

A SURVEY OF ECOLOGICAL ECONOMICS



**EDITED BY RAJARAM KRISHNAN,
JONATHAN M. HARRIS, AND NEVA R. GOODWIN**

**FRONTIER ISSUES IN ECONOMIC THOUGHT
NEVA R. GOODWIN, SERIES EDITOR**

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TO NICHOLAS GEORGESCU-ROEGEN
1906-1994

He showed the way for ecological economics.

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ECONOMICS**

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Series Introduction

Neva R. Goodwin

The Nature and Purpose of this Series

This is the first volume in a series. The purpose of the series is to provide a convenient way for people of various interests and backgrounds to familiarize themselves with intellectual developments in areas in which important, everyday human concerns (about, for example, happiness, justice, or the health of the ecosystem) significantly influence, and are influenced by, economic behavior. The first such area, surveyed in this volume, is Ecological Economics; later volumes will survey such topics as The Consumer Society; Definitions and Assessments of Human Welfare; Sustainable Development; Meaningful Work; and Economic Power.

We have identified these topics as issues on the frontiers of economic thought because they share three characteristics: (1) they are subjects which, we believe, have extremely important implications for the nature and the consequences of human economic behavior; (2) these topics have not been treated as central to the discipline of economics as now defined; and (3) they have a strong intrinsic interest for other areas of intellectual endeavor in addition to economics.

These Frontier areas are also the focus of considerable intellectual liveliness. Many individuals, recognizing the centrality of these issues for the world of the late twentieth century, have been thinking and writing about them. Among these:

- (1) Some are trained economists; of these, some have retained their identity as professionals within this discipline, but many others have found their concern with the "frontier issues" to be incompatible with the systems of rewards and recognition in the field, especially in the United States.
- (2) Some people who think and write about ecological economics, the consumer society, sustainable development, and other frontier issues come to these subjects from other disciplines such as anthropology, sociology, geography, political science, history, and philosophy.
- (3) Other Frontier thinkers are hard to place; they cross the usual lines between "intellectual" and "activist," as well as the disciplinary lines between, for example, economics and philosophy, or sociology or ecol-

number of articles read. Where the reader finds something of special value or pertinence, s/he is likely to want to go to the original to grapple with the details and to get the full context. Someone who is interested in one of the *Frontiers* topics but does not know where to begin can browse through that volume, find the parts of greatest interest, and locate therein the articles that s/he will then search out to read in full.

The primary purpose of each volume in the series will be to provide a good overview of one of the areas we have identified as being on the frontier of the field of economics. As an overview, the intention is to address such questions as: What is included in contemporary understandings of this area of thought? What is the research agenda? Which, to date, are the most important writings in the area?

Regarding the last question, the research team for the *Frontiers* series takes responsibility for determining “importance” on two grounds. One of these is the ultimately subjective decision of which articles will add to the collection valuable ideas that are not readily found—or that are not so well expressed—elsewhere. The same principles are true of the selection of *which* arguments within a given article are to be summarized—and which will be left out. That is to say, particularly in the case of long articles, some parts will only be mentioned, while more attention will be paid to the sections that help to round out the volume’s presentation of the whole Frontier area. Thus, the subjectivity of the judgment used in compiling the volume must again be acknowledged; nothing but individual judgment can be used to determine which are the “critical” ideas. This is noted without apology—indeed, if anything, the reverse; a large part of the value of this project depends upon the fact that critical judgment has been used in selecting and summarizing the articles included herein.

Our second criterion for determining “the most important writings” is somewhat more objective; here “importance” refers to the impact that an article has had upon other thinkers in the area. This is in part inferred by noting which articles are most frequently referenced in the literature. Additionally, near the beginning and the end of the research work for each volume we communicate with a few (perhaps a dozen) outstanding writers and thinkers in the area to request their comments on the project. At the beginning we ask them for bibliographies of works they have found especially useful or illuminating; at the end we request their reaction to our final selection list.

In attempting to provide an overview of each Frontier area, we have found it helpful to break it down into parts. Each part is preceded by an essay that analyses the state of that part of the field—what it has to offer, where it is perceived to be weak, where we feel that additional research is most needed, etc.

The Frontier project aims to hasten the process of sorting out the leading contributors to the new ideas.

The Need for New Approaches to Economic Theory

This section of the Series Introduction will lay out, in more philosophical terms, the reasons why we believe that the areas we have identified as Frontier issues are, themselves, of critical importance at this time; and why we have chosen the method of these volumes for giving wider currency to intellectual developments in these areas.

