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Sustainable Development and Global Governance

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The difficulties of achieving sustainable development reflect several internal tensions in the three-pillar approach: The adoption of economic development as a separate pillar from social development challenges the view that the purpose of one is to achieve the other; economic valuation of the environment removes the distinction between environmental and economic goals; and no distinction is drawn between the development of developing countries and the development of developed ones. These tensions are shown to be symptomatic of difficult issues being avoided. A closer examination revives doubts about whether the conservation of the global commons and the development of developing countries can both be achieved without major changes in economic structures and governance systems, nationally as well as globally. It is concluded that the development of more appropriate systems requires imaginative research in every discipline of the social sciences, with a vital role for cooperation between American and Chinese institutions.

Keywords: *sustainable development; global governance; classical economics; global commons*

Sustainable development has become a widely accepted norm yet still presents major problems of implementation. The World Conservation Strategy of 1980, the Brundtland report of 1987, the Rio Earth Summit of 1992, and the Johannesburg conference of 2002 have all reinforced what was said at Stockholm in 1972, that “technological man” is “on a course which could alter dangerously, and perhaps irreversibly, the natural systems of his planet upon which his biological survival depends,” although most of the world’s population have “hardly raised their claims on the planet above those of neolithic man” (Ward & Dubos, 1972, pp. 46-47). Poverty has been reduced in some countries but not in others, and human-induced climate change and biodiversity loss continue unabated despite high-profile international attention. In the three decades and more since the Stockholm conference, the concept of sustainable development has evolved considerably whereas the problems it aims to address remain unsolved.

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These difficulties of implementation are associated with the simplicity of the Brundtland definition of sustainable development, which “obscures underlying complexities and contradictions” (Redclift, 2005). Many of these are not new or likely ever to be fully resolved. Development is a dynamic process that might reasonably be hoped to continue indefinitely while continuing to create tensions of this nature. In consequence, many commentators have come to “view the pursuit of sustainability as a long-term, open-ended process” (Farrell, Kemp, Hinterberger, Rammel, & Ziegler, 2005). This risks confusing sustainable development with the pursuit of sustainable development. If the pursuit of a sustainable, open-ended process is itself allowed to be open ended, development can never be made sustainable, and the catastrophes feared at Stockholm must become increasingly probable.

Although the tensions inherent in the development process are likely to continue, the message from Stockholm, oft repeated, is that they have become particularly acute at this particular point in human history. Widespread awareness of the potential environmental consequences of the current development pattern has failed to stimulate effective action. The interpretation of those consequences in economic terms has been no more successful. This article therefore explores the environmental and economic tensions of sustainable development in terms of their social and political consequences. It finds powerful arguments for reorienting the debate toward difficult choices that are not being made or, more dangerously, are being made by default.

Economic Development and Social Development

The three-pillar approach to sustainable development, based on its environmental, social, and economic dimensions, has done little to reduce the complexity of the concept and has itself introduced a contradiction. The three dimensions were originally introduced with the aim of identifying areas in which social, economic, and environmental goals interact such that environmental issues might be more fully integrated into development decisions (Holmberg & Sandbrook, 1992). To an extent, the opposite has occurred by allowing a distinction to be drawn not only between social and economic goals but between social and economic development. The Rio conference interpreted sustainable development as a single process with three dimensions. The Johannesburg Plan of Implementation defined it as three distinct processes, of “economic development, social development and environmental protection—as interdependent and mutually reinforcing pillars” (United Nations, 2002, p. 8). Intentionally or not, this challenges the view that the purpose of economic development is to achieve the social development of a higher quality of life.

The Johannesburg interpretation of sustainable development is unclear about the meaning of economic development, but it does identify economic growth as an essential component. It is widely agreed that the quality of growth, not just its quantity, is a significant factor in improving the quality of human life (World Bank, 2000).

Growth is, however, taken to be a necessary condition for development, even if not a sufficient one.

Many scholars have contested this. John Stuart Mill (1848/1909) foresaw a time when economic growth would become environmentally unsustainable, using much the same terms as were used at the Stockholm and Rio conferences to describe it happening. In setting out alternative principles of political economy that would not depend on growth, Mill felt that it was “scarcely necessary to remark that a stationary condition of capital and population implies no stationary state of human improvement” (p. IV.6.9). As well as giving as much scope as ever for cultural, moral, and social progress, “even the industrial arts might be as earnestly and as successfully cultivated” (p. IV.6.9). Hence, scientific and technological advances in labor productivity and the efficiency of resource utilization would enable people’s purchasing power to continue increasing indefinitely whereas GDP remained constant or even fell. Daly and others (Daly, 1992; Georgescu-Roegen, 1971; Mishan, 1969; Offer, 2000) have used similar reasoning to argue that a steady-state economy would be no less desirable and effective in current circumstances.

In practice, economic growth does not necessarily contribute to social development. It can have adverse effects on the quality of life as well as beneficial ones, to yield social results in both directions or even a negative effect overall. It may therefore be argued that the economic component of sustainable development is rightly regarded as a separate pillar, with a purpose that is widely understood but left unstated. Whatever its effects might be on improving the quality of life, economic growth is necessary to maintain economic stability (Daly & Townsend, 1993).

Although the relationship between growth and stability is rarely discussed in relation to sustainable development, it is a central component of economic theory. As described by Adam Smith (1776/1904), “the increase of stock, by increasing the competition, necessarily reduces the profit.” Smith identified a similar effect on wages so that if an equilibrium were ever reached, “both the wages of labour and the profits of stock would probably be very low” (p. I.10.81). The rest of his analysis concentrated on how profits and wages could both be maintained through the growth of foreign trade, and David Ricardo added that “this tendency, the gravitation as it were of profits, is happily checked at repeated intervals by the improvements in machinery” (Ricardo, 1821/2001, pp. 78-79). Hence, economic growth through technological innovation and growing international trade came to be understood as an essential requirement of a market economy, not to increase the rate of profit or the real wage rate, but to keep them from falling. Mishan (1969) has argued that a similar effect is now achieved by the marketing of new fashions, not to satisfy needs or wants, but to create them and hence to stimulate the demand that is needed for growth. Profits and real wages both vary in proportion to the rate of growth so that this is often “considered the only relevant parameter” (Spangenberg, 2005). Under classical economic theory, continual economic growth is essential, or profits and wages would both collapse and the economy would collapse with them.

