

Annotated Bibliography

The following books have had the greatest influence on my thinking with respect to economics and the environment. The standard bibliography is listed first, followed by quotes and annotations.

In the quotes, I have left terms like "man" and "mankind" as they are. Although this language is insensitive today, it was standard practice until the recent past, even for female authors. As well, I have not modified the spelling in the quotes. Thus, "labor" may be spelled "labour" inside a quote.

1. Bibliography

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2. Quotes and Comments

My general comments appear directly beneath each book listed. Quotations from the book follow, in italics. Comments that are interspersed with the quotations are in square brackets.

Alchian, Armen A. and William R. Allen: Exchange & Production

Michael Bowe, one of my microeconomics professors at Simon Fraser University in Canada, used this book as a text. He told me that Alchian hates government, but that the economics in this book is excellent. I agree on both counts. Alchian and Allen offer clear, honest descriptions of markets, cost, prices, etc. from the standard perspective. They vigorously defend the logic of capitalism, which is immensely useful for anyone who has doubts about this logic.

"We caution that 'labor, toil, trouble, and pain' are not what is meant by costs. 'Bads' associated with an action are not its costs; they are part of the act." (p. 5)

"... no good has an intrinsic, or built-in value. All values are RELATIVE." (p. 14)

"... there is no particular amount of a good that anyone MUST have. Always, more is better and less is worse." (p. 20)

"... economic analysis neither condemns nor commends. It only shows how the market system operates ..." (p. 62)

"Some people complain that such a tax ... for discharging [polluted] water gives the steel mills a license to pollute. That is correct, and is exactly the same as your getting a 'license' to eat meat when you buy meat." (p. 95)

"People with private-property rights who seek profits in an open-market system will maximize the social [gain] in many situations." (p. 167)

[The situations where this is true is an empirical issue, and can only be determined through a method of analysis that is independent from standard economics. This is a key intended function of ENL.]

Bacon, Francis: The Great Instauration

"Instauration" is a rarely-used word meaning "renewal, restoration, or innovation." This book is Bacon's plan for a revolt against scholasticism - the barren theological and philosophical dogmas that dominated the Middle Ages. It paved the way for the scientific revolution to follow. I found Bacon's guidelines useful in escaping from the conventional thought patterns of standard economics. (Page numbers refer to Burt's The English Philosophers from Bacon to Mill.)

"For better it is to make a beginning of that which may lead to something, than to engage in a perpetual struggle and pursuit in courses which have no exit." (p. 6)

"[Existing knowledge] can talk, but it cannot generate; for it is fruitful of controversies but barren of works." (p. 7)

"Philosophy and the intellectual sciences ... stand like statues, worshipped and celebrated, but not moved or advanced. Nay, they sometimes flourish most in the hands of the first author, and afterwards degenerate." (p. 8)

[This has certainly been true of Marx, and is happening today to ecological economist Herman Daly. In the attributed words of Alfred North Whitehead, "A science which hesitates to forget its founders is lost."]

"Lastly, I would address one general admonition to all: that they consider what are the true ends of knowledge, and that they seek it not either for pleasure of the mind, or for contention, or for superiority to others, or for profit, or fame, or power, or any of these inferior things; but for the benefit and use of life; and that they perfect and govern it in charity." (p. 13)

"... axioms once rightly discovered will carry whole troops of works along with them; and produce them, not here and there one, but in clusters." (p. 19)

"God forbid that we should give out a dream of our own imagination for a pattern of the world ..." (p. 23)

Bacon, Francis: Novum Organum

Novum Organum (roughly: New Principles) is Bacon's masterpiece. The following quotes are from the section, "Aphorisms concerning the Interpretation of Nature and the Kingdom of Man." (Page numbers refer to Burt's The English Philosophers from Bacon to Mill.)

"The discoveries which have hitherto been made in the sciences are such as lie close to vulgar notions, scarcely beneath the surface." (p. 30)

"... the understanding, unless directed and assisted, is a thing ... quite unfit to contend with the obscurity of things." (p. 31)

[Hence the need for a theoretical framework such as ENL to guide progressive work in economics.]

"... radical errors in the first concoction of the mind are not to be cured by the excellence of functions and remedies subsequent." (p. 33)

"Even to deliver and explain what I bring forward is no easy matter; for things in themselves new will yet be apprehended with reference to what is old." (p. 33)

[Cf. Keynes: "the old [ideas] ... ramify ... into every corner of our minds." - General Theory, Preface]

"The human understanding when it has once adopted an opinion ... draws all things else to support and agree with it." (p. 36)

[Cf. Michael Shermer, publisher of Skeptic magazine: "Smart people believe weird things because they are skilled at defending beliefs they arrived at for nonsmart reasons." - Scientific American, September, 2002]

"And let every student of nature take this as a rule - that whatever his mind seizes and dwells upon with peculiar satisfaction is to be held in suspicion." (p. 40)

[Cf. Samuel Johnson: " Read over your compositions, and wherever you meet with a passage which you think is particularly fine, strike it out."]

"If then the end of the sciences has not yet been well placed, it is not strange that men have erred as to the means." (p. 56)

"... truth will sooner come out from error than from confusion..." (p. 113)

Bastiat, Frederic: Economic Harmonies

Bastiat was a French economist and politician, referred to by Marx as "...the most superficial and therefore the most adequate representative of ... the apologetic of vulgar economy..." (Capital, V.1, p. 25) The reason for this brutal characterization was Bastiat's denial of capitalist class conflicts, as indicated by the book's title.