What matters? That first question of philosophy should also be the first question of economics; for if the study of economics is to be of value to society it must stress the aspects of economic behavior that matter the most.

This series, *Frontier Issues in Economic Thought*, arises out of the conviction that while the focus of economic theory has shifted over time, it has not done so in ways that, as of the 1990s, have brought it abreast of the most important aspects of economic behavior. A number of critical areas which should be at the center of the mainstream of thinking about economics have, instead, been left to the margins. It is arguable that those margins, viewed by the most conservative members of the mainstream as “fringes,” are more properly seen as the “frontiers” of economic thought. They include the topics we have selected for this series: ecological economics; the consumer society; definitions and assessments of human welfare; sustainable development; meaningful work; and economic power.

How—and why—has the content of the field of economics diverged from the subjects that are of prime economic importance in evolving modern societies? A full answer to that question, as well as a defense of the premises on which it rests, would require a much longer exposition than is possible here.¹ In suggesting some of what would be included in a fuller argument, I will start with some perceptions of what economics was about in the eighteenth century.

Adam Smith, for the titles of his two great works—*The Theory of Moral Sentiments* and *An Inquiry into the Nature and Causes of the Wealth of Nations*—chose three of the concepts that were of paramount importance in his time—*morality*, *wealth*, and the *nation*—as an especially appropriate level of analysis for economic thought. In the eventful two centuries since then (with an appreciable part of that eventfulness attributable to Smith’s influence) some priorities have shifted. For example:

- (1) The role of the nation is different, its singular importance challenged by supra- and sub-national allegiances and powers. Some examples

individual economic actors, such as families, firms, and labor unions. There is no developed field of global economics; trade theory, for example, is largely based on standard micro and macro concepts. By now the field of macroeconomics is in considerable disarray, as successive attempts to make tight logical connections between micro and macro have failed. However, economics curricula have not yet been changed to reflect the fact that the old micro-macro division no longer works.

The failure by economists to elevate the concept of *well-being* to an importance equal to that given to *wealth* is related to the loss (from most writing in economics since the time of Alfred Marshall) of an appreciation of the salience of *moral issues* to economic behavior. It may be said that the basis of human morality is human values—our identification of *what matters*. In the mainstream, neoclassical economics paradigm the single value admitted to is efficiency. Efficiency, however, is only a means. When pressed to name the end to which efficiency is a means, neoclassical economists offer the maximization of utility. In practice, most economic writings admit that utility is undefinable (or, at least, unobservable and immeasurable). They therefore use as a proxy goal the maximization of consumption—and thus of production—within feasibility constraints. The growing recognition that the feasibility constraints must include such ecological issues as carrying capacity and sustainability has not succeeded in changing neoclassical economics' orientation to growth in production and consumption. That orientation can only be affected by a much deeper alteration in our appreciation of what constitutes human well-being, with renewed attention to both the individual and the societal goals whose realization promotes well-being.

The Mainstream and the Frontiers

The foregoing description of changes in economics since Adam Smith provides a very cursory look at some of what we believe to be missing from the contemporary mainstream paradigm. Within this synopsis may be seen the germs of the ideas that have been developed into what we are calling Frontier areas.

The definition of "Frontier" areas implies, by contrast, the existence of "core" or "mainstream" areas. Any body of knowledge that has received systematic academic attention develops a mainstream following. A mainstream represents a core of knowledge, theory, methodology, approach, and point of view which is widely accepted. At the same time, it imposes a degree of conformity upon views and methods; indeed, it may so take for granted large parts of its world view (i.e., the bundle composed of knowl-

in finding individual answers to that question is needed more now than in times of less questioning and seeking.

Many thoughtful commentators now perceive a need of great scope; in the end, what is required may be nothing less than one or more whole alternative systems of economic theory. Any alternative that is to be adopted must be able to show that it can, under reasonable goal definitions, rival the achievements of the currently dominant paradigm—achievements which represent the efforts of a vast amount of human talent, operating cumulatively over all of this century. To take on the task of erecting a viable challenge to the existing economic paradigm, each thinker needs as much assistance as possible. Even if, in normal times, few expect to find what virtually every researcher would always like to have—a volume of extracts surveying his/her area of interest—such an aid will be of exceptional significance in this transitional era.