Neoclassical theory differs from classical theory in shifting the emphasis from the cost of production to consumer demand and welfare. This enables a better understanding of the allocation of scarce resources and the maximization of welfare in a static economy. The use of mathematical techniques permits the detailed analysis of an economic equilibrium that would allocate resources optimally, in the sense that total welfare is maximized, and one person's cannot be increased without reducing another's. Other aspects of contemporary mainstream economics address the non-equilibrium aspects of economic performance, including means of maximizing the growth rate and encouraging steady growth instead of booms and slumps. This does not challenge the classical theory that growth is itself essential for the stability of a market economy whether it be achieved through technological innovation, growing foreign trade, or other means.

In many respects, the market economy has performed extremely well. Despite its tendency to generate changes in society for economic rather than social reasons, it can justifiably be claimed that in any respect other than environmental conservation it has performed better than any other economic system that has yet been tried. Although Marx (1887) seized on Smith's 1776/1904 and Ricardo's 1821/2001 analysis to bolster his famed prediction that "capitalist production begets, with the inexorability of a law of Nature, its own negation" (p. XXXII.3), the centrally planned economies of the Soviet system proved to be less durable, with a worse social and environmental performance. Nonetheless, the economic pillar of sustainable development must be treated with caution. It is a separate pillar from social development. It has a separate purpose, to sustain the market economy. If the market economy proves to be unsustainable for other reasons, it will have to be brought under tighter control or some other workable economic system will have to emerge to replace it.

Environmental Values

Free-market principles have in general conserved environmental resources more effectively than central planning but still suffer from their own inherent limitations. Adam Smith described natural habitat as the "unimproved wilds." It has since been recognized that the environment has other values than that obtainable from converting it to agriculture, with a range of techniques available to value it (Winpenny, 1995). This challenges another aspect of the sustainable development framework. When any particular environmental quality is given an economic value, this moves it from the environmental sphere to the economic sphere. For qualities such as agricultural fertility, this may be a necessary step in making a rational decision. However, when all environmental qualities are valued in economic terms, the environmental pillar of sustainable development becomes redundant.

Economic valuation of the environment has generated a long-running debate revolving around the ethics embedded in the Rio Declaration's anthropocentric first principle, the extent to which human values are economic values, and the substitutability of

human-made capital for natural capital (Hopwood, Mellor, & O'Brien, 2005; Spangenberg, 2005). The many problems associated with economic valuation include the choice of a discount rate through which to calculate the present value of future gains or losses (Pearce, 1993) and the assessment of the level of risk of a wide range of possible outcomes with vastly differing costs (Vogel, 2001). Such problems arise for many environmental qualities and particularly for biodiversity, which remains a political and ethical issue that cannot be addressed by cost-benefit analysis alone (Cléménçon, 2005; Pearce & Moran, 1994). Valuation and cost-benefit analysis also require a comparison to be made between clearly definable costs and benefits to highly specific interests (private goods) and long-term costs or benefits to society at large (public goods). In many cases, the public has insufficient knowledge and understanding of the effects to be able to evaluate the costs and benefits in the same way as it would if it actually experienced the impacts. Generating such understanding can entail high transaction costs within the political system. Even when the political system is capable of creating a reasonable degree of public understanding, and of fully reflecting the interests of all social groups, the process of developing appropriate balances or trade-offs between different people's differing economic and other values is essentially political rather than economic.

In effect, the debate on whether all environmental qualities should be valued solely in economic terms, or whether some aspects should be excluded and valued separately in other ways, reduces to the question of whether sustainable development should or should not have an environmental pillar separate from its economic pillar. That it does have such a pillar is a powerful argument for adopting the position that although it may be appropriate for some environmental qualities to be valued exclusively in economic terms, others should not be. Meanwhile, environmental conservation and exploitation continue to be determined by a combination of political processes and the behavior of an imperfect market.

Any environmental quality that is actually traded in the market has a human value that is measured automatically as an economic value, defined by a market that reflects an average of the values that individual people place on it, weighted by their purchasing power. This does not apply to certain public goods, such as clean air, which cannot be traded in the market. Decisions on their conservation or use are therefore made on behalf of the public by its political representatives on the basis of values that do not need to be expressed in economic terms but can be, in part, when doing so contributes to the soundness of the decision. This is not necessarily the case for other public goods, such as biodiversity. Biodiversity is a public good whose use is nonexclusive, but there is a market for it. The tropical rainforest can be bought and sold. Its biological diversity is declining because too few people value it highly enough to buy it other than as a source of timber or agricultural land.

The underlying tensions of sustainable development run deeper than the question of whether environmental qualities should be valued in economic terms and if so, how. The biodiversity of the tropical rainforest is subject to market failures and imperfections

(Bulte & Engel, 2005) but could nonetheless be secured immediately in either of two ways. Individual people could combine to outbid logging companies in negotiating the purchase of a share of the forest and arrange for the joint management of their acquisition. Alternatively, governments could purchase it on their behalf and install the necessary mechanisms to preserve local livelihoods and prevent illegal logging. The first is not happening to any significant degree, mainly because of market failures and policy failures in the management of public goods. The second is happening in a minor way only through international mechanisms such as the Global Environment Facility, which funds projects in developing countries benefiting the global environment but which has very few resources compared to the problems it is asked to address (Cléménçon, 2004, 2006). A significant increase in funding for international mechanisms of this nature would require government decisions that would be supported by people who value biodiversity highly and opposed by those who do not. Currently, the level of public support is not high enough to counter the combination of opposing interests and a general unwillingness to pay higher taxes for the necessary expenditure. Until such time as the public as a whole is persuaded that the value of biodiversity is high, in economic terms, human terms, ethical terms, or any other terms, the existing democratic process would have to be overruled if conservation were to be made any more rigorous than it is. The same applies to climate change and every other environmental issue of major concern when other concerns are higher.