What I find useful in Bastiat is his insistence that exchange value is a BAD thing from the social perspective - a measure of what is not supplied freely by nature and what has not yet been made easily accessible through social and technical progress. Because standard economists identify so strongly with business, they often interpret exchange value to be a GOOD thing from the social perspective, which Bastiat correctly derided as a ludicrous inversion. (The classical economist James Maitland - often referred to as the Earl of Lauderdale - also pointed this out forcefully in distinguishing between public wealth and private riches.)

"Man strives ceaselessly ... to obtain, with the help of natural and gratuitous utilities, the same results with less effort. He makes wind, gravity, heat, gas do for him what originally he accomplished only by the strength of his own muscles. Now, what happens? Although the result is the same, the effort is less. Less effort implies less service, and less service implies less value. All progress, therefore, destroys some degree of value ..." (p. 32)

"From the viewpoint of political economy, society is exchange. The primary element of exchange is the notion of value, and consequently the connotations that we give to this word, whether true or erroneous, lead us to truth or error in all our social thinking." (p. 100)

[The term "value" has almost disappeared from contemporary economic discourse, except in trivialized forms. Most university economics texts do not include the term in their glossaries at all (skipping right to "value added," thus adding something that has not been defined). In other cases, value is simplistically equated to market price or willingness to pay. Although Bastiat is a hero to some on the right for his repudiation of class conflict, he would be astonished at the shallowness of standard economics were he alive today.]

Commoner, Barry: Making Peace with the Planet

Commoner is an insightful academic environmentalist. His main focus is the conflict between the cyclical operation of the ecosphere (the natural world) and the linear operation of the technosphere (the human-made world). He holds a pro-growth position, which is unusual for an environmental thinker. Commoner has great faith in the improvement of production technologies, and in the decline of birth rates in the developing nations through the reduction of poverty and the resulting demographic transition.

"In the technosphere, the end of the line is always waste, an assault on the cyclical processes that sustain the ecosphere." (p. 11)

"'Nature knows best' is shorthand for the view that during the several billion years in which they have evolved, living things have created a limited but self-consistent array of substances and reactions that are essential to life." (p. 13)

"... a profound, unavoidable moral question: Is the ecosphere to be protected from destruction for its own sake, or to enhance the welfare of human beings who depend on it?" (p. 16)

"The view that people are to be regarded SOLELY as components of the ecosystem can lead to extreme and often inhumane proposals." (p. 17)

"The chemical industry, its emissions of toxic substances largely unrestrained, has become the major threat to environmental quality." (p. 32)

"The few real improvements have been achieved not by adding controls or concealing pollutants but by simply eliminating them." (p. 42)

"If pollution is prevented, environmental quality is compatible with increased economic activity; if pollution is controlled, they clash. In the task of restoring environmental quality, prevention works; control does not." (p. 44)

"In every case ... the change in production technology ... is initiated by the producer and is governed by the producer's interests." (p. 80)

"... petrochemicals are typically more profitable than the products they replace ..." (p. 81)

"Ecologically minded economists insist, out of respect for the inherent limits of the ecosystem, that we must give up economic growth - a conclusion with terrible consequences for developing countries." (p. 82)

"... hitherto wholly private decisions that determine production technology must become subject to social governance." (p. 102)

"The issue we face ... is not how to facilitate environmental quality by limiting economic development and population growth, but how to create a system of production that can grow and develop in harmony with the environment." (p. 148)

"... many environmental organizations have been drawn toward explanations of the environmental crisis that avoid its origin in so controversial an arena as economics and that appeal instead to the less contentious principles of ecology. Despite evidence that the environmental crisis originates in the technosphere, they seek its solution in the ecosphere." (p. 170)

"... the market is a useful means of facilitating the flow of goods from producer to consumer; but it becomes a social evil when it is allowed to govern the technology of production." (p. 223)

Daly, Herman E. and John B. Cobb, Jr.: For the Common Good

When this award-winning book was published in 1989, I adopted it as my "bible". I now consider it a significant step backward for Herman Daly, compared to his earlier Steady-State Economics (see below). In the latter, Daly offered the outline of a new economic method based on the concepts of stock, service, and throughput. The method had numerous holes in it (as ENL undoubtedly does), but it was a promising beginning. For the Common Good abandons this foundation and instead offers a raft of prescriptions for social change based on the authors' personal views.

"[Standard economics] need not 'junk' its axioms. Many of them can continue to function, only with more recognition of their limits. The change will involve correction and expansion, a more empirical and historical attitude, less pretense to be a 'science,' and the willingness to subordinate the market to purposes that it is not geared to determine." (p. 8)

[This is a shocking capitulation to standard principles, leaving humankind largely outside the sphere of economic thought.]

"Our position is that centralized economic planning is inefficient, that allocations are better effected in the market than by bureaucratic planning. The role of government is to set fair conditions within which the market can operate. It is also responsible for setting the overall size (scale) of the market. The market is not the end of society and is not the right instrument through which the ends of society should be set. We favor private ownership of the means of production. We favor the widest possible participation in that ownership, including worker ownership of factories, against its concentration in a few hands." (p. 14)

[The reference to scale points to a central problem in Daly's thought, and in ecological economics generally. Daly has no economic criterion for human well-being (independent of the market), and thus cannot determine when the scale of an economy is optimal in the human sense. This fundamental shortcoming is generally skirted by referring to an economy's maximum throughput of renewable resources and waste expulsion. Both of these have a sound ecological basis, which means the human element can be ignored. However, they establish only an upper limit, not the right quantity, and they necessarily avoid nonrenewables, which lack a similar ecological basis.]