Another justification for this project is the growing number of scholars from all disciplines who believe that the future of the social sciences must include a strong move toward interdisciplinary teamwork. On the one hand, they point out, we encounter ever growing scale and complexity among the human problems that the social sciences are designed (in their applied form, and in the theory formulated to underpin their application) to address. On the other hand, expansion of the knowledge which could conceivably be used in addressing these problems invites ever more minute specialization as the only way for a single individual to be master of all the information in a single (ever more narrowly defined) area. Only by integrating the masters of many specialties into teams, and by developing creative new models for interdisciplinary social science teamwork, can we take advantage of all the information needed to deal with problems of growing complexity.

It is worth exploring whether the *Frontiers* publications may be able to play a useful role in allowing individuals who wish to make connections with disciplines beyond their specialty to take the kind of quick survey that will allow them to decide where and with whom they could most usefully connect. If this project can, indeed, give this kind of assistance, it will also strengthen the argument for working on the technology that might make it possible to continue publications of this sort even in mature fields.

Finally, given that this is a time of exceptional ferment and creativity in the field of economics, there will also be an historical value to the *Frontiers* publications. They have the potential to be viewed, in the future, as critical records of a pivotal moment in the history of economic thought—one of the interdisciplinary periods when traditional disciplinary boundaries are reevaluated and redrawn.

even a long article; for this *Frontiers* volume, at least, we decided not to undertake it.

Finally, while considering what we have left out, we should mention the historical classics in the field—works like Ronald Coase's "The Problem of Social Cost" (1960), Garrett Hardin's "Tragedy of the Commons" (1968), or Allen Kneese's "Analysis of Environmental Pollution" (1971). In deciding not to allocate research time to reading and summarizing the variety of writings that one would have to consider for this category, we were influenced by our awareness of how much movement there has already been in this Frontier area. The works just mentioned were written when ecological economics was not yet thought of; the principal reference point was neo-classical economics, with its emerging subfield of "environmental economics." The latter, as a neoclassical offshoot, essentially applies the tools and approaches of the mainstream paradigm to issues of environmental importance. It does not include any dramatic shift of world view, such as the ecological economics view of the world's economies as being embedded within the earth's ecologies, rather than vice versa—an assumption that radically reverses the neoclassical view of reality. The "classics" cited above made great contributions in establishing the importance of environmental issues. However, they are no longer on the ecological economics frontier of the discipline of economics.

Mention was made earlier of the element of subjectivity involved in selecting and summarizing papers for this work. It is important to add that the determination by the *Frontiers* research team of the most important ideas does not necessarily connote agreement with those ideas. In fact, members of the team have strongly disagreed with some of the papers which are nevertheless represented in the present volume because it was felt that they articulate ideas which are important in the present development of ecological economics.

A related point should be made. Ecological economics, like the other Frontier areas, is rapidly evolving. Among the ideas which we believe to be central to the area now, it is almost certain that some will, over time, lose their salience, while others that do not seem so important now will come to command greater attention. It would be surprising if the team of researchers that has been deeply immersed in this topic for nearly three years did not possess opinions as to which ideas deserve to drop out and which should be given more attention.

We have tried to be moderate in our representation of these opinions, steering a middle course between, on the one hand, a positivist view that there is an objective reality to the existence of the area of study called ecological economics; and, on the other, a relativist recognition that such conceptual categories are created in the minds of people, including ourselves.

concern only to economists. We offer this project to our colleagues, to researchers, activists, and the intellectually curious, with mingled conviction and humility. We hope that we are contributing to movements that will not only change some disciplinary boundaries and broaden the real-world usefulness of economics, but will also assist in the development of more fruitful teamwork and interdisciplinary research. However, whatever intellectual structures, or disciplinary boundaries, emerge from this transitional era, we have to anticipate that a time will come when they, too, will no longer be able to keep step with changing circumstances, and will need to be challenged and changed anew.

Notes

1. See Neva R. Goodwin, *Social Economics: An Alternative Theory, Volume 1: Building Anew on Marshall's Principles* (London: Macmillan, and New York: St. Martin's Press, 1991). See also Neva R. Goodwin, Silvio O. Funtowicz, Jerome R. Ravetz, and Bruce Mazlish, *Intellectual Trends into the Future: Neoclassical Social Science and the Possibility of Social Progress* (in preparation).

2. Another word, favored by many economists, is *utility*. In its most general sense (where it means something like "whatever it is people want"), utility is, if anything, less well defined than well-being. When a more concrete definition is needed, utility is often defined as consumption of goods and services. That definition also has its problems (see below).

3. Given that the absolute size of the human population is now about five times greater than it was when Smith wrote, and that approximately one-fifth of all people now living suffer from severe deprivation of the basic requirements of life, it is evident that the absolute number of people for whom "wealth" is a simple survival issue is larger than it was in the eighteenth century. At the same time, however, far more human beings than at any previous time in history are now enjoying sufficient command over resources that they can consider other goals of wealth than simple survival.