Economics has an essential role to play in the public debate on global environmental integrity, but it is less significant than the role of the physical and biological sciences. People in general are more concerned about the fate of New Orleans and its citizens than they are about the economic cost, however that cost might be calculated. It is through their awareness of the physical sciences that they make their judgments of the extent to which climate change contributed to the New Orleans disaster and the level of risk of further events that would be similar and worse. It is through its understanding of the biological sciences, alongside spiritual beliefs, that the public judges whether genetically modified organisms designed by humans are capable of outcompeting the intricately interconnected outcome of 4 billion years of evolution. Some members of the public are influenced by calculations that condense all the uncertainties, the complexities, the risks, the human suffering, and the spiritual beliefs into a small number of dollars or a large number of dollars, but most are not. Economics can provide considerable help when it puts its ideologies to one side and informs the public of its own science, and it could provide more. As Spangenberg (2005) has argued, it needs to contribute to the development of multicriteria approaches that fully reflect the scientific uncertainties and the human risks and that make full allowance for variations in human values between individuals and over time.

The debate on sustainable development has raised public awareness, and public concern has risen with it. Governments have responded, in particular by recognizing that a transformation is needed in patterns of consumption and production (United Nations, 1992). This has led to the concept of decoupling between economic growth and the use of or damage to environmental resources. This has been adopted in the

EU's strategy for sustainable development as "the overall goal of environmental governance and the core strategy to reconcile environmental protection and continued economic growth" (Giljum, Hak, Hinterberger, & Kovanda, 2005, p. 32). Decoupling can, in principle, make economic growth and environmental protection fully compatible. However, the concept does not resolve the tension between the two. The practical difficulties of implementing it are the same as those of implementing sustainable development.

To be effective, decoupling must be absolute, such that continued economic growth does not increase pollution or the depletion of finite resources. Relative decoupling, which reduces environmental intensity but not enough to offset the scale effect of rising GDP, will not achieve the desired objective. For global impacts, the decoupling must not only be absolute but inverse, so that resource use and pollution fall, leaving room for developing countries to develop. In Europe, some environmental qualities exhibit relative decoupling, though not all, whereas the absolute level of many key impacts is still rising (Giljum et al., 2005). The same can be observed in published data for the United States and other countries (Yale Center for Environmental Law & Policy, 2006). The decoupling targets that have been set for the EU are only loosely defined and do not establish clear goals for absolute impacts (Giljum et al., 2005).

These unambitious goals for decoupling are fully compatible with economic growth. The use of new technologies to improve environmental efficiency often reduces costs, increases competitiveness, and accelerates growth while contributing to relative decoupling. The efficiency gains may have no effect on absolute levels of impact, because a rebound effect caused by lower prices often stimulates a further increase in demand, which cancels out the gains (Cleveland, 2003). A second contribution to relative decoupling can be achieved through international trade. This may allow consumption to continue rising domestically while the negative environmental consequences occur in other parts of the world (Giljum & Eisenmenger, 2004).

The viability of decoupling as a vehicle for sustainable development rests on the assumption that the world as a whole can follow the development path exhibited by high-income countries, from agriculture to manufacturing to services. Every economy might then become a service economy, whose economic growth would come from the expansion of activities that consume no more than the environment renews and pollute no more than it absorbs. An economy of this nature might well be feasible, but it would be radically different from any economy yet known. Today's high-income service economies do not stand in isolation. They are part of a global economy in which they trade extensively with non-service economies whose incomes and per capita consumption are an order of magnitude lower.

Whose Development?

At the beginning of the 1930s depression, John Maynard Keynes (1930/1963) wrote an antidote to gloom that extolled the virtues of capital accumulation while

warning of its vices. In it, he traced the accumulation of Britain's international wealth to "the treasure which Drake stole from Spain in 1580." He performed a simple calculation that gave an indication of how Britain's ownership of foreign assets subsequently accumulated via investment of Drake's bounty in the Levant Company, followed by the use of the profits to found the East India Company, whose earnings were then invested in other parts of the world, to accumulate a hundred thousandfold between 1580 and 1930. The entire period was one of intense foreign direct and indirect investment in the Middle East and North Africa, in the Indian subcontinent, in Latin America, in sub-Saharan Africa. The investment helped Britain to develop, but not the recipients (Donaldson, 1986).

Contemporary development theory argues that one of the main needs for the development of developing countries is more investment in them by high-income ones (World Bank, 2004). The principal means recommended for achieving it include the right of establishment in developing countries for industrial and other international companies and the privatization and trade liberalization of financial services, energy supply services, water supply services, and other essential services that can be owned or managed by international banks and corporations. The theoretical benefits to developing countries are not always realized in practice. As Stiglitz (2002) has pointed out, the relationships between foreign investment and development are complex, with effects that can be beneficial or adverse depending on a wide variety of factors. The importance of these factors is widely acknowledged but not the benefits that accrue to the investing country. Whatever the impacts might be in developing countries, the investment adds to a modern service economy's accumulated ownership of foreign assets and the income received from them.

Other features of a high-income service economy conceal further tensions, which have been inherited from the history of developed countries' own development. It is a history that has been rightly left behind, but one with residual effects that are highly influential.