"We suggest a functional definition of capital as a stock that yields a flow of goods or services. There are then two categories of capital, natural and humanly created." (p. 72)

[One does not have to be a Marxian economist to understand that "capital" is a purely human creation, and that it refers to a specific economic system - capitalism. Ecological economists use the term as Daly and Cobb do, thereby conflating the human and natural realms, and forsaking any possibility of understanding the systemic aspects of capitalist economies. The term "natural capital" (and social capital, geological capital, etc.) should be barred from serious economic discussion.]

"All of microeconomics is nothing other than defining the optimal scale of some activity, be it production of shoes, consumption of ice cream, hours worked per week, and so forth. ... But, surprisingly, when economists switch from micro- to macroeconomics we hear no more about optimal scale." (p. 145)

[Excellent point.]

Daly, Herman E.: Steady-State Economics

"The vision of the economy from which the steady-state concept arises is that of two physical populations - people and artifacts - existing as elements of a larger natural system." (p. 15)

"In sum, the vision is that of a physical open system, a fund of service-yielding assets maintained by a throughput that begins with depletion of nature's sources of useful low entropy and ends with the pollution of nature's sinks with high-entropy waste. There are two physical magnitudes, a stock of capital (people and artifacts) and a flow of throughput. There is one psychic magnitude of service or want satisfaction that is rendered by the stocks and is, of course, their reason to be. Whatever value we attribute to the satisfaction of our wants and needs is imputed to the stocks that satisfy those needs, and, in turn, is imputed to the throughput that maintains those stocks." (p. 16)

[Daly develops these ideas in the book, and in doing so essentially establishes the field of ecological economics. The reliance on Georgescu-Roegen (see below) is excessive, and the "capital" error already appears, but this is a reasonable start. Unfortunately, as with Marx, the master's mistakes have not been corrected, and the original ideas have not been rigorously developed. As a result, ecological economics today is a mish-mash of useful methods, half-baked notions, and outrageous errors.]

Eaton, Curtis B. and Diane F. Eaton: Microeconomics

This was the text chosen by professor Steve Globerman for another microeconomics course at Simon Fraser University. It is an excellent, and somewhat more liberal, companion to Alchian and Allen's very conservative Exchange & Production (see above).

"The assumption of self-interested behavior is universal in economics. Indeed ... self-interest is the driving force of economic analysis." (p. 7)

"A particular economic model is evaluated by confronting its predictions with evidence from the real world. How accurately a model forecasts economic events, therefore, is a measure of its value." (p. 14)

"The only relevant information is data about the well-being of individuals. ... what counts is the welfare of individuals." (p. 16)

"... one social state is better than another if everyone is as well off, and at least one person is better off ..." (p. 16) [The "preferred" social state by this criterion is called Pareto-optimal.]

"Pareto optimality plays so important a role in economics that it is synonymous with economic efficiency." (p. 17)

[However, the authors admit that it is virtually useless as a policy instrument, and therefore prefer cost-benefit analysis.]

"The cost-benefit criterion is clearly more powerful because it provides more answers than does the Pareto criterion. Why? Because the cost-benefit criterion is blind to the distribution of costs and benefits over individuals, whereas the Pareto criterion is not." (p. 18)

[Cost-benefit analysis aggregates over individuals, irrespective of distribution. The Pareto criterion allows the rich (for example) to veto changes desired by the poor.]

"In doing microeconomic theory, it is important to distinguish between positive economic analysis (supported or refuted by objective fact) and normative economic analysis (supported or refuted by reference to ethical judgments outside the scope of economics per se)." (p. 20)

"... the unfettered pursuit of self-interest does not produce socially desirable results. Sensibly designed institutions do not simply allow individuals to pursue their private objectives free of restraints of any kind. Instead, they acknowledge the power of self-interest as a motivator of economic behavior and then seek to harness and direct private self-interest toward socially useful ends." (p. 31)

[Very enlightened, but if "socially useful ends" are so important, why not embrace normative thought in the same way that positive thought has been embraced by standard economists? It appears to me that the authors are offering a sop. The implicit ends of a capitalist economy are those of its dominant class - capitalists. Serious consideration of these ends through a normative framework would raise troubling questions. Better to leave this to unorganized thought and to easily countered emotions and intuitions.]

"... the basic stuff of consumer theory is not utility, but individual preferences." (p. 46)

"... economists take statements of preferences as primitives ... requiring no explanation." (p. 47)

"... a competitive equilibrium is incapable of redressing initial inequalities. It merely provides a means for realizing the full potential of gains from trade, given the initial allocation." (p. 254)

"To an economist, the overriding purpose of the economic system is to transform the scarce resources held by individuals into consumption goods that benefit those same individuals." (p. 412)

"... to achieve equity, redistribute the ownership of inputs; to achieve efficiency, use competitive markets" (p. 429)

"... redistribution almost inevitably involves a serious conflict between equity and efficiency." (p. 430)

[The last two quotes summarize an amazing shell game played by standard economics. It goes like this: We should leave markets alone for the sake of efficiency - that is, we should not redistribute market outcomes through progressive income taxes and the like. If we want to achieve equity, we should

instead redistribute inputs, which actually refers to the imposition of lump-sum taxes on individuals. The authors describe a lump-sum tax as "a fixed tax liability ... a government simply demands that an individual remit a certain sum." (p. 101f) Such taxes, however, are ferociously resisted by the rich and are thus rarely levied. So the efficiency part happens, but the equity part does not. The practical results are unfettered markets, low taxes, and minimal redistribution. (The rich didn't get that way by writing checks - they hired economists to tell us stories instead.)]

