

## Reviews/Critiques/Reseñas

### THE ECO PRINCIPLE: ECOLOGY AND ECONOMICS IN SYMBIOSIS

**Author:** Arthur Lyon Dahl

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The aim of this slim but weighty book—which follows in the best traditions of E. F. Schumacher's *Small is Beautiful* and Albert Gore's *Earth in the Balance*—is to propose a paradigm that will stimulate the world's people to seek the institutional approaches necessary for creating an ecologically and socially sustainable new world order. The author—a lifelong Bahá'í and marine biologist—seeks to isolate from twenty-five years of applied experience in ecology and economic development the principles that dynamically lead to unity and harmony in any system, from a coral reef to the macroeconomy. He has the needed experience for the task. Now director of the United Nations Environment Programme and coordinator of the United Nations' System-wide Earthwatch, Dr. Dahl has also been an associate curator of the Smithsonian Institution and an ecological consultant for organizations ranging from remote tribal villages to the South Pacific Commission.

#### Structure and Content of Book

The author divides his book into nine chapters. The first three (“Paradigms in Conflict,” “It Isn't Working,” and “Where Are We Going?”) seem intentionally depressing. They set the stage for the author's new paradigm by showing that the current world order considers ecology and economics to be in conflict; values short-term power and money more than people; tolerates waste and war; and stems neither global exploitation nor rampant unemployment. The author shows that the current Western free-market model is an “economics of the rich” based upon the unwarranted assumption of unlimited material progress. Rather than keeping step with physical science in its return to holism and complexity theory, economics remains fixated upon the mechanistic reductionism of nineteenth-century physics. Even then, such measures as GNP fail to distinguish destruction from creation, pretend that unpaid homemakers and subsistence farmers contribute nothing of value, confuse growth with true development, and remain blind to the possibility of a material and social steady state compatible with the earth's carrying capacity. This is largely because disciplinary overspecialization imprisons economics, ecology, and morals in separate watertight compartments. Because the paradigms are wrong, there is no hope of correcting ecological crises; needless advertising, planned obsolescence, wasteful packaging; violent swings of boom and recession; excessive gigantism; substitution of capital for labor, unemployment, low literacy levels, poverty, starvation; unstable international economic relations, debt cycles that make the

poor countries poorer and the rich richer; the undermining of local cultures by multinationals; terrorism, war, and religious conflict.

In chapters 4 through 6 ("The Theory of Ecos," "Ecos in Nature," and "A More Organic Economics") the author introduces his "eco principle" as an innovative conceptual framework for addressing these problems. He defines an eco as "any natural or man-made functional system with internal integrity and distinct features and behaviour enclosed within clear boundaries" (47). In addition, an eco must have a material resource base, change dynamically over time, be structured around information, and communicate or interact with other ecos through "imports" and "exports" of material and information. This general definition applies equally to an ecosystem, a machine, a town, a nation, the Earth, or the economy. Eco-"logy" then refers to the study of ecos, eco-"nomics" to their management. The most striking point that emerges from this definition is that the true wealth of an eco is information for its organization and integration, the richest source of which is the knowledge and experience of human beings who can build interconnected communities and productive businesses. Instantly, the efficiency of human institutions ceases to be measured by GNP growth but rather by how well information is used to maximize interconnections among people, general participation, and willingness to serve.

To illustrate the universality of these concepts, the author applies them to the microbial, plant, animal, ecosystem, and economic realms. We learn from natural ecos that individual altruism can lead to collective success, that a business is a specialized economic eco like a chloroplast, and that lust for power behaves like a biological cancer. As part of a more "organic" economics, the author skillfully reinterprets economic growth, interest, and markets in biological terms. For example, he portrays markets as predator-prey relations that must be completed by higher level altruism. He boldly extends the concept of "debt" from the merely financial to the human and environmental levels. He deplors, in the eco known as the world economy, the pernicious tendency to restrict flows of information (statistics, genetic breakthroughs, and agricultural technology) for private gain.

Chapter 7 ("Human Capital") enlarges the standard definition of the term to emphasize knowledge, information, people, and cultural and spiritual values. The importance of universal education and consultative participation becomes evident. For example, the author notes that monetary GNP fails to integrate the wealth created in art, music, and legal codes. The result: on the one hand, material GNP may appear low in a country with great cultural and social richness. On the other, a seemingly successful developed country may have ruined its natural resource capital, air quality, as well as human and social harmony.

