

SUSTAINABLE DEVELOPMENT: STRADDLING THE DIVIDE BETWEEN TWO WORLDVIEWS

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Abstract: The interpretive ambiguity of sustainable development is apparently the source of its widespread appeal. What is not as clear, however, is that the contentious nature of this collocation lies not so much in a lack of denotative or descriptive power, but in an axiomatic clash of perspectives at its core. A relic of the colonial era when culture and nature were viewed not only as distinct entities, but also as resources to be exploited, the modern idea of development is clearly steeped in values that prioritize human imperatives. Attempts to splice sustainable connotations onto this concept, which are derived from a wholly distinct epistemology, have thus far proven unsuccessful. Evidence gleaned from official discourse on sustainable development suggests that this is due to the radical discontinuities between a modern worldview that privileges a mechanistic outlook to human-nature interactions and an ecological one where the emphasis is on an organic reality composed of complex systems. In order to address the normative controversies that have arisen as a result, an alternate paradigm is proposed that seeks to ground the primary objectives of sustainable development in a more harmonious environment.

Keywords: critical analysis, ecological worldview, economic growth, modernism, sustainable development

INTRODUCTION

Sustainable development is arguably the most influential concept to emerge over the past thirty years. Its broad acceptance is attributed in part to its denotative ambiguity, in effect, promising diverse things to different people. In an attempt to establish some normative parameters around the idea, it has gained increasing complexity as it accrues legal, moral, and political leverage. Moreover, sustainable development prioritizes the eradication of poverty in a manner that does not preclude the prosperity of future generations, nor does it compromise the viability of nonhuman species and the ecosystems upon which they depend. In this respect, it is viewed as a sort of panacea for many of the world's most pressing problems.

The concept has also evoked much critique from opposing sides of the political spectrum. Those concerned about its environmental implications have pointed to the oxymoronic nature of a collocation in which the urge to improve the human condition primarily via material acquisition is juxtaposed with the realization that humanity must abide within natural limits. When progress is predicated on an economic paradigm that assumes perpetual growth in people, products, and pollution, this is difficult to reconcile with calls to preserve the earth in as pristine a condition as possible. On the other hand, those who prescribe to the idea that natural limits can be overcome through technological innovations, while also questioning the dubious nature of forecasting the

needs of future generations, are troubled by the constraints that sustainable development seems to place on economic growth prerogatives in the present.

It will be argued here that the source of both its ambiguity and controversy are one in the same; namely, that the term lies precariously on the fault lines between a modern and ecological worldview. As such, it is destined to fail in its attempt to act as a bridge across an ideological divide wherein on one side human imperatives are foregrounded and on the other all life forms carry equal weight. Actually, the discursive antagonisms that manifest in the concept of sustainable development can be traced in the western tradition to the metaphysical debates over the nature of reality that began in the classical age. The idea of sustainable development might be construed, then, as a recent response to the enduring uncertainty of who we are as a species and how that affects our relationship with the rest of life on the planet.

After uncovering the philosophical roots of both modern and ecological thought, with particular emphasis on their guiding axioms and assumptions, the focus of this inquiry turns to the evolution of the sustainable development concept. An examination of official declarations, international reports, and monographs demonstrates how its core concepts are in fact based on a series of distortions, confluences, and omissions, which, in toto, render the term virtually meaningless. The debate over its implications, rather than lead to any important changes, has instead served to entrench a global trading system that exacerbates the gap between rich and poor. In the few cases where ongoing economic growth has lifted a significant number of people out of poverty, as in China, the ecological costs have been considerable. The upshot is that the pursuit of sustainable development to date has failed to achieve any of its most vaunted goals, such as economic parity, intergenerational equality, or ecological stability. Discussion therefore ought not to be on its ostensible normative implications but on how to overcome the deep epistemological divisions that continue to bedevil us at this moment in human history. Only then will it be possible to confront the more concrete challenges that the notion of sustainable development rightly elicits.

TWO VIEWS OF THE WORLD

A proper place to begin a discussion of sustainable development is on the fissures of western intellectual history. On one side stand the intellectual heirs to a tradition whose guiding axiom is an unchanging and indivisible reality of which certain knowledge is possible. There are, in effect, two levels of existence. The one our senses perceive to be real is in constant flux, whereas the eternal nature underlying the phenomenal world can only be understood by way of

the intellect. Knowledge, as a result, is seen to reside in the human mind. Such notions are made manifest in the mind-matter dualism at the heart of the scientific method.

The predominant approach to empirical inquiry in the natural sciences is based on the assumption of a direct correspondence between sensual data and preexisting facts. The rational process, utilizing observation and analysis, is thus the means through which universal truths are realized. This process entails not only breaking down all complex phenomena into their constituent parts, but also treating these atomistic components as completely separate from the observer. The goals of dominance and control become the concomitants to ideals of prediction and efficiency, which purportedly allow for an impartial (i.e., objective) perspective on an essentially mechanistic world.

Human beings, accordingly, are the planetary tinkerers whose technological prowess permits an experimental stance toward an ontologically separate reality. Such a view is at the core of anthropocentrism, which maintains that nature's value resides solely in its human utility. Nature is not only distinct from culture, but also occupies an inferior position in the cosmological hierarchy with homo sapiens at its apex. Human ends are thus paramount in contrast to natural processes that are seen as temporal obstacles, often rendered as problems or issues, on the linear road of progress. Indeed, human imperatives normally trump the needs of all other species, including the larger systems within which they exist.

In contradistinction to the modernist tradition that has dominated western thought for over two millennia, a unified apprehension of the world as an interrelated organism has persisted mostly on the epistemological periphery. It begins with the assertion of an ever-changing reality composed primarily of dynamic relationships. In this view, the world is fully integrated to the extent that it is impossible to separate the mind from matter. As life continually evolves, so does human understanding of it. Knowledge is made possible only when sensory experience is channeled through the fundamental categories or mental frames of cognition. The mind, that is, plays an active role in organizing what is experienced. In consequence, nothing can exist independent from interpretation, which points toward the inherent limitations in observations and descriptions of natural phenomena.