Ewald, Paul W.: Plague Time

Ewald claims that many chronic diseases such as cancer and heart disease are primarily caused not by genes, the environment, or vague "risk factors," but by specific pathogens (viruses, bacteria, protozoa) that invade the body by infection. I include this book because it provides numerous examples of how shallow, biased, and erroneous thought persisted among medical professionals for decades or centuries. It also cites extraordinarily petty and vindictive behavior within this group. If this is true for the altruistic, non-ideological field of medicine, consider how prevalent it must be in economics, a sphere riddled with vested interests and ideological commitments. [NOTE: In 2011 I read Peter Duesberg's *Inventing the AIDS Virus* and concluded that Ewald's approach is substantially incorrect.]

"[Ignaz Semmelweis] concluded, decades before Pasteur and Koch established the germ theory of disease, that the doctors and medical students were inadvertently killing the mothers-to-be by transmitting some invisible agent of disease during the prenatal exams. ... He was rewarded in 1854 with the termination of his position." (p. 17)

[A similar story is told on p. 239 about Edward Jenner and his smallpox vaccine.]

"... when it comes to chronic diseases that do not have a distinct acute phase, infectious causation is often either dismissed or not even considered." (p. 43)

"A combination of developments in science and medicine were misinterpreted and misapplied as leaders failed to guard against the biases of human thought." (p. 50)

"This success [in applying Koch's postulates to identifying infectious causation] then led many experts to insist that infectious causation be accepted only when these guidelines had been met - and that is where the logical error crept in." (p. 51)

[Before I read this book I had assumed that logical errors could not persist for long among serious thinkers - some bright light would soon correct any blunders. Ewald has convinced me that I was wrong. Even the most brilliant thinkers tend to be followers, and followers perpetuate errors.]

"Like many great ideas in biology, the idea implicating infectious causation in chronic diseases, though simple, has far-reaching implications. It is so simple and so significant that one would think it would have been recognized by many and would be the starting point for any discussion of the causes of disease. Not yet." (p. 56)

"The purpose of this brief excursion into the evolution of human behavior is to suggest that we must be on guard to recognize the errors into which the human mind might easily slip." (p. 82)

"But ridicule from experts is not necessarily a good reason for rejecting an idea. To move toward the truth, we need to assess the evidence." (p. 128)

"Why did people accept stress or stomach acidity as a cause of peptic ulcers? There was no hard evidence demonstrating a causal link. Experts made an appealing argument and other experts accepted it, and then the argument metamorphosed into the established 'truth' as it was handed down from one expert to another." (p. 159)

"Besides recognizing the significance of individual observations, however, prepared minds must have a conceptual breadth that extends beyond the prevailing dogma." (p. 231)

[In my experience at university and in the computer field, conceptual breadth is rare, as are intellectual self-criticism, creativity, and courage.]

"Marshall and his colleagues published the first part of their seminal work [on the infectious causation of ulcers] in 1983, and almost nobody paid attention. ... The story was published in the National Enquirer." (p. 232f)

[This is my favorite story of how difficult it can be for even respected researchers to disseminate results or ideas that are contrary to prevailing dogma.]

"A few prepared minds were not enough. A critical mass of prepared minds was necessary to guide medicine to treat seriously the germ theory of disease, in spite of the logical consistency of the evidence." (p. 234)

"The pioneering work of Andreas Vesalius [in anatomy] demonstrated that the Galenic dogma of the sixteenth century did not fit the facts. He wrote of his expectation that 'old men filled with envy' would try to discredit his work. Vesalius knew what he was talking about." (p. 240)

Fisher, Irving: The Nature of Capital and Income

Fisher was a very unusual thinker: he accepted the business perspective, but his original mind took him well beyond it. I respect his insistence on clear and explicit definitions, something standard economics has long ignored.

"Since wealth and property are each the opposite aspect of the other, economics might be described as the 'science of property' quite as truly as the 'science of wealth.' If we are studying the economic condition of the whole country, we prefer to fix our attention upon wealth, caring less about how its ownership is divided. ... On the other hand, if we are studying the 'distribution of wealth' - the condition of individuals or of classes - it is property on which we need to fix attention." (p. 38)

"The proper method of avoiding large errors in any science is to avoid small ones at the outset. This can be accomplished only by scrupulous attention to elementary distinctions." (p. 40)

"Services and satisfactions [utility], unlike wealth and property, can exist only as flows; a fund of either is impossible. A fund is fully specified by one magnitude only; a flow requires two - the amount of flow and the duration of flow." (p. 52)

"But in science, logical distinctions are inexorable, and their violation always brings retribution." (p. 107)

"When a wrong road is once taken, it almost inevitably happens that it leads those who follow it further and further astray." (p. 115)

[Fisher next explains how most "credits" in an economic system are matched by corresponding "debits" elsewhere, and vice versa. The only net income from the social perspective is the "psychic income" at the "uncancelled fringe" of consumption.]