Britain's investment in the East India Company was not a straightforward commercial transaction. It took place in parallel with the industrial revolution, which provided the superior weapons of the company's private army, facilitated the shipment of slaves from Africa to America to grow cotton, helped to take the cotton to Britain, and enabled textile products to be made in Britain for sale in India, the jewel in the crown of the British Empire. Other European countries established their own trading empires by similar means, followed, less imperially, by the United States.

The past is history, but its legacy defines the circumstances in which the future starts. Many developing countries have now gained the ability to make textile and other products using the same technologies as in Europe and America, with cheaper labor. Western countries are therefore no longer able to export such products to their former markets nor keep them out of their own markets without abandoning the global trade on which their wealth is based. In response, they have moved out of mass manufacturing and into marketing (Held, McGrew, Goldblatt, & Perraton,

1999). By investing heavily in advertising services and distribution services, global brands are created (Klein, 2001), allowing products sourced in low-wage countries to be sold globally at a price that is sufficiently high to pay the marketing costs. In parallel, new technologies are developed, promoted, and protected as intellectual property, whose royalties make a further contribution to the income of an internationally trading service economy.

As with foreign investment, the effects of these activities on the development of developing countries are complex and may be beneficial or adverse (George & Kirkpatrick, 2004; Katrak & Strange, 2004). The benefit to developed countries is clear and forms a central component of government policy. The EU's Lisbon strategy commits it to becoming "the most dynamic and competitive knowledge-based economy in the world" (Commission of the European Communities, 2005, p. 3). The official review, chaired by former Netherlands prime minister Wim Kok, states that "Lisbon is about achieving Europe's vision of what it wants to be and what it wants to keep . . . competitor countries and regions are moving on as well, threatening Europe's position in the global economic league table." Of particular concern is China, which "has begun to compete not only in low but also in high value-added goods," whereas "India's challenge is no less real—notably in the service sector" (European Communities, 2004, p. 12).

If contemporary development theory is correct, these concerns are unfounded. European incomes should not fall as a result of developments in India or China. These countries' ability to compete in low-value-added goods, then in high-value-added goods, and then in even higher value-added services, should not be seen as a threat but as a welcome sign of developing countries developing, to join those that have already developed. Yet Europe is urged to maintain its position at the global economic league table as obtained through its industrial and imperial history. If the Lisbon strategy really is necessary for the maintenance of European incomes, neoliberal theory is suspect. Once again, the classical economic theory of Adam Smith and David Ricardo would seem to be more relevant. It reveals yet another tension in sustainable development that is particularly difficult to resolve.

David Ricardo is famed for his law of comparative advantage, which appears to support neoliberal trade policy yet explains why elites in many of the most impoverished developing countries choose to export their natural resources rather than attempt the more difficult task of socioeconomic development (Auty, 2000; Sachs & Warner, 1995). This aspect of Ricardo's theory poses no threat to Europe, but other aspects are more problematic. In particular, his labor theory of value suggests that rising productivity does not result in rising wages. The theory was seized on by Marx, in his antagonism to the depth of poverty in industrializing England, but was originally identified by Smith and developed by Ricardo. "The demand for labour," wrote Smith (1776/1904), "determines the quantity of the necessaries and conveniences of life which must be given to the labourer; and the money price of labour is determined by what is requisite for purchasing this quantity" (p. I.8.51). Ricardo

(1821/2001) added extra clarity by arguing that in any self-contained market economy under equilibrium conditions, competition for jobs would force the price of labor down to “that price which is necessary to enable the labourers, one with another, to subsist and to perpetuate their race” (p. 58).

The minimum wage in Europe has risen considerably since Ricardo’s time, calling the classical labor theory of value into question. However, the European economy is not self-contained. The Ricardian trap does not affect any subeconomy above the bottom of the global income scale, applying only to the entire international economy of which they are part. Globalization is changing that economy toward undoing the separation between high-income economies and low-income ones. If that were to happen, and if classical economic theory were to apply, the global minimum wage would remain unchanged and become the same everywhere. There would be no leveling up, nor even a leveling to the middle. There could only be a leveling down. The Lisbon strategy of endeavoring to maintain Europe’s position at the top of the global economic league table would be a highly rational response.

A Common Future

Sustainable development is going to be difficult to achieve. Achieving it requires a thorough understanding of the biological, physical, economic, social, and political processes involved. Classical and other economic theories offer explanations for observed socioeconomic behavior but not prescriptions. The laws that these theories define do not have to be obeyed, any more than the law of gravity has to be obeyed. They merely explain what happens when no action is taken to prevent it.

One of the difficulties of implementing sustainable development is the lack of clarity in its definition. The definition given in the Brundtland report is widely quoted, without reference to the report’s own expansion of its two key concepts (World Commission on Environment and Development, 1987):

- the concept of “needs,” in particular the essential needs of the world’s poor, to which overriding priority should be given; and
- the idea of limitations imposed by the state of technology and social organization on the environment’s ability to meet present and future needs. (p. 43)

It has been clear all along that economic development is an intrinsic factor in both these concepts and that it needs to change. Its treatment as a separate pillar has served only to reinforce it as it is. When the problem of unsustainable development was identified, development meant the development of developing countries, and unsustainable meant the development path that had been established by the developed ones. Sustainable development meant some different path that both groups would follow to focus in an environmentally sound manner on the needs of the world’s poor.

The Brundtland report went a long way toward defining how its concept of sustainable development might be operationalized, followed by the 1992 Earth Summit's comprehensive international agreements in the Rio Declaration, Agenda 21, the Convention on Biological Diversity, and the Framework Convention on Climate Change. Further progress has been made in clarifying operational requirements for these two major global environmental issues, in particular through the work of the Intergovernmental Panel on Climate Change, the Convention on Biological Diversity, and the Millennium Ecosystem Assessment (2005). In parallel, the International Task Force on Global Public Goods (2006) has begun to address the fundamental difficulty faced by a market economy in managing public goods as it applies in the global context of climate change and declining biodiversity. This difficulty remains the principal obstacle to implementing the operational requirements developed at Rio and subsequently. Hardin (1968/1969) referred to it as the tragedy of the commons.

