism for the global environment, based on planning and international intervention. Terms such as 'wise use', 'wise stewardship' and 'sovereign property rights' echo the principles of ecology for specific audiences, particularly those in North America, but they are held to be applicable to the whole world.

Sustainable Development and Science

It is an assumption of international environmental agreements, post-Rio 1992, that objective, 'scientific assessment' will lead to an enhanced profile for protected areas and species. Agenda 21 speaks of '... strengthening the scientific basis for sustainable management ... enhanced scientific understanding. Building up scientific capacity and capability' (*Agenda 21*, 1992). This, in turn, has led to increased efforts to protect the environment through binding agreements. An example is that of the *Universal Declaration of Human Responsibilities*, which was prepared for the 53rd United Nations General Assembly, in conjunction with the assembly's commemoration of the 'golden anniversary' of the UN Declaration of Human Rights. Two of the 19 principles of the Universal Declaration of Human Responsibilities have particular bearing on the environment:

- (a) Article 7 states 'All people have a responsibility to protect the air, water and soil of the earth for the sake of present inhabitants and future generations' and
- (b) Article 9 states '... (all people) should promote sustainable development all over the world to assure dignity, freedom, security and justice for all people'.

Westing (1999) argues that the UN Declaration of Human Responsibilities should become a '... binding covenant' in much less than the 18 years it took the UN Declaration of Human Rights (1948–1966), and that the World Charter for Nature (1982) should be transformed into '... a binding international covenant that explicitly guarantees appropriate rights for nature *per se*' (Westing, 1999, p. 157).

In fact both these issues – the scientific basis of the 'sustainability' discourse and the use of this discourse on behalf of 'natural rights' – require closer attention. The belief in a 'global' science, implicit in Agenda 21, is highly contested, not least by many scientists themselves. What is brought to bear on global problems is a combination of different, discrete, scientific traditions, rooted in different disciplinary traditions. For example, environmental chemistry is used to research pollution; botanical knowledge is used to identify endangered species. These traditions usually insist (cf. Locke's view of 'natural kinds') that they are *carving nature at the joints*, marking boundaries that already exist in nature (Demeritt, 1998).

Most of these discrete scientific disciplines have nothing to say about the key issues, correctly identified in Agenda 21 as '... the *linkages* ... between human and natural environmental systems', and they are neither predictive nor prescriptive. The idea of 'sustainability' is invoked in policy discourses as speaking to objective scientific method, without the complications of human judgement. In practice, it is routinely used as a way of guiding human actions. The very parts of the scientific tradition that have driven forward the frontiers of knowledge heuristically have imposed boundaries, taxonomies and categories on nature, and have been used to make judgements that reflect human concerns and political interests (Demeritt, 1998; Escobar, 1996). The existence of global discourses on the environment and sustainability is thus used to obscure the evidence and, by obfuscating understanding, such discourses provide few clues to local meanings of environmental degradation.

Similarly, much of the rhetoric accompanying sustainability fails to acknowledge that environmental and social objectives are frequently different, and sometimes at odds with each other. These contradictions are expressed, frequently voiced from sections of the 'aid' lobby, in the view that *over-consumption* in the North is responsible for most global environmental problems (Redclift, 1996).

Sustainable Development and Justice

These problems pervade the growing literature on ‘rights’ and the environment, as some commentators have noted (Dobson, 1998; Miller, 1998). Today, ‘natural rights’ are usually translated as ‘human rights’. The idea that nature endows us with natural, inalienable rights, of which governments in some cases wish to deprive us, is deeply embedded in the political consciousness. The idea is there in the UN Universal Declaration of Human Rights, as we have seen, and has a history that extends backwards to the French Declaration of Rights 1789, the United States’ Declaration of Independence 1776 and the Bill of Rights 1791.

The *problem*, however, is that this sense of ‘rights’, in a political sense, is derived from natural law, and is routinely confused, in environmental discourses, with ‘the laws of nature’. These laws – the canon of science – include the (increasingly contested) idea of homeostasis in both biology and cybernetics, and the laws of thermodynamics, which express the principle that physical processes are irreversible. Once they are regarded as ‘natural’, such laws tend to be confused with the political and social implications that follow from their adoption.

Sustainability is a case in point. Andrew Dobson notes that theories of sustainability ‘... sometimes make it subordinate to justice, *but often the reverse is the case*, and justice is looked upon as subordinate to sustainability (Dobson, 1998, p. 241, emphasis added). This subordinate position of justice in relation to sustainability is concealed by the language of ‘functionality’, and it only comes to light when the ‘win–win’ relationship commonly found in theories of sustainable development is replaced by a potential ‘win–lose’ relationship. It also comes to light when examining *actual* cases, existing places and communities.

Dobson also observes that, since neither sustainability nor social justice has determinate meanings, this ‘opens the way to legitimising one of them in terms of the other’ (Dobson, 1998, p. 242). If you view sustainability as sustaining households and people, then the distribution of resources and rights in them is central to your objectives. If, however, you view ‘sustainability’ as the protection and conservation of the environment, then ‘justice’ consists primarily of ensuring it continues to play its vital ecological function. At the moment we cannot say whether justice is either a necessary or a sufficient condition for environmental sustainability. This observation, in turn, leads us to explore the way in which the material world, and the constructions we place on it, are mutually dependent and able to influence one another.

Nature Engineering: Sustainability as the Human Subject

The first set of changes is in biology and genetics. In a sense, ‘security’ questions have shifted towards ‘nature’, forcing us to reconsider what we mean by both ‘sustainability’ and ‘security’. For example, the protection of nature is now used to legitimate military action and, as we have seen, assumptions about the global reach of nature management have become enshrined in ‘soft law’, to which governments have signed up.