"To obtain one's net income we must subtract from the subjective satisfactions the subjective efforts of attainment." (p. 171)

[This is analogous to ENL's "economic well-being".]

"... most of what is called 'cost of production' is ... not cost at all. We have found ... that every objective item of cost is also an item of income, and that in the final total, no objective items of outgo survive cancellation." (p. 173)

[This is why ENL's concept of "input cost" focuses on the real effects of production on human beings - effects which are not subject to cancellation.]

"In a sense, therefore, the socialists are quite right when they say that labor is the only true cost of production ...". (p. 175)

[This is a misinterpretation of the labor theory of value. Fisher shares with 99% of standard economists a thorough misunderstanding of Marx.]

"Economists, by fixing attention exclusively on physical phenomena, leave out of account the most essential element of all, the vigor of human life. The true 'wealth of nations' is the health of its individuals. ... Hence it is that the devices of modern hygiene, sanitation, and preventive medicine ... are of greater economic import than many of the luxurious and enervating devices commonly connoted by 'wealth'." (p. 176)

[Precisely! Hence ENL's focus on intrinsic value and effectual value.]

Georgescu-Roegen, Nicholas: The Entropy Law and the Economic Process

This book is significant for its assertion that economics deals with the real world of resources and wastes, not with the mythical world of perpetually circulating value. In G-R's words, the economic process is entropic and linear, not mechanical and circular.

"... the economic struggle is only about low entropy and ... the nature of the economic process viewed as a whole is purely entropic." (p. 11)

[This overstates the case, which has led some adherents into ecological reductionism. On p. 281 G-R modifies this by stating, "... from the purely physical viewpoint, the economic process is entropic." This is much better, but the qualification is frequently forgotten.]

"Since the economic process materially consists of a transformation of low entropy into high entropy, i.e., into waste, and since this transformation is irrevocable, natural resources must necessarily represent one part of the notion of economic value." (p. 18)

[Broadly speaking, this is true - natural resources must, in some sense, be valued. However, the term "economic value" has no meaning. Value in economics is always value in use or value in exchange. "Economic value" avoids this fundamental distinction, a problem that profoundly mars G-R's analysis throughout the book.]

"Man's natural dowry ... consists of two essentially distinct elements: (1) the stock of low entropy on or within the globe, and (2) the flow of solar energy..." (p. 20)

[This is obviously correct, and ecological economists are right to insist that it should be one of the starting points of economic thought.]

"... probability was introduced into thermodynamics precisely for saving the mechanistic representation of nature." (p. 148)

[This has little to do with economics, but it is a gorgeous insight - perhaps the most penetrating comment in the book.]

"The Entropy Law, I contend, is the simplest form by which the existence of true happening in nature is recognized." (p. 169)

[Right - economics is in the realm of "true happening" - the dialectical unfolding of nature.]

[On p. 217 (note) G-R begins an ambiguous relationship with Marx. Here he has high praise for Marx's analysis of the worker's participation in the productive process (Capital V.1). Later, however, he completely butchers the labor theory of value.]

"A machine is a material stock, to be sure, but not in the sense the word has in 'a stock of coal.' If we insist on retaining the word, we may say that a machine is a stock of services (uses). But a more discriminating (and hence safer) way of describing a machine is to say that it is a fund of services. The difference between the concept of stock and that of fund should be carefully marked, lest the hard facts of economic life be distorted at everyone's expense." (p. 226)

"... the current practice of putting all households in the same analytical bag is a regrettable regress from Marx's analysis which, by separating the households of the capitalists from those of the workers, kept the social dimension in the center of economic analysis. Economics has indeed drifted away from political economy to become almost entirely a science of management." (p. 262, note)

"The mechanistic epistemology, to which analytical economics has clung ever since its birth, is solely responsible for the conception of the economic process as a closed system or circular flow. As I hope to have shown by the argument developed in this essay, no other conception could be further from a correct interpretation of the facts. Even if only the physical fact of the economic process is taken into consideration, this process is not circular, but unidirectional. As far as this facet alone is concerned, the economic process consists of a continuous transformation of low entropy into high entropy, that is, into irrevocable waste, or with a topical term, into pollution." (p. 281)

"... the true 'output' of the economic process is not a physical outflow of waste, but the enjoyment of life." (p. 282)

"... the true 'product' of the economic process is not a material flow, but a psychic flux - the enjoyment of life by every member of the population." (p. 284)
[Much like Irving Fisher (above).]

"So it is for its dogmatism, not for its use of abstraction, that standard economics is open to valid criticism." (p. 319)

Gever, John et al.: Beyond Oil

Despite its focus on US growth and wealth, this is an excellent study that predicts the imminent end of the Oil Age and of "cheap" resources generally. The key conceptual tool used is energy cost: the total (direct and indirect) energy that must be expended to extract oil and other resources. Of particular interest is the energy basis of US agriculture, which is not nearly as "productive" as its supporters suggest. The authors' key message: we must make the transition to sustainable energy now or face grave economic consequences.