The interpretive mode of inquiry thus strives for holistic understanding. Rather than seeking universal truths in the attributes of substances that comprise a static universe, the presumption is that comprehension is limited to the particular in context. We must therefore settle for reasonable

approximations or epistemic gains in our ever-changing knowledge base. Interpretive inquiry as it has developed in the social sciences, in particular, fosters a participatory, diverse, and dialectical appreciation of the complex patterns of organic life. The theoretical precursors of ecology, particularly its holistic branch, are also found on this 'qualitative' side of the epistemological divide in western thought.¹

An ecological worldview presumes that the universe, as a dynamic, creative life force, is composed of an intricate web of relationships. These connections manifest themselves in patterns, which give each system its unique identity. Fundamental to the stability of living systems is their ability to adapt to changes created through interactions with their environments. Such information and energy exchanges are maintained because all organisms are essentially open systems. This allows them to both renew and recycle their components as well as to reach out beyond their permeable boundaries to transcend themselves. In this way, ecosystems are characterized by an organic wholeness and inherent complexity that cannot be reduced to atomistic parts of an essentially mechanistic order apprehended via the impartial observation of an empty and lifeless existence.

Notwithstanding the stark divisions between a modern and ecological worldview as outlined above, the concept of sustainable development finds itself firmly rooted in neither as it attempts to draw upon both the human-centered prerogatives of development and the holistic connotations of sustainability. In the following section, we examine the conceptual evolution of this influential term by tracing its discursive lineage since the development paradigm took root in the middle of the twentieth century.

THE DEVELOPMENT OF ASSISTANCE

As previously discussed, modernist thought draws upon a deep strand of anthropocentrism that is given its greatest expression in a mind-matter dualism, which lends credence to the belief that nature is a resource with instrumental value. Manifestations of this worldview can be found in colonial attitudes toward not only the indigenous peoples of the territories under their control, but also in the manner in which so-called natural resources were exploited. Accordingly, this seminal experience with the 'other' that served to reify an us-them (and human-nature) divide had a strong influence on postcolonial relationships (Adams, 2003). The basic premise of official development assistance, which gained international traction after the Second World War, was that the economies of the former colonies, along with those defeated in the war, needed to be

transformed. Regarding the latter, though, the terms of engagement were mostly recovery, reconstruction, and reparations. Development assistance was reserved for the poor (i.e., pre-industrialized) countries (Fuhrer, 1996). In effect, the promise of economic advancement was used as an altruistic guise under which to re-affirm a condition of dependency. Countries that had their natural and intellectual capital expropriated under colonial rule were cajoled into joining institutions that promised relief drawn primarily from the wealth created at their expense.

Cast against the physical destruction of the war and the collapse of the global economy that preceded and partly instigated it, a consensus arose that international economic integration and cooperation were necessary to ensure future peace and prosperity. The institutions and organizations created during and after the war all attest to the importance of this belief. The International Monetary Fund (IMF), for instance, which was established at the Bretton Woods conference in 1944, states that its primary function, amongst others, is to "facilitate the expansion and balanced growth of international trade, and to contribute thereby to the promotion and maintenance of high levels of employment and real income and to the development of the productive resources of all members as primary objectives of economic policy" (International Monetary Fund, 2011, p. 2). Working in concert with the IMF, the International Bank for Reconstruction and Development (IBRD) was created primarily to assist Europe and Japan in their post-war recovery. In its current manifestation as the World Bank, its main concern is promoting economic growth in poor nations.

Also stemming from the Bretton Woods conference was the idea for an International Trade Organization (ITO). Because the ITO failed to materialize, the General Agreement on Tariffs and Trade (GATT) became the de facto facilitator of global trade between member countries by "developing the full use of the resources of the world and expanding the production and exchange of goods" (1986, p. 1). The original GATT from 1947 was amended in 1994 to become the legal basis for its successor, the World Trade Organization (WTO). As stated in Article XVIII (Governmental Assistance to Economic Development), realizing these goals depends upon adhering to the rules and procedures of the GATT that facilitate rapid economic development. Concessions, in the form of protective measures, such as tariffs or subsidies, are made for economies that "can only support low standards of living and are in the early stages of development" (ibid. p. 29).

At the same time, the United Nations was created as a forum where international disputes could be resolved

in an equitable and just manner. As a means of achieving these ends, the preamble to the UN Charter states that it shall “employ international machinery for the promotion of the economic and social advancement of all peoples.” In the attempt to establish a stable economic order for world trade, then, emphasis was placed on ensuring that those countries deemed less advanced, or perhaps not inclined to enter into accords in which they would be placed in subordinate positions, were afforded special status. As the former colonies began to gain nominal independence after the end of the war, a system of keeping their untapped pool of human and natural resources closely tied to the international economy, and, hence, outside the communist orbit, was already in place. The United Nations and its myriad offshoots, agencies, and organizations working in tandem with the International Monetary Fund and World Bank played a pivotal role in promoting the importance of economic advancement for the so-called undeveloped world, thereby instigating a fundamental binary in international relations.

By closely linking economic growth with both social development on the one hand and peace and justice on the other, countries in need of the former and desiring the latter were in no position to reject offers of assistance from the most powerful international bodies of the time. With the exception of the communist block, a wide swath of nations would come to embrace the panacea of economic growth-cum-development and the global hierarchy it entailed. With the playing field clearly tilted toward those in the position to write the rules from the outset, a two-tier economic system was established that despite its lofty rhetoric locked many countries into a state of perpetual dependency that persists to this day. Nations in need of various forms of assistance then are still mostly those in need now.

The main problem is that no one has ever clearly defined what it means to be a ‘developed’ or ‘developing’ nation. In *Measures for the Economic Development of Under-Developed Countries*, for instance, a group of economic experts from around the world were tasked by the UN Secretary-General with the important problem of reducing unemployment in the under-developed countries, considered to be the essential element of an expanding world economy (United Nations, 1951). They state at the outset that their difficulty in defining ‘under-developed countries’ is due to the theoretical possibility that a country is poor because it lacks adequate (natural) resources, and that such a country would not be able to improve its per capita income, which is the sole criterion for distinguishing disparate countries. Be that as it may, all countries can, according to the authors, make more efficient use of the resources at their disposal to address

unemployment and improve their standing in the world economy.

Aside from the issues involved in equating development with per capita income and the dubious methods of comparison that ensue, this report claims that before a country can achieve economic development, it must adopt a social mind-set that values material possession more than leisure and that equates progress with mastery of nature. In addition to these psychological prerequisites, there must be an embrace of new technologies regardless of how many jobs they make obsolete as well as instituting the necessary legal and political measures that will encourage foreign investment. The upshot is to move people, or surplus labor, out of agriculture and into the industrial sector while increasing agricultural yields, the latter complementing the former. In summation, the cure to chronic unemployment in poor countries is industrialization. Of course, in order to industrialize, a country is in need of technical assistance and capital investment, which can be financed by the proceeds of exports or borrowing. Favorable terms of trade are thus essential for under-developed countries. The only way to achieve these goals, then, is to join those international institutions devoted to promoting the economic growth model.