4. See Neva R. Goodwin, "Economic Meanings of Trust and Responsibility," in *As If the Future Mattered: Translating Social and Economic Theory into Human Behavior*, ed. Neva R. Goodwin (Ann Arbor: University of Michigan Press, forthcoming).

5. John Hicks, *Wealth and Welfare: Collected Essays on Economic Theory, Vol. 1* (Cambridge, Massachusetts: Harvard University Press, 1981), 232–33.

Preface

How can we define ecological economics? Is it a sub-field of economics, an interdisciplinary area, or a discipline in its own right? As the field has developed, it has shown aspects of all three categorizations. After exploring the expanding literature of ecological economics, the researchers for this volume have leaned toward the third proposition: a new field of study is being defined which is independent of the standard economic paradigm.

This is an ambitious claim, and the reader will have to make his or her own judgment as to how well it is supported here. After surveying hundreds of books and articles, however, the editors of this volume feel that a strong case exists for the emergence of ecological economics as a new field of research and study. Not that the discipline lacks historical roots—but it is only within the past decade that it has emerged from marginality to play a significant role in shaping serious thought about global economic and environmental issues.

The field of “environmental economics,” as distinct from ecological economics, already exists in mainstream economics. However, that mainstream approach is felt by many theorists and practitioners to be inadequate to deal with the contemporary crises of environment/human interactions. The “environmental” area within the existing discipline of economics is too constrained by its requirement of market valuation to respond adequately to the complexities of issues such as global warming, species loss, ecosystem degradation, intergenerational equity, and non-human values. Ecological economics, by contrast, starts from a recognition of the biophysical realities underlying the operations of the economic system. Economic issues are then viewed in this context, rather than attempting a monetary price valuation of all aspects of the environment.

The issues which ecological economics brings to the fore are especially important in a long-term perspective and on a planetary scale. Much of human economic activity has been directed toward stretching ecological limits, notably through high-input agriculture and the use of fossil fuels. In some senses, this enterprise has been phenomenally successful, but over the long term and in a broader perspective we find that natural systems react adversely to the ever-increasing pressure to produce for human use. Effects which are subtle at first gradually become overwhelming. In agriculture, such effects include cumulative soil erosion and nutrient loss, water over-draft and pollution, and the emergence of resistant pest species. The inexorable buildup of carbon dioxide in the atmosphere has no immediate

duced. In every case, the authors have reviewed the summaries to check that their work is adequately and clearly presented. These summaries, however, are in no way meant to substitute for the original articles. We strongly recommend that readers seek out the full texts in their areas of interest.

The overview essays at the head of each part attempt to synthesize the diverse selections to give a sense of the nature of the field. Despite the varied views and theoretical perspectives represented, we feel that a certain *Gestalt* emerges, a sense of a viable field of analysis with its own parameters and techniques. There is certainly some overlap with standard economics as well as with ecological, political, historical, and ethical analysis. But we feel, and have some confidence that the reader will also feel, this emergence of a new and essential discipline.

Such a far-reaching enterprise has necessarily involved the contributions of many people. Rajaram Krishnan, an economist specializing in agricultural and labor issues in development, has coordinated the selection and preparation of summaries, as well as providing a summary essay for Part VI. Jonathan Harris, who has published work on the economics of agriculture, trade, and global institutions, has written most of the overview essays that introduce the parts of the book. Neva R. Goodwin, the originator of the project and author of *Social Economics: An Alternative Theory*, has contributed the Part VII overview. The research team for this volume included Andrew Morrison, Daniel Von Moltke, Daniele Guidi, and Kevin Gallagher. For tireless editing work we are indebted to Carolyn Logan. Associates of the Global Development and Environment Institute including Jeffrey Zabel and Elliott Morss contributed to the shaping of this volume in its early stages. The final responsibility for the selection and content rests with the three editors. We hope that we have done justice to the field of ecological economics, and perhaps helped to define this emerging discipline.

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Note

1. World Bank, *1992 World Development Report: Development and the Environment* (Oxford University Press, 1992), 9.

Note to the Reader

In general, the summaries presented here do not repeat material from the original articles verbatim. In a few instances it has seemed appropriate to include in the summaries direct quotations from the original text ranging from a phrase to a few sentences. Where this has been done, the page reference to the original article is given in square brackets. The complete citation for the article always appears at the beginning of the summary. References to other books or articles appear in endnotes following each summary.

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