The last two chapters ("Organic Communities and Institutions" and "Visions of an Eco-Civilization") apply ecos to social evolution. The author argues that societies can be reorganized as a system of "nested" ecos of appropriate scale but that this will require new institutions, a reform of business and civil society,

rationalized international boundaries, and even a world government. Most importantly, people will have to learn to live with impermanence and not to accept bureaucracies as changeless fixtures. The author proposes several transitional steps for replacing the information society of today with a true "knowledge society": education as a necessary condition for moral transformation; voluntary sharing; and policies to value human work equally across countries, to eliminate extremes of wealth, and to permit free movement of humans in parallel with trade liberalization. The author wisely cautions that these measures cannot be put into place simultaneously; timing and sequencing are critical.

### Strengths

This book has five major strengths. First of all, the theory of ecos provides a unifying conceptual framework that integrates environmental, economic, social, and spiritual dimensions; stresses the importance of responsibility in material balances; more accurately portrays the real world as a complex nested structure of interacting, dynamic, and constantly changing systems; and offers an information-as-wealth worldview as a refreshing alternative to current materialism. As such, it provides ideas for a fundamental recasting of our thinking and institutions, whether in the industrialized or the economically less-developed world.

Second, the book is beautifully written, thought-provoking, closely reasoned, and nonhysterical. Its scientific precision is transmitted in a light, accessible style for the general reader. For example, in decrying the urban environment, Dahl simply muses, "If Dante were alive today, he would certainly find new sources of inspiration for *Inferno* in urban air pollution, slums and traffic jams" (39). The book's very succinctness illustrates the principles of modesty and sustainability the author is promoting.

Third, despite (or because of) his lack of formal training in economics, the author has a clear grasp of current economic problems and their practical solutions.

Fourth and perhaps foremost, this book transmits a great number of Bahá'í principles as logical extensions of the theory of ecos. In speaking of the efficiency of ecos, for example, the author manages to mention moderation, respect, and trusteeship of the environment, interdictions on alcohol and tobacco, the need for a universal currency and auxiliary language, the importance of universal education, work as worship combined with a spirit of service to others, and mechanisms for local and global decision-making based on consultation. As to the equity of ecos, we find justice as an organizational principle, elimination of extremes of wealth and poverty, voluntary sharing of wealth, equality of men and women, the privileged place of mothers as first educators, reciprocity, absence of prejudice, unity of religions and other beliefs, the oneness of humankind, free trade, and the absence of all barriers among nations. Meanwhile, eco equilibrium teaches unity in (bio)diversity, unity of God, spiritual solutions to economic problems, and the harmony between

science (ecology, Western thought, etc.) and religion (Eastern thought, spiritual vision of human nature and purpose). Eco evolution clearly demonstrates the bifurcated choice mentioned at the beginning of *The Promise of World Peace*, Progressive Revelation, the life-cycle analogy of human progress in the presence of technical progress, the need for the moral transformation of society, the return to the village granary and other rural institutions, the need for a Bahá'í-like administrative order, and the role of a World Federation. My favorite sentence in the book is a restatement of "the earth is but one country, and mankind its citizens" (Bahá'u'lláh, *Gleanings from the Writings of Bahá'u'lláh* 250): "... this planet is, at its largest scale, a single eco, a global human community . . ." (Dahl, *Eco Principle* 168).

Finally, this book is a persuasive yet neutral teaching tool of spiritualized economics and ecology for both Bahá'í and non-Bahá'í audiences. The Bahá'í Faith and community are mentioned only six times.

### **Weaknesses**

Despite these strengths, the book suffers from two minor weaknesses that could be easily corrected in future editions. First, some examples (that the telegraph was invented in 1844, the University of California's optimal student body is 14,000 students, a business is like a chloroplast) are needlessly repeated at different points in the book. This repetition interrupts the logical flow of the author's arguments.

Second, to be more persuasive to an audience of economists, it would be good if the book mentioned other writings on global economics with which the concept of ecos shares key similarities and differences. Samir Amin's dependency theory, Wallerstein's world systems theory, Kondratieff's forty- to fifty-year economic cycles, Raoul Prebisch's widening terms of trade between North and South, and Marx's explanation for the downfall of the capitalist system are some examples. Similarly, it would be helpful for the author to report, explain, and evaluate alternative measures to GNP, as proposed by Gore and others. Particularly pertinent in this regard is the Bahá'í economist Guiseppe Robiati's concept of minimum entropy per unit of production of social necessities.

### **Recommendation**

This book is written to be accessible to the general reading public, whom it serves to sensitize to some truly revolutionary ideas. I recommend it to all Bahá'ís; to those of any religion seeking a spiritualized conception of ecology and economics; and especially to ecologists and economists, whatever their belief structure, as a paradigm to integrate and enrich both sciences.