Following recommendations made in the UN report, the International Finance Corporation (IFC) was established in 1956 as an affiliate of the World Bank to stimulate private investment in developing countries. Its main purpose is “to further economic development by encouraging the growth of productive private enterprise in member countries, particularly in the less developed areas, thus supplementing the activities of the International Bank for Reconstruction and Development” (International Finance Corporation, 2012, p. 1). Many other financial groups and institutions, such as the Inter-American Development Bank (IDB) founded in 1959, were to follow with similar mandates to reduce poverty in the less development countries through economic growth. Due to the failure of such efforts, however, the first (of four) United Nations Development Decade to foster international economic cooperation was declared in December 1961. Noting that the gap between developing and developed countries increased despite considerable attempts made in the previous decade, UN Resolution 1710 (XVI) urged member states to implement measures “to accelerate progress towards self-sustaining growth of the economy of the individual nations and their social advancement so as to attain in each under-developed country a substantial increase in the rate of growth” (1). Toward these ends, developing countries were, inter alia, encouraged to stimulate private investment concerning the “extraction and marketing of their natural resources”

(2b).

At the same time that a new economic world order was being institutionalized, most notably by the establishment of the United Nations Conference on Trade and Development (UNCTAD) in 1964, and its offshoot, the Group of 77, an intergovernmental body designed to advance the economic interests of developing countries from the South vis-à-vis those from the industrialized North, discordant voices were beginning to highlight some of the negative consequences associated with the rapid use of natural resources by an expanding global population.² As a consequence, hegemonic attempts to integrate the global economy along the lines of a development assistance model reached its first ideological impasse when it was confronted with the environmental agenda. The fact that seventy-seven countries, with more to follow, bought into the false dichotomy of a two-tier economic system attests to the power of modernist thought. This new economic order set in place a condition of dependency between nominally unequal parties rather than a more reciprocal one characterized by interdependence.

Designating national income or the gross domestic product as the basis of prosperity, which is clearly derivative of the true wealth of peoples and nations, is the first obfuscation. To the extent that economic activity occurs via trade between countries, this reciprocity must be acknowledged. Moreover, the new economic order ignores the extreme inequalities of wealth that resulted from the plunder that occurred during the colonial era. Furthermore, developed countries cannot continue to industrialize without the resources located in developing nations. The North, that is, is dependent on the South. The ideology of development with economic growth at its base distorts this reality. It also muddles the fact that perpetual material progress is not possible on a finite planet. A certain level can be attained after which population and resource pressures begin to exhaust the natural capital of future generations (as is the case today). Technological advances merely put off the inevitability of addressing these issues while hastening the destruction of ecosystems upon which all economic activity depends. To openly encourage all people to adopt a materialistic lifestyle based upon consumption and waste is akin to ecological insanity.

Growth, of course, is a difficult idea to oppose, particularly when it is positioned as a necessity—one that undergirds peace and prosperity. Arguably, the exact opposite is true. As both individuals and nations seek more material possessions through industrialization, they deplete the collective resource base, which, in turn, puts them into greater competition. Military power is often involved in securing access to or control over those entities

deemed most valuable. The historical record is littered with accounts of how conflicts have arisen under such circumstances. Furthermore, military action, along with consumerism, compromises the integrity of natural systems through degradation and exploitation. Prosperity for the few at the expense of the many is the result, which, of course, brings us full circle to the need for development assistance. The gaps between extremes of wealth and comfort on the one hand and poverty and suffering on the other can only be eliminated when everyone embraces the ideology of the free market.

Whereas growth is subject to quantitative measures, development concerns a process of maturation most recognizable along qualitative parameters. Something can develop, that is, advance or improve, without getting larger. Still, because development is often conflated with enhancement or expansion, ideas that are relatively analogous to growth, it has been easy to substitute the former with the latter. Actually, modern connotations of development are equated with industrialization, which refers not simply to the flourishing of mass production by large-scale industries, but the degree to which human activity has been mechanized. The ubiquity of machines operating independently of and as a substitute for human effort is the hallmark of industrialization. Moreover, industrial activity is renowned for its compartmentalization of what was once a veritable matrix of physical, intellectual, and emotional activity—to wit, work. That most human endeavor is now mediated by machines, which have become a distinct facet of quotidian life, is further evidence of how a modern worldview has appropriated the organic connotations of development.

With the dualistic and atomistic axioms of modernism made manifest in colonial attitudes toward nature and other, the first chapter in the development story unfolds according to the dictates of industrialization. The proposition put forth at the time is that international economic integration is a prerequisite for peace and prosperity, and that in order to achieve this, all countries must participate in a global system according to common standards and rules. As a result, countries are categorized according to their level of industrialization, with undeveloped countries in need of technical and financial assistance from developed countries so that the former can pursue growth policies that include the efficient use (read: extraction and export) of natural resources. While the notion of international cooperation is an appealing one, it is actually based on an institutionalized form of inequality between nations, a universal approach to modernization that equates development with growth, and the disequilibrium of natural and cultural systems—all of which are antithetical to ecological principles. Consequently,

development and environment would now be cast as antagonists in need of reconciliation.

ENVIRONMENTAL DEVELOPMENTS

Efforts to address newfound concerns with protecting natural systems in a manner that would continue to preserve the development/ growth agenda began in earnest with *The Founex Report on Development and Environment* (1971). The report begins by urging developing nations, somewhat contradictorily, not to reconsider the value of pursuing the development path despite the fact that environmental damage and disruption have been caused mostly by “industrially advanced countries” in the process of developing because it is “a cure for their major environmental problems” (1.5). Accordingly, the concept of development must be defined more broadly to include environmental issues alongside cultural and social goals. “To the extent that these objectives support or reinforce economic growth – and it can be shown that some of them do – their place in the pattern of priorities would be more readily established” (1.7). When conflicts occur between economic growth and these new (environmental) objectives, countries must decide on a case-by-case basis how to proceed, rather than be compelled to follow “any rules established *a priori*” (ibid.).