Hardin's analysis of market failure in the management of public goods has been criticized on two main counts (Aguilera-Klink, 1994). First, it is well known that traditional societies rarely behave in the way that Hardin (1968/1969) described in his illustration but rather develop cooperative means of managing their common resources. Modern societies do the same through the more formalized framework of written law. However, global society is not a traditional society, nor does it have laws equivalent to those that a modern society adopts at the national level and below. The second main criticism applies to Hardin's implication that private ownership is the only remedy. This does not do justice to his original analysis in which privatization was his favored option but not always a viable one, and not the only one. "Consider bank-robbing," he wrote:

The man who takes money from a bank acts as if the bank were a commons. How do we prevent such action? Certainly not by trying to control his behaviour solely by a verbal appeal to his sense of responsibility. (p. 378)

Instead, laws to prohibit the undesirable action are enacted and enforced. The commons may be converted into public goods that are publicly owned and managed or, in some cases, private goods that are privately owned and managed, but either way, laws that control access are established and enforced on behalf of a public that sees no future in a free-for-all.

The global climate and global biodiversity remain what may be regarded as a free-for-all. Unless a binding consensus can be achieved on preserving them, each individual nation has little option but to join in the race to maximize its own economic performance irrespective of the impact this might have on the sustainability of the global environment. Views on how this situation might be managed fall into two camps (Vogler, 2000). One side appeals to a sense of responsibility and enlightened cooperation between sovereign states, whereas the other sees no answer short of enforceable global law.

The market cannot solve the problem. The most it can do is help to implement a public solution, for example, through the issue of credits for greenhouse gas emissions. Carbon trading is an example of an instrument that can be used by policy makers to steer the behavior of private enterprises so that market forces can be put into the service of public goods provision. Ultimately, however, this is the same as having a regulatory framework within which market forces can be left to work to the benefit of a common good. By issuing carbon credits, governments create an artificial market and incentives to reduce emissions in the most cost-effective way. However, the size of the effect and its impact on different people in different countries depend entirely on government decisions on the level of credits that are granted and the means by which the market is regulated (Ott & Sachs, 2000).

Growing public awareness is a vital factor in preventing a tragedy of the global commons, but it needs to elevate enlightened cooperation to a new plane. The herders in Hardin's illustration refrain from joining forces to manage the degrading land because they all realize that if any one of them chooses not to join in, he or she will have the biggest herd when the crisis arrives and the greatest chance of being dominant when it is over. No matter how high the level of awareness that the land is overgrazed, and no matter how high the level of concern, concern is even higher for the consequence of failing to compete with an unscrupulous competitor.

Public awareness of the need for sustainable development came to the fore through the Brundtland report (World Commission on Environment and Development, 1987), whose title, *Our Common Future*, encouraged the view that the future of the whole human race is at risk. This is misleading. It hides yet another tension in the concept of sustainable development, which is the biggest of all and the most difficult to face. Our future is not necessarily common. It can only be common if we choose to make it so.

As well as being the biggest of the tensions, this is also the oldest. It was referred to by the United Nations (2003) in its review of the Millennium Development Goals, which noted that "the implications of the scarcity of a number of natural resources, the mismanagement or depletion of such resources and unequal access to them should also be recognized as potential causes of conflict" (p. 6). The wording was more guarded than Plato (360 B.C./1955) was prepared to use when discussing the same problem over 2,000 years earlier. His analysis of the structure of the state began with the observation that

if we are to have enough for pasture and plough, we shall have to cut off a slice of our neighbours' territory. And if they too are no longer confining themselves to necessities and have embarked on the pursuit of unlimited material possessions, they will want a slice of ours too. (pp. 107-108)

From this cool acceptance of a problem that is a lot older than we tend to think, he inferred that the state must have an army, "which will go out and fight for its interests and defend its citizens against all comers." By Plato's analysis, unrestrained economic competition for the environmental commons does not end in their total destruction. It ends in war. Once the winner has secured control, the commons can be managed.

This conclusion is too stark to be accepted easily. It is highly disturbing, with no comfort to be found in the knowledge that major wars rarely take place over increasing pollution or the extinction of wildlife. Climate change and loss of biodiversity can very quickly lead to catastrophic decline in agricultural production in some areas but not in others. This would revive the oldest resource conflict of all, on top of those for other resources on which we have become dependent. The immediacy of the implication is much harder to accept than the slowly accumulating prospect of mass extinctions, or even self-extinction. These are easily contemplated because they are distant and in the extreme, unimaginable. The more immediate consequence is brutally mundane.

Plato regarded warfare as a permanent human condition, driven by competition for access to and control of environmental resources. War was still seen as inevitable 2,000 years later, when von Clausewitz (1832/2005) described it as "a mere continuation of policy by other means" (p. 31). Now, for the first time in human history, the unprecedented breadth of human communication has made it possible to contemplate a common future.

Governing the Commons

Sustainable development is a revolutionary idea. When environmental sources and sinks have become overstretched in the past, states have gone to war over them without a second thought. Now, we hesitate. It still happens, but it is no longer considered to be inevitable.

The world has come a long way since Plato's time. The changes have made age-old problems more readily soluble, and at the same time, more pressing. City-states have coalesced into nation-states and now into the ethno-cultural-continental alliances that Samuel Huntington (1993) called civilizations. If the word *globalization* means what it says, the final step is already under way, going beyond the city-state, beyond the nation-state, beyond the continental superstate, to a global equivalent of them all. If this last step is ever completed, the global commons will be manageable, but it is a very big step. When the northern and southern states of America coalesced to form the United States of America, it was through a civil war. When the four countries of the United Kingdom did the same, it was after many centuries of war. Europe has coalesced into its current union through a similar process, culminating in two world wars. If the whole world were now to coalesce in the same way, it would be through a very

big war, or a series of such wars, with incalculable effects on the natural environment as well as people. However, the peaceable alternative requires a revolution in human thinking.

