Introduction

This book is a collection of articles, speeches, testimonies, and reviews written over the past decade on themes related to ecological economics and sustainable development. The 25 articles have been grouped into seven categories, each with its own short introduction. First is an overall presentation setting forth a basic vision and a few big ideas—limits, throughput, entropy, steady state, recent history of economic thought and the place of ecological economics in it, and so on. Second are some lectures to the World Bank. Third are articles and speeches (lectures) on conceptual issues of sustainability and ecological economics proper, and its relation to neoclassical economics. Fourth are congressional testimonies on related policy issues, and short opinion pieces. Fifth are a few book reviews and critiques of specific economic arguments that have played important roles in policy debate. Sixth are discussions of globalization and its nullifying effect on the ecological economic policies of nations. Seventh are essays on the philosophical presuppositions of policy—including of course the policies recommended in earlier sections of this book—and how those presuppositions are being undermined by what Alfred North Whitehead called “the lurking inconsistency.” Finally there is a brief summary of main conclusions regarding the shortcomings of standard economics and improvements suggested by ecological economics.

Articles written by one person, even if over a period of time and for different occasions, usually have a certain underlying unity imposed by their origin in a single mind. Indeed, the unity may reach the unfortunate extreme of mere repetition! In putting together a collection of articles the author-editor’s problem is to highlight the underlying unity and suppress the excessive repetition. At the same time one must not force spurious unity on to real diversity, nor eliminate repetition of basic ideas when it helps to relate different issues into a unified context. Furthermore, if I found it necessary to repeat an idea or argument in various contexts, that just might be a reflection of the objective importance of that idea, and suppression of repetition would obscure that fact. Also, the din over which one has to shout to be heard in today’s public forum requires saying things more than once. I have tried to balance these considerations. Those diligent readers who read straight through from cover to cover will find more repetition than they need; in compensation, those who skip around will benefit from
the extra context provided by some of the repetitions. My apologies to the
diligent. May virtue be its own reward.

Anyone who has been writing on controversial issues of economics and
ecology for nearly 40 years will have collected a number of critics. While an
Introduction is not the place to offer detailed replies to one’s critics, it would
not be amiss to acknowledge them with some appreciative reflections.

Critics are of two kinds, supportive and dismissive. Supportive critics
accept one’s basic position, but suggest clarifications, better arguments or
the pruning of weak arguments, and the elimination of irrelevancies.
Supportive critics are good friends. God bless them! Dismissive critics want
to disprove or discredit one’s position. Of course if they are right they
provide a valuable service to the world, even if they are harder for an author
to love than the supportive critic.

My dismissive critics seem, in turn, also to fall into two categories. First
are those who say that I am simply wrong, should totally recant, and hence-
forth shut up (these are often my fellow economists). Second are those who
assert that what I say is absolutely true, but also absolutely trivial, because
no sane person ever claimed otherwise (these critics are frequently scien-
tists). I take some solace in the fact that both sets of critics cannot be right.
I would like to just cancel them out and go on my way, but I cannot because
even though it is impossible for both to be right, the possibility remains that
one of them is right. So both have to be considered.

Let us consider the second critic first, since I think that form of criticism
is more just. I have been asserting that continued growth of the economy in
its physical dimensions is limited by the fact that the economy is a subsys-
tem of the ecosystem, and the containing ecosystem is finite, non-growing,
and materially closed. Although open to a flow of solar energy, that flow is
itself finite and non-growing, and its collection requires space and materi-
als, which are scarce. Furthermore, both materials and energy used by the
economy are entropically degraded by that use. Low-entropy resources are
extracted from the containing ecosystem, degraded in the economic sub-
system by transformations that we misleadingly call “production” and
“consumption,” and then the degraded matter-energy is returned to the
ecosystem as waste, some of which is reconstituted by slow biogeochemi-
cal processes as new resources, and some of which accumulates as perma-
nent waste. The economy lives off the environment in the same way that an
animal does—by ingesting low entropy and expelling high entropy—by
depletion and pollution. Clearly there are physical limits to growth of the
economic subsystem. Perhaps welfare and happiness, which are experiences
not things, can increase forever if based on qualitative improvements
(development) rather than quantitative increase (growth) in the throughput
of matter-energy. The problem is growth, not development.
Now my scientific critic tells me that all this is trivially true—a simple restatement of the first and second laws of thermodynamics. Yes, but the important thing is that it really is true. If it is obviously and trivially true, as I agree that it is, then so much the better, because this is not an originality contest. What is not trivial are the economic and political implications of these well-known scientific laws and facts about the world. Has my scientific critic ever noticed that all nations are hell-bent to foster the growth of their economies, and that growth is the sumnum bonum of economists and politicians? Bringing the laws of economics into conformity with biophysical laws, no matter how trivially true the latter, is no trivial task! Perhaps the scientist has a trivially simple policy solution for ensuring this consistency. If so, let him offer it.

My first type of critic says that I am simply wrong. Perhaps so. There are two ways in which an argument can be wrong: in its premises, or in the logic of its reasoning from those premises. In which way does my argument fail? Which of the premises (taken as trivially true by the scientists!) are wrong? Or where is the logical false step in reasoning? Is it logically false that the growth of a subsystem is constrained by the non-growth and finitude of the total system of which it is a part? Or is future growth, unlike past growth, assumed to be purely qualitative improvement with no quantitative increase of matter-energy throughput? As mentioned before, everyone accepts qualitative improvement. Certainly I do, and this appeal by my critic would provide no basis for refuting me. If this were my critic’s objection, then we could easily reach policy consensus by agreeing to institute limits to growth of throughput, thereby forcing progress on to the path of development. This would force technology to evolve in the direction of more efficient digestion of the throughput rather than in the direction of an ever-bigger digestive tract through which to run more matter-energy.

As my persistence in publishing this collection indicates, I have so far not been convinced by either type of dismissive critic. Yet I confess that I, and ecological economists in general, have not made much of an impression on them either. I am not sure why this is the case, but I am reminded of the early American economist Daniel Raymond who in his 1820 treatise, *Thoughts on Political Economy*, explained to his readers why he had omitted any consideration of the then current ideas of Thomas Robert Malthus:

> Although his [Malthus's] theory is founded upon the principles of nature, and although it is impossible to discover any flaws in his reasoning, yet the mind instinctively revolts at the conclusions to which he conducts it, and we are disposed to reject the theory, even though we could give no good reason.
The disposition of the economist’s mind to instinctively revolt at any remotely “Malthusian” proposition, without needing to give good reason, has not changed since 1820. Mr. Raymond’s basic approach remains very much in vogue—only his disarming honesty has fallen out of fashion.