The upshot is that developing countries are being placed in the classic double bind wherein if they continue to develop as they have been urged to do over the previous two decades by following the lead of those already developed, they will suffer from environmental degradation, and if they choose to reject the development/ growth agenda, they will be faced with the prospect of a rising and increasingly impoverished population also prone to environmental destruction. Either way, developing countries must address environmental issues, and the most efficacious means of doing so, according to the prevailing wisdom, is to adopt the economic growth-cum-development paradigm.

Echoing recommendations made in *Measures for the Economic Development of Under-Developed Countries* and the *International Development Strategy for the Second United Nations Development Decade*, the report insists that full-scale industrialization of agriculture must precede economic development. The report goes on to explain that traditional farming methods, which have persisted for centuries, are now inadequate due to population pressures. This begs the question as to why, after such a long period of relatively sustainable practices, are large numbers of people transgressing the limits of their resource base? Again, following *Measures for the Economic Development of Under-Developed Countries*, perhaps modernization has had the desired hegemonic effects—that is, thought

processes are beginning to embrace notions of progress, technology, and materialism, in contrast to traditional cultural norms that had *developed* within certain ecological constraints. In effect, developing nations are being asked to forego a type of development that has proven to be ecologically benign for a new kind that entails prodigious use of chemical fertilizers, pesticides, fossil fuels, and water, all of which are environmentally problematic. More importantly, modern agricultural practices require significant investment in new technologies, and, as a result, development creates deeper forms of dependency.

In another apparent obfuscation, developing countries are told that they have a comparative advantage regarding the cost of production for polluting industries. For example, they may have natural resource endowments, the additional capacity to absorb pollution, and weaker environmental standards. As long as favorable financial terms and conditions are agreed upon, then developing countries can specialize in these polluting industries. Whereas the capacity to absorb pollution is viewed as an economic advantage, it is also cast as an environmental burden that must be considered. Developing countries can address both simultaneously by keeping their collective eyes on the trade and aid policies at the heart of their development plans. And in the process, they should “articulate their own interests and insist on international arrangements to protect these interests” (4.14). Within an anthropocentric paradigm of economic competition, destruction of natural systems is construed as an advantage irrespective of the consequences for other species; moreover, it reifies a bipolar world where narrow interests trump solidarity, and where international conferences become fora for deepening the arbitrary divisions that impede true progress in the form of ecological enlightenment.

Commissioned to provide a conceptual framework for participants at the *United Nations Conference on the Human Environment*, a committee of experts from fifty-eight countries prepared a report entitled *Only One Earth* (Ward & Dubos, 1972). While the report attempts to find a balance of conflicting views and does so in a manner that reflects a holistic perspective toward environmental issues within the framework of international economic relations, the focus is on how to make the planet a more comfortable place for continued human prosperity in the face of ecological limits. It provides a broad and detailed chronology of how we have reached this impasse in the human condition wherein predominant cultural practices are apparently threatening to disturb the dynamic balance of natural systems. Taking the colonization of the earth by human beings as a fait accompli, it argues for intelligible management and

stewardship of the planet while also insisting that industrialization is the only path toward higher living standards.

In a nod to the concerns of developing countries that the newfound emphasis on environmental issues will derail the aspirations of their people to lift themselves out of poverty by creating additional costs or trade barriers, the report asserts that “growth and environment are not in necessary opposition” (Ward & Dubos, p. 142). Although it advocates, *inter alia*, for modest growth rates, the report perpetuates a set of false dichotomies between pollution and employment, on the one hand, and human suffering and ecological destruction, on the other. Nonetheless, it emphasizes what so-called developing countries must do in terms of industrializing agriculture along the lines of the green revolution and modernizing its cities. Regarding the former, it endorses a rational approach to land management and wilderness preservation that does not consider the needs of other species nor does it entertain the notion of coexistence; rather, in the fashion of modernist thought, it prioritizes the needs of humans. It also furthers the untenable notion that the only way developing countries can address poverty, which it refers to as the worst form of pollution, and overpopulation, is by pursuing rapid and high economic growth. Presumably, such insistence on unbridled economic activity does not undermine its acknowledgement “that there are limits to the burdens that the natural system and its components can bear . . . limits to the amount of manipulation that man can exert upon natural balances without causing a breakdown in the system” (p. 214).

The Declaration of the United Nations Conference on the Human Environment merely reaffirms the main points of the previous two reports; viz., that environmental problems are due to a lack of development, and that economic growth is necessary to not only preserve the peace but also protect nature (United Nations Environment Programme, 1972). Its distinction at the beginning between the natural and man-made aspects of the human environment underscores a guiding principle of modernism that what humans create is not of the natural order. Although cautioning against excessive population growth as an impediment to development, the declaration asserts that “of all things in the world, people are the most precious,” for they can improve the environment (5). Indeed, ecosystems are to be properly managed, nature conserved, wildlife protected, and pollution prevented as a means of accelerating development. The declaration goes on to say that “for the purpose of attaining freedom in the world of nature, man must use knowledge to build, in collaboration with nature, a better environment” (6). Such notions are clearly steeped in a perspective that

places the utopian burden on humans of improving while destroying that which it seeks greater autonomy via cooperation. Aside from the logical discontinuities of pursuing these objectives, the idea that we ought to free ourselves from constraints imposed by the natural order is the most troublesome as it is a core assumption of the development model based on technological progress and continuous economic expansion.

In contrast, Meadows et al. (1972) maintain that growth is not a panacea to the world’s problems; in fact, it is not possible to pursue it indefinitely on a finite planet. Failure to acknowledge ecological limits will lead to global collapse. Moreover, the authors make clear that growth not only perpetuates poverty, but also increases the gap between rich and poor. While the optimistic scenarios in *The Limits to Growth* offer a first glimpse of what a sustainable development model would entail, the book ignited widespread opposition to its claims as being overly alarmist. For the industrialized countries, the notion that growth should be curtailed was seen as threat to the entire international economic system, and, thus, their political power. Developing countries, conversely, were concerned that this newfound interest in the environment would impede their ability to address the basic needs of their people. *Catastrophe or New Society?*, for example, sought to change the focus not to a potential crisis in the future but to the injustices of the current global system (Herrera et al., 1976). Rather than trying to make predictions according to present trends, which the authors claim are based on the unequal distribution of power, theirs is a normative prescription on how to radically change social values and international practices that are responsible for destroying the environment.