Sustainability is no longer primarily a question of maintaining, and enhancing, existing environmental resources; it is about engineering new ones. The publication of the first results from the Human Genome Project marks a watershed in the largely ‘taken-for-granted’ biology that underpins most environmental politics: individual entitlements, citizenship and governance. The new genetics is altering what it means to be socially connected, to participate in civil society. And how do you ‘govern’ a new global system which does not respect territory, a global system that is, in effect, increasingly extra-territorial (Finkler, 2000)?

Bruno Latour has pointed to phenomena that are neither 'social facts' in the Durkheimian sense, nor natural objects, '... but emerge at the intersection of social practices and natural processes as socially constructed forms of mediation between society and nature' (Latour, 1993, p. 11). Latour was referring to phenomena, such as CJD/BSE ('mad cow disease') or global warming, that are 'hybrids', incorporating elements of the material and the socially constructed. In the future, human genetics, together with other systemic processes, may be poised to shift the ground even further in the direction of mediation between 'nature' and 'society', to the point where what we hybridize is not even perceived as *public* policy, such as global warming or 'mad cow disease'. The process of mediation will be complete when it is least recognizable within a public domain, or a public discourse.

Where does this leave the 'environment', and the political discourses that govern its management? As the *human subject* itself is changing, then might the notions of citizenship, democracy and entitlements also change? In the new world, materiality and consciousness bear an increasingly complex relationship to each other. As species boundaries are eroded, and genetic choice dictates policy, are the 'environment', and 'sustainability' even valid categories any longer?

Conclusion

The paper began by asserting that, since 'sustainable development' had reached mainstream international environmental policy, it was time to draw breath, and to closely examine the political and intellectual agenda that was being proposed. Since the term 'sustainable development' was popularized by the Brundtland Commission in 1987, the natural environment had been closely linked with meeting human 'needs'. Subsequently, the move from an emphasis on 'needs' to that of 'rights' marked a shift from a broadly Keynesian paradigm of international economic relations, in the post-World War II period, to the neo-liberal certainties of the late 1980s and 1990s.

The imposition of market economics on the global environment had both paradigmatic and practical results. The focus on 'choices', for individuals and larger social groups, expressed through market preferences, led to growing disparities between social and political demands, and the allocations of the market. International political economy, in neo-liberal orthodoxy, meant economic 'adjustments' had to be made, for which there was little, if any, social provision. Environmental protection, and the values that 'actually existing' cultures placed in their environments, was formally expressed in terms of markets and prices. Paradoxically, it was this emphasis on individual and group interests, in the face of market forces, that led to the concentration, especially by the non-governmental organizations, on 'rights' in their opposition to globalization.

The paper then examined the discourses through which sustainability, and the rights to and of nature, were expressed. It was suggested that sustainability as a mainstream concept had often disguised, in newer vestments, the conflicts and agendas of the past. As Habermas (1971) argued in *Theory and Practice*, the way that we understand 'nature' today is framed by the past. The 'new' sustainability discourses were often clothed in new language – deliberation, citizenship, even the rights of species – but they hid, or marginalized, the inequalities and cultural distinctions that had driven the 'environmental' agenda internationally. We considered the way in which environmental issues became a target for policy, and were elaborated by different political actors, or discourse coalitions.

A critical look at sustainable development discourses today suggests that the perceived need for global management of the environment stemmed, in part, from the assumption that it provided a way of correcting the anomalies of economic and trade policy. Two specific questions were identified as evidence of the new discourses around sustainability, and the attempt to incorporate within environmental concerns wider questions of social justice, governance and equity.

Finally, it has been suggested that the increasingly discursive nature of international environmental policy, and the attempts to seek, or claim, legitimacy, presents other dangers. It ignores the fact that the nature/culture debates are being materially rewritten via genetics. The ‘scales of justice’, with which environmental issues are now necessarily concerned, need to acknowledge that the human individual (like other species) is a genetically modified being, and increasingly viewed as such. Global information systems, led by the Internet, have transformed communication systems and the symbolic order, heralding a new and uncertain *virtual* politics, parallel with that of the ‘real world’. It is in this sense that the new discourses surrounding genetics may be looked upon as ‘post-sustainability’ discourses.

The paper began by arguing that ‘sustainable development’ had for some time been a property of different discourses. The term ‘sustainable development’ was an oxymoron, which prompted a number of discursive interpretations of the weight to be attached to both ‘development’ and ‘sustainability’. Only by exposing the assumptions, and conclusions, of these discourses could we hope to clarify the choices and trade-offs that beset environmental policy and the environmental social sciences. Today, ‘sustainable development’ needs to be linked to new material realities, the product of our science and technology, and associated shifts in consciousness. We have entered a world in which ‘sustainability’ is understood in terms of new material ‘realities’, as well as epistemological positions (Urry, 2003; Touraine, 2003; Mol and Law, 1994). The challenge for critical thinking, then, is to identify the ways in which material changes – in the physical environment, information technologies and the human body – require us to revisit the idea of sustainable development. We need, in short, to examine the way in which new materialities influence the cultural constructions we place on the environment. To come of age, sustainable development might have to take issue with many of the liberal assumptions that influenced its adolescence.

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Biography

Michael Redclift's research is in the political economy of the environment. It examines links between North and South and the role of space in historical transformations. His research on sustainable development builds upon his previous books, including *Sustainable Development: Exploring the Contradictions* (Routledge 1987), and includes work in preparation on sustainability and post-sustainability, a four-volume collection for Routledge, London, and another collection, *New Developments in Environmental*

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