That revolution has begun, in the emerging concept of global governance (Held 2002; von Braunmühl & von Winterfeld, 2005). This is another phrase whose meaning is unclear, except that it is not usually taken to mean global government. There are many reasons for this (McGrew, 2000), of which the most obvious, again, is rarely stated. If a world government were to be a democratic government, as democracy is currently understood, it would have to be appointed by the same process as all democratic governments are currently appointed. Whether it were a unitary government or a federal one, and whether its electoral system were first-past-the-post or some form of proportional representation, the same problem would apply. Unless we were to abandon the most fundamental principle of democracy, as applied in every Western country and encouraged for every other, the overarching global authority would have to be elected through multiparty elections in which every adult has one vote. Desire to see the whole world governed in such a way is no greater in high-income countries now than it was among the French aristocracy before its overthrow in the revolution that brought modern democracy to Europe.

It is quite possible that a form of democratic global governance might eventually be adopted that is very different from any system of government that has previously been known (Bull, 2000). Whatever form such governance might take, it is to be hoped that it can be introduced through a revolution in thought rather than one of violence, which might well be as fruitless as it would be destructive. However, it cannot happen unless there is a widespread desire for it to happen.

The need to go beyond global governance to the fuller legal framework that would approximate to globally democratic government has been argued from several complementary directions. From the socioeconomic perspective, Stiglitz (2002) has suggested that “unfortunately, we have no world government, accountable to the people of every country, to oversee the globalization process in a fashion comparable to the way national governments guided the nationalization process” (p. 21). From the environmental perspective, the argument derives from the observation that the commons cannot be managed without the rule of law, and laws cannot be enacted and enforced without government. From the perspective of the technologically escalating weaponry of international conflict, Bertrand Russell (1949/1976) came to the conclusion that scientific society can only be stable on condition of “a single government of the whole world, possessing a monopoly of armed force and therefore able to enforce peace” (p. 127). Hardin (1993) disagreed and interpreted some of Russell’s writing differently, but Harold Macmillan, in 1955, was in full accord. As Britain’s minister of defence, before becoming prime minister, he advised Parliament to pursue a

supranational authority invested with real power. Honourable Members may say that this is elevating the United Nations, or whatever may be the authority, into something like world government; be it so, it is none the worse for that. In the long run this is the only way out for mankind. (quoted in Russell, 1961a, p. 72)

What Macmillan saw as the long run came closer to the short run when the Stockholm conference recognized that unsustainable development had become global. Agenda 21 described the compressed timescale in its opening words: "humanity stands at a defining moment in history" (United Nations, 1992). The moment may not last much longer. Although many of the smaller developing countries have found it extremely difficult to develop, China's growth has outpaced that of high-income countries by more than 5% a year for several decades (World Bank, 2004). If the pace continues until per capita incomes have caught up, China's economy will overtake America's in or around the year 2035, with another factor of 4 to go. Alongside the potential pressures on natural resources and the global environment, this has obvious consequences for U.S. hegemony.

In predicting a clash of civilizations, Huntington (1993) advised Western governments that their policy "should be divided between short-term advantage and long-term accommodation" (p. 43). It is a high-risk strategy. If Western civilization fails to achieve its goals by persuasion, no accommodation will be possible. The division of interests will have been strengthened instead of eased, to magnify the forces that will be unleashed when the clash is finally resolved. Even so, it is a rational strategy unless beliefs change radically.

Huntington (1993) argued that the most important conflicts of the future will occur along the cultural fault lines separating seven or eight major civilizational groups, which he described as Western, Confucian, Japanese, Islamic, Hindu, Slavic-Orthodox, Latin American, and possibly African. With the possible exception of the last, each of these believes in the superiority of its own cultures. The West believes in perpetual economic growth as deeply as Islamic peoples believe in Islam. In aggregate, each of Huntington's civilizations believes that its cultures have progressed beyond all others, that the world cannot unite until the others have progressed toward its own, and that any movement toward theirs would be regressive. If these beliefs are valid, it is rational for each of these civilizational entities to defend its cultures to the hilt, if necessary through war.

Equally fundamentally, the possibility of a common future is still highly tentative, along with the possibility that there might ever be an end to war. Hardin (1993) dismissed the idea of world government with the view that "the external enemies required to sustain global cooperation are, by definition, lacking in a united world" (p. 277). It is rarely suggested that the only barrier to the United States resuming its civil war is the existence of a hostile world, but Hardin's view is widely held. If warfare is indeed a permanent human condition, there is little to be gained from shying away from it now. Huntington's (1993) strategy would then be the most appropriate, to maximize the short-term advantage that is necessary to win the war when it comes.

This is not the only possible strategy, but economic interests lean toward it just as strongly. Although neoliberal ideas ostensibly reject the Smith–Ricardo labor theory of value as an aberration espoused by Marx, it still rides high in the rationale of Europe’s Lisbon strategy to preserve Europe’s position in the global economic league table and in the efforts of other high-income countries to do the same. It is just as high in the minds of Western electorates, who fear that an accommodation with China would result in their wages falling to the level of the Chinese workers to whom their jobs are being lost.

The relationship between the United States and China will be critical in the coming decades. They are the world’s two biggest consumers of fossil fuels and the two biggest emitters of greenhouse gases. They are also the least willing to accept major commitments under the Kyoto Protocol (Soroos, 2001). The protocol itself suffers from weaknesses in its provisions for achieving its goals, which themselves fall well short of what is needed to avoid major climate change. Further agreements are needed that go beyond stabilizing emissions to reduce them sufficiently to stabilize and then reduce the atmospheric concentration. Global cooperation to tackle the issues effectively is therefore crucially dependent on cooperation between the two countries with the greatest emissions, the greatest energy use, and the greatest economic power, the current global hegemon and its most likely successor, the United States and China.