In their view, poverty and inequality do not induce population growth but are its consequence. Therefore, the focus ought to be on not how to reduce the number of people living in poverty but on how to improve the conditions of those already alive. The goal of development should be the eradication of hunger, which would have a positive effect on birth control. Their ideal global society would proceed from first identifying the social needs of each group according to their own criteria, then designing an economy to meet those needs, the result of which would be an optimal (read: equitable) distribution of resources in accordance with natural limits. This is based on the principle that all people have the right to food, education, and housing so that they can participate in a healthy culture and society. According to their mathematical models, everyone could achieve satisfaction of their basic needs within one generation, or about twenty-five years, with the only physical limit being a shortage of arable land in

Asia. They do not advocate uncontrolled economic growth, but a reduction in consumption of non-essential commodities and goods, especially in developed countries, elimination of trade barriers, and an increase in investment as opposed to aid, the latter seen as problematic because it leads to corruption and waste.

Picking up from where *Catastrophe or New Society?* left off, *The 1975 Dag Hammarskjöld Report on Development and International Cooperation* proceeds from the assumption that development as practiced over the previous twenty-five years failed because rather than make the alleviation of poverty its focus, it made economic growth the priority (Dag Hammarskjöld Foundation, 1982). In doing so, it not only exacerbated existing inequalities both within and between countries, but also reinforced dependency on a single international economic system. It recommends instead 'another development' model that should first address the basic needs of all people as determined by each country while relying on their own resources. A diversity of approaches that respects the democratic aspirations of each society is the basis of such a model, in contrast to having a single set of policies imposed from abroad and an international economic order that favors the powerful. In sum, the report supports continued development in accordance with the principles of self-reliance and egalitarianism.

The 1975 Dag Hammarskjöld Report on Development and International Cooperation seeks to distinguish itself from the two ends of the economic growth spectrum, that is, those concerned with ecological constraints and those who support technological and market solutions to any perceived limits. It asserts that the main threat to the outer limits of the biosphere is an unequal distribution of wealth. Limits to resources must be understood in terms of consumption, the majority of which occurs in the industrialized world. Therefore, the rich should reduce their consumption through changes in lifestyles and values, rather than the poor reducing population. While claiming that one of the main features of this new development model is for societies to live in harmony with the environment once basic needs have been met, one of its primary concerns is rebuking the notion of physical limits, much in the manner of *Catastrophe or New Society?* Clearly, natural systems should be exploited to the fullest extent possible to achieve the satisfaction of human needs. The aim of technology, as a result, should be on "meeting needs; providing meaningful employment; sustaining ecological viability; and making the best possible use of the specific resources of local eco-systems" (p. 17). Essentially, this would entail a shift from conventional modes of resource exploitation to one where developing countries can

exercise their sovereignty and national management over said resources.

While the report does envision a future where human societies prosper along with other species and systems, it is unable to transcend the anthropocentrism inherent in previous approaches to development. Nowhere in the report is consideration given to the needs of other species for habitat, food, etc., nor is there any mention of maintaining the health of ecosystems in absence of how this may benefit human populations. Indeed, this new type of development is in many respects more human-centered than previous models with its emphasis on "the satisfaction of needs and the liberation of man on the basis of self-reliance at all levels" (p. 63). It critiques the green revolution and its reliance on chemical fertilizers, for instance, not from the damage that such practices are doing to the soil, water, birds, and insects, but because of the exorbitant costs associated with industrial agriculture, including a reliance on modern technologies that are inappropriate in many developing contexts. The solution, therefore, is to ensure that such inputs are produced locally so that yields can increase, thereby embracing agricultural modernization, even though it appears to be antithetical to sustainable and traditional practices.

Also seeking to restructure the global economic system in a more equitable manner, *North-South: A Programme for Survival* (aka. The Brandt Report) reifies a divisive world order along a North-South axis (The Independent Commission on International Development Issues, 1980). Although it repeatedly emphasizes mutual interests based on human solidarity and global justice, it highlights the many differences between developed and developing countries. It acknowledges that the manifold issues facing developing countries can only be addressed by promoting economic growth and industrialization, which necessitates a large-scale transfer of resources from North to South in the form of development assistance that will eventually stimulate growth in the global economy. Such practices are not deemed a threat to the environment as long as economic expansion proceeds in a qualitatively different manner than that of the past. For example, the report urges cooperation regarding management of the global commons (e.g., oceans, atmosphere), while warning of the dangers to future development if environmental problems are not addressed. Still, the overriding goal of expanding global markets, with particular emphasis on maintaining high levels of oil production to fuel industrial processes, is clearly at odds with protecting fragile natural systems and furthering the interests of nonhuman species.

Published in the same year, *Global 2000 Report to*

the President: Entering the Twenty-First Century (Council on Environmental Quality and the Department of State, 1980) sought to study potential changes in population, resources, and environment by the year 2000, and to identify long-term planning and analysis necessary to address them. In sober tones, the report details the enormity and complexity of “the problems of preserving the carrying capacity of the earth and sustaining the possibility of a decent life for the human beings that inhabit it. . . .” (p. 3). In hindsight most of its projections were accurate. There has been rapid growth in population, mostly in developing countries; although world food production has increased, so have the costs, and, as a result, prices have also spiked, in part to a peak in oil production; the gaps between rich and poor both between and within countries have widened; deforestation has continued to accelerate; there are now more people living in water-stressed areas as overall water quality has decreased; and the rates of soil erosion and species extinction have continued their upward trends. According to the report, the most serious threats to the earth’s carrying capacity are the combination of poverty and population growth. Pressures by poor people to meet basic needs are undermining the long-term viability of ecosystems, thereby creating a downward cycle of poverty and environmental destruction.

The foregoing attempts to re-conceptualize development in a more environmentally benign light thus had several untoward effects. First, the environment itself is recast as a ‘problem’ or ‘issue’ that must be addressed through better management, more efficient use, or conservation practices, so that growth can proceed unimpeded. The assumption is that freedom from natural limits can be achieved through technological advances, which, in turn, permits increased environmental protection. Once this modern myth of progress was challenged by the limits to growth argument, old dualisms concerning the priorities of rich and poor and humans and nature resurfaced. In effect, the purported interests of one group are pitted against those of the other with animosity and exploitation being the consequences.