"... perhaps the most important hypothesis of this book is this: the supply of fuel and other natural resources is becoming the limiting factor constraining the rate of economic growth." (p. 9)

"... unsustainable resource use is not in itself dangerous. As long as we can adjust smoothly to life without a particular resource when it runs out, unsustainable use is tolerable. What is intolerable is dependence on, the inability to do without, a resource that is being used unsustainably." (p. 34)

"Modern crop strains, which are usually given credit for these greatly increased yields, are actually little more than passive conduits for mounting fuel subsidies." (p. 47)

"It is no longer enough to ask whether human understanding can solve our problems; we must also ask whether we have the natural resources needed to implement the solutions." (p. 109)

"The dynamics of a system limited by its natural resources are very different from one limited by its technical understanding. Thus, we cannot extrapolate past successes into the future." (p. 109)

"One of our main arguments has been that neoclassical economics was developed during a period of resource abundance relative to the ability or need to exploit resources, and hence concentrated on the internal workings of the human economy. Models therefore focused on internal supply and demand conditions while relegating external conditions in the resource base to the background." (p. 113)

"Increasingly constricted supplies of net energy have an enormous bearing on strategies for the future. ... High quality oil and gas are our patrimony, and, if we make the wrong choice as to what to do with them, we won't have enough net energy with which to repair the damage." (p. 144)

"In the long run, the side effects of industrial agriculture may be the most significant threats to the system's and our society's sustainability." (p. 215)

"These expectations [the American Dream] are the standard against which actual performance is judged. During times of failed expectations, a society is especially vulnerable to a person or philosophy promising to restore it to its former glory." (p. 219)

"We have depleted most of our high-quality resources; the supply obtainable from low-quality deposits is largely limited by the supply of fuel; and the supply of fuel itself is bound by these constraints." (p. 247)

"... centuries hence, historians (or archeologists) will almost certainly refer to the period of 1900 to 2050 as the Oil Age. Oil has transformed practically everything - our jobs, our homes, our entertainment, our environment. ... The United States (and Western civilization) IS oil." (p. 248)

Gorbachev, Mikhail: Perestroika

Although Gorbachev was wrong about the resilience and future of Soviet socialism, this book powerfully presents the need for a new mode of thinking in a new era. We can learn from Gorbachev's experience with perestroika (restructuring) and glasnost (openness) as we face the need to massively modify our economies in order to address ecological limits and persistent world poverty.

"Our country's wealth in terms of natural and manpower resources has spoiled, one may even say corrupted, us. That, in fact, is chiefly the reason why it was possible for our economy to develop extensively for decades." (p. 19f)

[To a lesser degree, the same has been true for capitalist economies with respect to natural resources. See "Beyond Oil" (above).]

"Life convincingly confirms that at sharp turns of history ... the people demonstrate a remarkable ability to listen, understand, and respond if they are told the truth." (p. 57)

"The greatest difficulty in our restructuring effort lies in our thinking, which has been molded over the past years." (p. 65)

"Many decades of being mesmerized by dogma, by a rulebook approach, have had their effect. Today we want to inject a genuinely creative spirit into our theoretical work." (p. 66)

[This is precisely what is required in economics, and what is being resisted by conservative and progressive forces alike.]

"The people have so much wisdom and so keen a sense of responsibility that you can and must act boldly and confidently. Well, suppose we make mistakes. So what? It is better to rectify them than [to]sit and wait." (p. 89)

"Wishful thinking is the most dangerous occupation." (p. 95)

"Another no less obvious reality of our time is the emergence and aggravation of the so-called global issues which have also become vital to the destinies of civilization. I mean nature conservation, the critical condition of the environment, of the air basin and the oceans, and of our planet's traditional resources which have turned out not to be limitless. I mean old and new awful diseases and mankind's common concern: how are we to put an end to starvation and poverty in vast areas of the earth?" (p. 137)

"All of us face the need to learn to live at peace in this world, to work out a new mode of thinking, for conditions today are quite different from what they were even three or four decades ago." (p. 138)

"The restructuring [of the world] is a must for a world overflowing with nuclear weapons; for a world ridden with serious economic and ecological problems; for a world laden with poverty, backwardness, and disease; for a human race now facing the urgent need of ensuring its own survival." (p. 254)

Hirsch, Fred: Social Limits to Growth

When this book first appeared in 1977, the "limits to growth" debate was in full swing. Hirsch added a useful insight to this discussion: growth can, in various ways, destroy the social conditions for the enjoyment of more outputs, thus undercutting the benefits of growth even without considering ecological constraints. He introduced the notions of social congestion, social scarcity, defensive consumption, and positional goods. The second part of Hirsch's message was that growth depletes the "moral legacy" of shared interests and community, thus making it more difficult to reach social goals through the purely individualistic, atomistic operations of the market.

"Where the social environment has a restricted capacity for extending use without quality deterioration, it imposes social limits to consumption." (p. 3)

"Unchanged satisfaction then needs no special explanation. Relative income is still the key, but now in interpreting how much (net) consumption the individual has rather than how the individual assesses it." (p. 113)

[A misinterpretation of Hirsch is that positional goods are based on envy, competition, snobbery, etc. This can be true, but his main point is that growth creates real conditions that reduce real satisfactions, as the above quote indicates.]

"[Liberal philosophy] undermined its own mechanistic instrument for attainment of individual goals. For the efficient working of the market itself rests on certain aspects of social morality that are affected by the means and motives prevalent in the economic system." (p. 124)

"The growth alternative [to redistribution] is inherently less divisive, as noted earlier; it offers the possibility of consensus action, of a game with winners but no losers, of leveling up without leveling down: limiting the political choice to distributing the increment, rather than demanding the more fundamental political act of redistributing existing resources. Because of this immense political advantage in minimizing opposition, the growth objective is likely to dominate the distributional objective so long as its promise holds." (p. 174)

[Hirsch is right; Herman Daly has emphasized the same thing. These political difficulties are part of the reason why a normative economic framework like ENL is essential. ENL provides clear economic goals that do not depend exclusively on growth and that can potentially be widely shared.]