Powerful arguments have been made that dramatic cuts in both oil use and greenhouse gas emissions can be achieved without major adverse economic effects, particularly in light of increasing business involvement in the development of profitable alternative technologies (Stern, 2006). Matthews and Paterson (2005) have put forward two arguments for why progress in this direction remains limited. First, neoclassical economic models have fundamental weaknesses in their treatment of technological change that give invalid results for policy-induced changes in the rate of growth and cannot analyze long-term, nonlinear transformations. Second, the pursuit of GDP growth diverts state policy from what is argued to be its prime objective, which is not output growth but capital accumulation. It would therefore be in states’ own economic interests to promote a Schumpeterian “gale of creative destruction” in which capital moves out of oil-hungry industry and into the technologies of energy efficiency and renewable resources.

Matthews and Paterson (2005) recognize weaknesses in this as a viable long-term solution. It involves a basic accommodation to fundamental neoliberal norms that are not universally accepted and keeps global politics on an accumulation-oriented course that systemically engenders ecological problems. To this it may be added that it would not be in the interest of either the United States or China to promote a gale of creative destruction that created industries in the other while destroying its own. If they were to lead such a transformation, they would have to lead it cooperatively. Whether their interests are best served by capital accumulation, GDP growth, or the

two together, their prime objective is neither. There may come a time when business interests override the national interest in a fully integrated global economy, but as of now, the prime objective of the state remains as described by Plato (360 B.C./1955). The United States and China both need energy to fuel their industries and the material aspirations of their citizens. Whether the energy comes from cheap oil, as now, or from cheaper or costlier biofuels, as developed through a Schumpeterian wave of innovation, and however efficiently the energy might be used, it remains a global natural resource of vital importance to every country's economy. Separate sovereign states have competed for natural resources throughout their history. The United States and China continue to compete for them now. Each is following Huntington's (1993) high-risk strategy of maximizing its own economic and military advantage while hoping to find some accommodation in the long-term future.

To give an indication of what alternative strategy might be pursued, the remainder of the article steps beyond short- and medium-term action to examine the implications of an anticipated long-term outcome. A strategy might then be devised that takes full account of them. In this long-term scenario, global environmental law is assumed to be fully in place, using either economic instruments or direct regulation to manage the global environment effectively. Full integration of the world economy is assumed, although not necessarily with international trade flows as high as now and probably far lower, constrained by fully internalized environmental costs. No assumptions are made about social conditions other than that economic integration is as in the EU but on a global scale, with free movement of labor as well as goods, services, and capital. One further assumption is made. The United Nations or some other internationally appointed authority is assumed to have full control of a global police force, with sufficient power to secure peace.

The United State

In visualizing a world without war, Immanuel Kant rejected the idea of a democratically elected world government and proposed instead a federation of free states. He was skeptical about democracy for any state, with a view that majority rule could never represent the whole people (Russell, 1961b, p. 684). Aristotle and other ancient critics were even more skeptical, believing that the conventional democratic process would inevitably degenerate into a tyranny of oratory (Burnheim, 1985, p. 3). For the state to be governed in the interest of the people as a whole, Kant preferred a monarchic republic, and his federation of such republics would abolish war by adopting a covenant forbidding it. The federation would require a minimal level of global law to secure the covenant, but it was not envisaged that it would integrate to the extent of creating a single global economy.

Economic globalization has already taken global integration well beyond what Kant proposed, to necessitate more extensive laws and similarly extended means of

law enforcement. The World Trade Organization and other international bodies responsible for orderly international markets in goods, services, and capital have already established binding multinational rules, with sanctions for noncompliance. Enforcement is generally weaker for associated social and environmental issues, but here too national sovereignty and autonomy are already circumscribed by a wide body of international law, with recognized needs for new or more extensive institutions in other areas (Held, 2002). With or without a democratic process, economic integration pushes Kant's global federation toward having to adopt the full legal framework that would correspond to an overarching global state.

Bull (2000) has considered how adaptations of various past and present forms of government might take effect in a globalized world and identified the distinct possibility that some other alternative might emerge, which "does not conform to any previous pattern of universal political organization" (p. 466). It may be inferred from Plato's analysis that this is by far the most likely outcome.

Plato's utopian vision of what he hoped the state might be never materialized, but his description of what it actually is has proved remarkably resilient through every form of government that has ever been established, whether egalitarian or oppressive. He explained why this is so, in the need for the state to have an army, with straightforward consequences. For the army to be effective it had to be directed by "the Guardians who are to be given authority as Rulers." Under the rulers there had to be auxiliaries, "their function being to assist the Rulers in the execution of their decisions" (Plato, 360 B.C./1955, p. 159). In a modern democracy, the rulers are elected by popular vote, but they still rule. They still have auxiliary elites to help them do it. They still exist for the same reason, as Plato explained, to enable the state to defend and promote its interests against those of other states. When there are no other states, everything changes.

It is difficult to appreciate the enormity of what globalization means. In some ways, the world that emerges may be quite similar to the one we know. If it is to be subject to the rule of law, there must be a law-making body, a court of justice, and a police force, all of them global but identical in function to those of any state now. There may be several layers of government through which many separate identities govern themselves, with each layer subordinate to those above it through the principle of subsidiarity, as is approximately the case now in the United States of America, the EU, and the United Kingdom of England, Scotland, Wales, and Northern Ireland. The global interactions between these identities may be governed by principles that are very similar to those already emerging, or as envisaged in a fully developed system of cosmopolitan sovereignty (Held, 1997, 2002). This might reduce or eliminate global poverty, and it might not. Yet in many other ways, a global state or its equivalent must be radically different from any state yet known. Its integrated global economy would be similar to that of the EU, in which economic competition between countries has been largely replaced by competition between firms.