SUSTAINABLE SOLUTIONS

Seeking to redirect the focus of development, the *World Conservation Strategy* advocates for the maintenance of ecosystems and preservation of genetic diversity as a means of ensuring human survival (International Union for Conservation of Nature and Natural Resources, 1980). By linking conservation with development, the strategy implicitly places the onus on developing countries which are its primary audience. The assumption here is that poor people are caught in a vicious circle wherein they are compelled by their poverty to

destroy the environment, which, in turn, retards the development necessary to improve their material existence (cf. Dobson, 2000). In contrast to both *Catastrophe or New Society?* and *The 1975 Dag Hammarskjold Report on Development and International Cooperation*, however, there is nary a word about what causes poverty in the first place.

On the surface, the *World Conservation Strategy* seems to offer a radical shift in the development paradigm by highlighting ecological processes, species, and ecosystems. In so doing, it emphasizes the importance of resource conservation, or the management of “the biosphere so that it may yield the greatest sustainable benefit to present generations while maintaining its potential to meet the needs and aspirations of future generations” (1.4), thereby formalizing the concept of sustainable development. However, it makes clear that “conservation, like development, is for people; while development aims to achieve human goals largely through the use of the biosphere, conservation aims to achieve them by ensuring that such use can continue” (1.5). In effect, the shift in focus from a just and equitable development model as advocated by *Catastrophe or New Society?* and *The 1975 Dag Hammarskjold Report on Development and International Cooperation* to an ostensibly more sustainable one is not much different from an ecocentric point of view. Both place human needs at the forefront while extolling the virtues of economic growth. As a result, species and natural systems should be preserved not because they have intrinsic value, but solely on the basis of their utility to science or industry.

At the behest of the United Nations, The World Commission on Environment and Development was tasked with finding ways to reconcile environmental concerns with developmental goals at a time when developing nations were beginning to assert more independence vis-à-vis the developed world and more solidarity amongst themselves. The result was *Our Common Future*, which set out to demonstrate the inexorable linkages between environment and development (World Commission on Environment and Development, 1987). In the process, it reaffirmed the notion of sustainable development as that which “seeks to meet the needs and aspirations of the present without compromising the ability to meet those of the future” (p. 40). Still, it reiterates that this does not require “the cessation of economic growth” because “the problems of poverty and underdevelopment cannot be solved” without it (ibid.). In fact, it recommends an annual growth rate of at least five percent in developing countries as well as continued growth in developed nations because all are part of the international economy.

According to *Our Common Future*, the two key

concepts of sustainable development are the needs of the poor, and the limitations imposed by the state of technology and social organization. It furthers this line of anthropocentric thought with the claim that the major objective of development is the satisfaction of human needs, which requires economic growth in places where they are not being met. At the same time, sustainable development entails promoting values of moderation in terms of consumption, and harmony regarding the balance between population size and the productive potential of ecosystems. In addition, renewable and non-renewable resources should not be depleted, plant and animal species must be conserved, and any adverse impacts on air and water ought to be minimized in order to protect the integrity of natural systems.

While establishing the discursive parameters within which sustainable development would be discussed in the ensuing decades, *Our Common Future* thus highlights the incompatible aspects of a modern and ecological worldview. Seeking a middle ground between reducing the plagues of poverty and inequality, on the one hand, and the need to protect natural systems from the ravages of economic growth, on the other, it extolls the efficient use of materials and energy, which is also cited as the solution to the global emissions problem. Conservation is likewise seen as an important part of the solution to this dilemma. What it fails to recognize is that technological advances that increase efficiency or aid conservation efforts at best abate, and at worst abet, the continuing destruction of natural systems, particularly insofar as they enable ever larger populations to pursue modern (i.e., industrialized) lifestyles under the delusion that the environment is somehow being protected. To the degree that such ideas are consonant with the modernist proclivity to manage nature in a manner befitting human ends, though, they are seen as logical solutions to the question of sustainability.

The United Nations Conference on Environment and Development (aka. The Earth Summit) is considered to be a landmark event for placing sustainable development on the international agenda. Echoing claims made in the *Declaration of the United Nations Conference on the Human Environment* from twenty years earlier, Principle 1 of the *Rio Declaration on Environment and Development* asserts that “human beings are at the centre of concerns for sustainable development” (United Nations Environment Programme, 1992). Referencing the UN Charter, Principle 2 maintains that states have “the sovereign right to exploit their own resources pursuant to their own environmental and developmental policies” (ibid.). Although all states should work together to achieve sustainable development objectives, Principle 7 introduces the notion of “common but

differentiated responsibilities” (ibid.). States are advised, inter alia, “to promote a supportive and open international economic system that would lead to economic growth and sustainable development in all countries. . .” (ibid., Principle 12). It concludes by asserting that “peace, development and environmental protection are interdependent and indivisible” (ibid., Principle 25). These principles are also the basis of the *United Nations Framework Convention on Climate Change*, the main treaty produced at the conference that set out to provide the terms under which the climate system should be protected “for the benefit of present and future generations of humankind” (3.1).

Agenda 21, another influential document from the conference, is billed as a new global partnership for sustainable development that will allow for the better protection and management of ecosystems (United Nations Department of Economic and Social Affairs, 1993). This should not interfere with an open international trading system that will provide the “resources needed for economic growth and development and improved environmental protection” (2.19). It notes, moreover, that although industrialization is the basis of economic growth, it is a prodigious consumer of materials and energy. Pollution that is a consequence of industrial activity should be addressed by increased efficiency and the development of environmentally friendly technologies. Such developmental and environmental objectives “will require a substantial flow of new and additional financial resources to developing countries, in order to cover the incremental costs for the actions they have to undertake to deal with global environmental problems and to accelerate sustainable development” (1.4).

What is noteworthy here is how the environment is now cast as a ‘problem’ whose solution seems to lie in an increase in activity that is its very cause—economic growth. As long as the predominant frame of reference is modernism, it cannot escape such a designation because what the environment ultimately represents is an obstacle to the potential prosperity and peace that results from technological progress. The latter is of course intimately linked to the exploitation of ‘natural resources’ whose true conservation is antithetical to the development-cum-growth agenda. Accordingly, their destruction is not normally included in the rational calculus of the market; rather, they have been reduced to ‘externalities’ in a manner apropos to a dualistic worldview. From an ecological perspective, however, processes of a cyclical and organic nature in which all life forms participate would rightly be referred to as ‘internalities’, for there can be no ontological outside in an interconnected existence. Attempts to adapt the alien notion of ecological sustainability into the

modern development framework have, in effect, produced little more than conceptual confusion. Hence, the plethora of definitions, principles, and criteria associated with the term (Rogers et al., 2008).