"Social limits to growth intensify the positional struggle. They increase the importance of relative place. They intensify pressure for equalization of economic resources on the part of the worse off and stiffen resistance to equalization by the better off." (p. 181)

[Hirsch's suggested solution is to play the economic game for smaller stakes, as by reducing the disparity of incomes among jobs.]

"If the extent of individual striving for position can be curtailed in such a way as to preserve the beneficial minimum of competition and choice, an unqualified benefit would ensue." (p. 183)

Keynes, John Maynard: Essays in Persuasion

Keynes was the most influential economist of the 20th century, and a truly remarkable man - a conservative with profoundly human sensibilities. This series of essays, written between the two World Wars, outlines Keynes's philosophy, expresses some of the ideas that would later become his General Theory (see below), and warns that the punitive reparations imposed on Germany after World War I are dangerously destabilizing. Hitler and World War II soon proved Keynes right.

"We shall lose ourselves in mere hypothesis unless we return in some degree to first principles, and, whenever we can, to such statistics as there are." (p. 8)

[My aim in formulating ENL is to establish a set of normative first principles for the current period of history. Without such a theory, I see activists and progressive intellectuals losing themselves in "mere hypothesis".]

"The policy of reducing Germany to servitude for a generation, of degrading the lives of millions of human beings, and of depriving a whole nation of happiness should be abhorrent and detestable ... even if it were possible, even if it enriched ourselves, even if it did not sow the decay of the whole civilized life of Europe. Some preach it in the name of Justice. In the great events of man's history, in the unwinding of the complex fates of nations, Justice is not so simple." (p. 17f)

"If we aim deliberately at the impoverishment of Central Europe, vengeance, I dare predict, will not limp." (p. 28)

[Keynes's prescience, compassion, and sense of history were truly amazing!]

"The economic doctrine of normal profits ... is a necessary condition for the justification of capitalism. The business man is only tolerable so long as his gains can be held to bear some relation to what, roughly and in some sense, his activities have contributed to Society." (p. 95)

"So far from the total investment ... being necessarily equal to the total of saving, disequilibrium between the two is at the root of many of our troubles. When investment runs ahead of saving we have a boom, intense employment, and a tendency to Inflation. When investment lags behind, we have a slump and abnormal unemployment, as at present." (p. 124)

[This strongly prefigures the General Theory.]

"There is no reason why we should not feel ourselves free to be bold, to be open, to experiment, to take action, to try the possibilities of things. And over against us, standing in the path, there is nothing but a few old gentlemen tightly buttoned-up in their frock coats, who only need to be treated with a little friendly disrespect and bowled over like ninepins." (p. 134)

"But today we have involved ourselves in a colossal muddle, having blundered in the control of a delicate machine, the working of which we do not understand." (p. 136)

"There is scarcely an important industry anywhere earning enough profit to make it expand - which is the test of progress." (p. 136)

[The last two quotes indicate the limitations of Keynes's thought. He conceived of capitalism as a machine to be understood, which is fine, but he ignored the class relations which also drive it. As well, he foresaw continued expansion and nowhere addressed ecological limits.]

"Suppose we were to stop spending our incomes altogether, and were to save the lot. Why, everyone would be out of work. ... we should all starve to death - which would surely serve us right for refusing to buy things from one another, for refusing to take in one another's washing, since that is how we all live." (p. 153)

[This is indeed the reality of capitalism, which must be fully understood before we attempt to radically restructure the system.]

"The interposition of the veil of money between the real asset and the wealth owner is a specially marked characteristic of the modern world." (p. 169)

"We live in a society organized in such a way that the activity of production depends on the individual business man hoping for a reasonable profit, or at least, to avoid an actual loss." (p. 272)

"Unemployment, I must repeat, exists because employers have been deprived of profit. The loss of profit may be due to all sorts of causes. But, short of going over to Communism, there is no possible means of curing unemployment except by restoring to employers a proper margin of profit." (p. 275)

[Keynes reminds us, from a relatively progressive perspective, the obstacles posed by capitalism to a just and sustainable society.]

"How can I accept a doctrine which sets up as its bible, above and beyond criticism, an obsolete economic textbook which I know to be not only scientifically erroneous but without interest or application for the modern world?" (p. 300)

[The references are to Soviet socialism and Marx's Capital. I have considerably more respect for "Capital" than Keynes did, and I have yet to find his exposition of its scientific errors.]

"... modern capitalism is absolutely irreligious, without internal union, without much public spirit, often, though not always, a mere congeries of possessors and pursuers. Such a system has to be immensely, not merely moderately, successful to survive." (p. 307)

[This accurate insight comes after a diatribe where Keynes rejects "Russian Communism".]

"The world is NOT so governed from above that private and social interest always coincide. It is NOT so managed here below that in practice they coincide. It is NOT a correct deduction from the Principles of Economics that enlightened self-interest always operates in the public interest. ... We cannot, therefore, settle on abstract grounds, but must handle on its merits in detail, what [Edmund] Burke termed 'one of the finest problems in legislation, namely, to determine what the State ought to take upon itself to direct by the public wisdom, and what it ought to leave, with as little interference as possible, to individual exertion.'" (p. 312f)

[This problem remains, and will likely always remain, at the core of humankind's economic affairs.]