But unlike the EU, a global state's global economy would have no other economy competing against it. Among many other redundant determinants of social structure, there would be no further need for economic behavior to be organized around a recognition that "in modern war the great expense of firearms gives an evident advantage to the nation which can best afford that expense" (Smith, 1776/1904). With no other state competing against it, economically or militarily, the economic systems and social structures of a global state must be determined by factors that are completely different from those described by Plato (360 B.C./1955). There may be rulers, as now, there may be elites, as now, and there may be abject poverty, as now, in every country or only some, as now, but if so, it would be for entirely different reasons. Whatever social and economic structures might emerge, they would be radically different from now. Whatever new governance systems we might develop now, and whatever new principles we might adopt to support them now, they would not survive if they were not compatible with the way human beings would interact with each other when Plato's theory of the state no longer applies. We simply do not know what forms of social structure would be viable, because no state that is free of other states competing against it has ever existed.

This has crucial implications for the decisions that are being made now. In the world that emerges from globalization, every aspect of culture that is influenced by the socioeconomic structures of the state must be radically different from the cultures that we are familiar with. The Judeo-Christian liberal democratic cultures of the West, the Confucian cultures of the East, Islamic cultures, Hindu cultures, and every other culture in the modern world have all evolved through many thousands of years of competition between separate sovereign states. In the absence of such competition, all these cultures would change dramatically. This may have little influence on their spiritual aspects, which still have to learn to live with each other, but their socioeconomic aspects must evolve into a new set of cultures that is radically different from them all. In consequence, classical economic theory, neoclassical economic theory, Marxist–Leninist economic theory, and every other economic theory that has ever been devised will all have become nothing more than explanations of how people behaved in the past, in entirely different circumstances.

This offers considerable hope for sustainable development. There is nothing to be gained from defending to the death a culture or an economic system that is going to disappear anyway. If there really is no fundamental difference between the races that comprise our single race, it becomes irrelevant which ethnocultural group is the one to develop the cultures and economic systems of a globalized world, or preferably all of them in concert. Whether we choose to compete to the end for which group wins, or set about the task of uniting now, the only difference it will make to the end result is the quality of the environment that survives and the ancestry of the people who survive.

In helping to make sustainable development a practical reality, every discipline of the social sciences has an immense role to play that has hardly been started. It would

be no exaggeration to compare it with the whole of the Enlightenment, in which Smith, Ricardo, and a host of other thinkers analyzed the emerging socioeconomic structures of the industrial production system while it was in the process of displacing the landowning feudal system. On that occasion, the process entailed civil wars in Britain and America, bloody revolution in France, and then similar revolutions throughout Europe as democracy seized the power of kings and the Holy Roman Empire collapsed. To avoid similar upheavals as the global knowledge-based economy establishes itself and comes to terms with climate change, biodiversity loss, and the need to eliminate its dependency on oil, the learning process must be faster.

When Thomas Hobbes wrote his early contribution to the Enlightenment immediately after Britain's civil war, the nature of the emerging socioeconomic structure was far from clear. When Adam Smith described it over 100 years later, it was still not clear in France that the new economic system and its associated democratic process would soon apply there. We are now in a similar situation, needing to identify the clues in current developments that reveal the fundamental differences between the economic structures and governance systems of a sustainable, equitable, knowledge-based, integrated, global economy and those of the core-periphery industrial economy described by Smith (1776-1904) and Ricardo (1821-2001). The most important clues are almost certainly to be found in the economic relationships between the United States and China. Capital investment has already moved beyond core periphery to joint venture, with pressures to extend the joint venture beyond business to the regulation of business, if only to serve the common interests of American and Chinese businesses in regulating the global environment and the conditions in which their workers work. As the two countries forge the foundation of a new global economy, each is being influenced by the other to offer clues on what the role of profit might be in an economy that does not depend on perpetual growth to maintain its stability. Further clues are likely to be found in the different governance systems associated with the different economic systems. America's growth-dependent pure market economy will not suffice. Nor will China's blend of capitalist and communist economies. Neither country's approach to human rights will suffice, either. However, as the two countries come together to understand each other better, the easier it will be to identify what form of socioeconomic governance will suffice for them and for a technologically communicating, ecosystem-dependent human world.

The biggest roles in this global revolution of social and economic thought must inevitably be played by thinkers and policy makers in the United States and China. We are all involved, however, and we are flying blind. We are allowing the creation of an integrated global economy to just happen, without the remotest idea of what an integrated global economy will be like. We are attempting to develop a polity to manage it, with no idea of what that will be like, either. To avert the potential disasters of unsustainable development, sustainable development needs a clearer vision of what it is developing.

Conclusion

The complexities and contradictions in the current understanding of sustainable development conceal underlying tensions that must be resolved before the concept can become a reality. These include the need for economic growth to maintain the stability of an unconstrained market economy; the tendency of such an economy to depress incomes to subsistence level somewhere in the world; the potential for economic globalization to remove the distinction between the high-income countries at the core of the international trading system and the low-income ones in its periphery; the inability of market forces to manage global public goods without enforceable global laws; the historical tendency of resource scarcity to trigger resource wars; and the tensions between belief systems that have evolved differently in different parts of the world.

This article has identified a key aspect of environmental and economic globalization that might enable all these tensions to be resolved: If an integrated global economy that manages the global environment effectively were realized, it would remove the economic and military threats that have been posed throughout history to every state by the existence of other states; hence, no existing socioeconomic structures would remain viable, nor those aspects of belief systems that are associated with them. The task of identifying what forms of social and economic structure should now be encouraged to develop is an immense challenge for every discipline of the social sciences. This is particularly so in the United States and China, the current world leader and its strongest potential challenger. Far from posing a threat, the deep differences between these two great countries present an opportunity for joint development of the new economic systems and governance structures of an ecologically sustainable, socially equitable, technologically integrated world.

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