Nonetheless, *Agenda 21* served as the conceptual backdrop to what was billed as the largest international meeting of its kind—the World Summit on Sustainable Development held in Johannesburg in 2002. The Summit’s primary objective is to take concrete action toward sustainable development while building upon the principles of the United Nations Conference on Environment and Development (aka. the Earth Summit) and facilitating the achievement of the Millennium Development goals. The Plan of Implementation states that the three interdependent pillars or main components of sustainable development are economic development, social development, and environmental protection. “Poverty eradication, changing unsustainable patterns of production and consumption and protecting and managing the natural resource base of economic and social development are overarching objectives of, and essential requirements for, sustainable development” (United Nations, 2002, p. 8).

The solution to the supposed competing claims of people and planet appears to be a more benign form of globalization that, according to the *Johannesburg Declaration on Sustainable Development*, is characterized by “the rapid integration of markets, mobility of capital and significant increases in investment flows around the world” (United Nations, 2002, p. 3). Because many nations lack the financial wherewithal to pursue sustainable objectives, financial and technical assistance ought to be furthered through public-private partnerships. While recognizing that gaps between rich and poor are widening, and that the global environment continues to deteriorate, the *Johannesburg Declaration on Sustainable Development* reaffirms its commitment to eradicate poverty through increased industrial productivity while equitably managing natural resources in the name of pursuing those objectives that benefit humanity.

Picking up where Johannesburg left off, the Rio + 20 United Nations Conference on Sustainable Development issued *The Future We Want*, which amounts to little more than an ideological echo of the main themes discussed thus far (United Nations, 2012). More important are the silences that exist within the echo. Under the heading of “Food security and nutrition and sustainable agriculture,” for instance, the word organic does not appear once. Nor is there any acknowledgment of the virtues of permaculture. In the “Water and sanitation” section, the focus is on management and efficiency while respecting national sovereignty. There is no mention,

though, of how the hydrological cycle, which is closely linked to scarcity, drought, desertification, deforestation, and industrial agriculture, amongst other issues, transcends artificial designations such as the nation state or is impervious to human efforts to control its dynamic nature. When discussing the importance of renewable energy and energy efficiency in the development process, the burning question of whether nuclear power ought to be considered part of a sustainable future is not addressed. Finally, in a 52-page document that claims to both take into account the views of all stakeholders in the involvement and participation of promoting sustainable development, and address major themes, such as energy, mining, chemicals and waste, it fails to make a single reference to the global institution that arguably represents the greatest threat to achieving its myriad goals—the military.

Amidst the litany of familiar buzzwords, such as poverty eradication and technology transfer, reverberating throughout the text, two significant discursive transformations occur. The first concerns the latest mutation of the growth-cum-development paradigm, which presumably must now countenance the idea of supporting incessant economic activity—hence the qualifier “sustained” appended to economic growth, as a means of achieving a sustainable future. It would appear that this is just another failed attempt at erecting a conceptual bridge between two distinct worldviews. Of equal importance is the introduction of a “green economy,” as a means of further commodifying the development process. Of course, an economy that assumes endless economic expansion cannot be the basis of preserving an ecological balance where maintaining the integrity of complex natural systems and assuring the flourishing of disparate species are the priority. Nonetheless, the notion that increased efficiency, conservation, and recycling (read: green growth) can be a lucrative business opportunity in the service of the greater goals of sustainability, as opposed to a ploy to extend the shelf life of a civilizational imperative (i.e., growth) clearly at cross-purposes with the unalterable conditions of earthly existence, reveals the difficulty, if not impossibility, of reconciling the competing values of economy and ecology.³

CODA: POETIC COEXISTENCE

Just as the organic and qualitative aspects of development were hijacked to serve the growth agenda, the actual measures of sustainability have become entangled in a modern web of axioms and assumptions for which there is no epistemological exit. The discourse on needs, a key concept at the center of sustainable development, is a case in point. At first, it represents an atomistic approach to related issues with its focus on the individual and his or her

subjective preferences or wants. While claiming that a broader interpretation is required that goes beyond material necessities, definitions that incorporate ideas of *human* well-being or flourishing actually have the effect of narrowing the discussion along anthropocentric lines (e.g., Rauschmayer et al., 2011). Incredibly, the fact that basic needs are linked to natural resources, another modernist conceit, is considered to be a shortcoming of such a focus. Much the same critique can be made of the supposed debate on 'weak' and 'strong' sustainability, which turns on the question of how much capital ought to be bequeathed to future generations (see Dresner, 2008). Aside from the fact that both natural processes and human activity are reduced to resources or assets (i.e., capital) that can be interchanged in some sort of sustainable cost-benefit analysis, the whole question of intergenerational justice is suspect because it assumes a linear sense of time. If time is indeed cyclical, then the future is not merely the sum of today's actions, however benevolent they may be, but ought to be understood in terms of duration and evolution. That is to say, we must consider how current practices are a continuation of what has occurred already, while acknowledging that they will have a ripple effect in ways totally unbeknown to us.

The same is true for the ubiquitous environmental impact assessment that claims to follow a pollutant in a linear manner from its emission and transport to its dispersion and impact (Rogers et al., 2008). Such an interaction is clearly non-linear, however, even if one were able to isolate the fate of a single pollutant. Once it enters an ecosystem, it invariably becomes part of its dynamic composition. It will, moreover, not only have an 'impact' on its receivers, but will also interact with other pollutants in various stages of assimilation, thereby causing manifold effects throughout the entire system. In consequence, the pollutant itself is transformed just as it transforms the system in ways that are extremely difficult to foresee. Economic measures, grounded as they are in modern values and principles, simply cannot deal with such ecological contingencies. In sum, the two worldviews are incompatible, which suggests that it is time to move in a radically different direction. The critical imperfections of adopting a dualistic, human-centered perspective are at the root of our current impasse, for they inhibit the true understanding necessary to address the substantial issues that sustainable development seeks to highlight. The term itself, as well, is now fraught with so many false dichotomies and antithetical assumptions that it too needs to be replaced (cf. McNeill, 2000).

Upon further consideration, sustainable development's most laudable goals concerning equity, integrity, and stability can be said to amount to nothing less than poetic coexistence. The fact that

such a pursuit may *prima facie* appear utopian demonstrates convincingly the degree to which we are under the hegemony of modernist thought. This is precisely the reason it should be adopted as a guiding principle of global interaction. (Global being construed here not as some totalizing abstraction but as a holistic, interconnected matrix of geo-chemical, biological, and cultural systems, the latter nested in the former.) The notion of poetic coexistence takes the emphasis off the competition and divisiveness inherent in the development agenda, for true development is not some haphazard race between unequal participants but is more akin to a dance that strives toward balancing the opposing forces of stability and change. Moreover, its pursuit demands a re-enchantment with the present in order to establish the conditions for future prosperity. Indeed, we must rid ourselves of the desire to control events beyond our ken as the pursuit of sustainability seems to necessitate and instead focus our collective energies on conserving an ecological equilibrium now in a manner that allows its organic unfolding to occur. Poetic coexistence must be at the heart of such a global transformation of consciousness.

What follows is a preliminary sketch as to what that might entail. While both words denote harmony, "poetic" is chosen instead of "peaceful" as the appropriate modifier in this phrase due to the latter's rather moribund connotations. Peace is normally associated with absence, either from conflict (hence, a peace treaty) or from activity as in the refrain "at peace" to describe someone who just died. The very nature of a continually evolving reality where diverse elements must learn to coexist, however, demands more than a passive and placid approach to life. It also requires, in contrast to modernist proclivities, more responsive techniques (i.e., flexibility) as opposed to more powerful tools, and more heightened concentration (i.e., intensity) rather than minimal effort. Thus, the rhythmic intensity at the heart of poetic expression has been selected as the most apt complement for coexistence.

At present, the world is trapped in a cycle where industrial growth is the unchallenged assumption. It can properly be termed a vicious cycle insofar as the financing that is its fuel frequently cannot be secured, the trade that impels it is often unfair and unbalanced, thereby exacerbating inequities and mistrust, the rules and regulations that seek to ameliorate the system's excesses, particularly concerning the environment, are either ignored or subverted, and the policies and programs that intend to offer guidance find consensus lacking or are so riddled with lacunae that they defy implementation.

The industrialization cycle is based on a mechanistic mindset whose ultimate outcome is poverty. Poverty

is viewed as the fundamental impediment to achieving a peaceful and prosperous world in which social, economic, and environmental goals are met (the so-called triple bottom line). In order to lift people out of poverty, financing and investment is necessary to fuel increasing production, which, in turn, necessitates a larger labor pool and expanding market. The exchange of goods and services by growing populations in both developing and developed sectors leads to increasing levels of pollution. It is also implicated in the habitat destruction mostly responsible for species extinction. Legislation and regulations thus become necessary to address emerging environmental issues. A reliance on policies, technology transfers, and management techniques, while hastening environmental decline, fails to address its overall impact, which is to exacerbate scarcity, thereby producing price inflation. Worsening living conditions coupled with lack of access to basic needs and/ or the inability to pay for them is the hallmark of poverty. Hence, the cycle persists.

By contrast, a global cycle whose defining feature and guiding principle is harmonization proceeds from an ecological imperative. Rather than look to financing, education is the immanent force that powers the cycle. It does this by drawing children outward from their egocentric worlds to one in which empathy with others is a prerequisite to embracing an interconnected ethic, which, in turn, is the basis of a perpetually peaceful life or poetic coexistence. Enhancing comfort, as opposed to eradicating poverty, becomes the key component of this cycle. Comfort is defined here as the condition when those necessities that allow for a life with dignity are met. This is comfort in its original sense of to strengthen or enable (from the Latin *confortare*—together strong). If someone is thirsty, hungry, naked, homeless, sick, or ignorant, then it is not possible to live with dignity. The emphasis on necessities (as opposed to needs), moreover, reaffirms a focus on the fundamental links between humans and all other life forms. The degree to which these interactions are predicated on either assumptions of dominance and division or respect and reciprocity ultimately defines who we are as a species.

The harmonization cycle is based on an organic outlook whose ultimate outcome is comfort. Meeting those necessities, such as food, water, and shelter, in a manner respectful of culture, context, and creed, is requisite to reaching a collective comfort zone. Another primary necessity is education whose guiding principles of holism and interdependence inform its core curriculum organized according to life's basic needs. Children learn from the outset values of shared responsibility, care for the community, and the importance of reciprocity. An

education steeped in empathy naturally leads to a life in which coexistence is foregrounded. When all species are flourishing and in dynamic balance, when the integrity of the individual is not viewed separately from the larger ecology, and when peace and nonviolence are both the means and ends to addressing inevitable misunderstandings that occur in a complex and diverse existence, then succession is assured. Earthly evolution, therefore, depends on both diversity and continuity. The comfort in knowing that the past informs the present and that current actions are the foundation of a vital future allows for its continuance.

NOTES

¹Ecology as a Western science is rooted in the early twentieth century work of Charles Elton and Arthur Tansley, who represent its two main branches (Oelschlaeger, 1991). Elton introduced many of the foundational concepts of ecological thinking, such as food chains, energy flows, and trophic levels, within a functional approach to natural phenomena. His holistic, qualitative perspective, however, has never become part of mainstream science. Drawing his theoretical support from Newton and Descartes, it was Tansley's quantitative and mechanistic model that has dominated ecology to this day. Worster (1994) makes a similar distinction between arcadian ecology (the temporal, organismic view) and imperial ecology (the atemporal, reductionistic view). Whereas the latter focuses on the efficient use of resources based on utilitarianism, the former supports a reverence for nature and the biocentric values of deep ecologists (see Sessions, 1993).

² See, for example, Carson (1962) concerning the chemical poisoning of ecosystems occurring as a result of the industrialization of agriculture; Ehrlich (1968) regarding threats to the carrying capacity of the planet by over-population; and Hardin (1968) on the destructive tendencies of allowing individuals the right to pursue their own economic and demographic self-interest.

³ In the end, the entire modern-ecological epistemological divide can be understood by focusing on a single word—value. The modern mind renders it according to monetary or material worth. For economists, value ultimately concerns usefulness. This assumption underlies notions of efficiency, for example, or the manner in which so-called resources are measured. That is, something attains value insofar as it can be exchanged with something else, such as a good or service, which occurs most readily when it is assigned a numerical quantity. By contrast, ecological value is foremost about quality. A healthy ecosystem has value only if the relationships of which it is composed are durable and dynamic. It is not the number of relationships, in other words, but their

very nature that is of value. What is most desirable, then, is the maintenance of these complementary connections, which cannot be reduced to an abstract function, for their ultimate worth is relative to the larger context.

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