"The important thing for Government is not to do things which individuals are doing already, and to do them a little better or a little worse; but to do those things which at present are not done at all." (p. 317)

"... the essential characteristic of Capitalism, namely the dependence upon an intense appeal to the money-making and money-loving instincts of individuals as the main motive force of the economic machine." (p. 319)

"Many people, who are really objecting to Capitalism as a way of life, argue as though they were objecting to it on the ground of its inefficiency in attaining its own objects. Contrariwise, devotees of Capitalism are often unduly conservative, and reject reforms in its technique, which might really strengthen and preserve it, for fear that they may prove to be the first steps away from Capitalism itself." (p. 321)

"For my part, I think that Capitalism, wisely managed, can probably be made more efficient for attaining economic ends than any alternative system yet in sight, but that in itself it is in many ways extremely objectionable. Our problem is to work out a social organisation which shall be as efficient as possible without offending our notions of a satisfactory way of life." (p. 321)

[Given the reality of ecological decline, our problem has become considerably larger.]

"In the field of action reformers will not be successful until they can steadily pursue a clear and definite object with their intellects and their feelings in tune." (p. 321)

[This sums up the rationale for ENL.]

"Half the copybook wisdom of our statesmen is based on assumptions which were at one time true, or partly true, but are now less and less true day by day. We have to invent new wisdom for a new age." (p. 337)

Keynes, John Maynard: General Theory

This book influenced the economic theory and policy of the 20th century more than any other - by a large margin. As its preface states, however, "... its main purpose is to deal with difficult questions of theory." As a result the book is quite technical, and I will quote from it very selectively.

"I shall argue that the postulates of the classical theory are applicable to a special case only and not to the general case ... with the result that its teaching is misleading and disastrous if we attempt to apply it to the facts of experience." (p. 3)

"The outline of our theory can be expressed as follows. When employment increases, aggregate real income is increased. The psychology of the community is such that when aggregate real income is increased aggregate consumption is increased, but not by so much as income. Hence employers would make a loss if the whole of the increased employment were to be devoted to satisfying the increased demand for immediate consumption. Thus, to justify any given amount of employment there must be an amount of current investment sufficient to absorb the excess of total output over what the community chooses to consume when employment is at a given level." (p. 27)

"Pyramid-building, earthquakes, even wars may serve to increase wealth ... It would, indeed, be more sensible to build houses and the like; but if there are political and practical difficulties in the way of this, the above would be better than nothing." (p. 129)

[Keynes submits to the growth/consumption realities of capitalism in order to reduce unemployment without structurally undermining the system. This "solution" is the one that will no longer be fully available to future generations as ecological realities intrude.]

"Wordly wisdom teaches that it is better for reputation to fail conventionally than to succeed unconventionally." (p. 158)

"... economic prosperity is excessively dependent on a political and social atmosphere which is congenial to the average business man." (p. 162)

"I expect to see the State ... taking an ever greater responsibility for directly organising investment ... " (p. 164)

"Thus the traditional analysis is faulty because it has failed to isolate correctly the independent variables of the system. Saving and Investment are determinates [effects] of the system, not the determinants [causes]. They are the twin results of the system's determinants, namely, the propensity to consume, the schedule of the marginal efficiency of capital, and the rate of interest." (p. 184)

[No dictionary I have consulted accepts "determinate" as a noun, which is how Keynes uses it. I presume it means "effect" in this important summary statement. Corrections are welcome.]

"It is preferable to regard labour ... as the sole factor of production, operating in a given environment of technique, natural resources, capital equipment, and effective demand." (p. 213f)

[In this part of the book Keynes comes close to Marx's view, although Keynes only refers obliquely to "the pre-classical doctrine" (which for Keynes means pre-neoclassical, thus referring to Smith, Ricardo, Marx, et al.).]

"... so that we should attain the conditions of a quasi-stationary community ..." (p. 220)

[Here Keynes sounds like John Stuart Mill. Neither of these last two points - Keynes' labor focus and his speculation on the stationary state - has received much comment, at least to my knowledge.]

"The right dichotomy is, I suggest, between the Theory of the Individual Industry or Firm and the rewards and the ... Theory of Output and Employment as a whole on the other." (p. 293)

[This is the birth of the split between microeconomics (Firm) and macroeconomics (Output), which still rules standard economics today, although macro has suffered some setbacks with the conservative backlash to Keynesian thought.]

"The object of our analysis is, not to provide a machine, or method of blind manipulation, which will furnish an infallible answer, but to provide ourselves with an organised and orderly method of thinking out particular problems ..." (p. 297)

"Too large a proportion of recent 'mathematical' economics are mere concoctions, as imprecise as the initial assumptions they rest on, which allow the author to lose sight of the complexities and interdependencies of the real world in a maze of pretentious and unhelpful symbols." (p. 298)

"I conclude that the duty of ordering the current volume of investment cannot safely be left in private hands." (p. 320)

[And that's why conservatives are not overly fond of Keynes.]

"The right remedy for the trade [business] cycle is not to be found in abolishing booms and thus keeping us permanently in a semi-slump; but in abolishing slumps and thus keeping us permanently in a quasi-boom." (p. 322)

[This is a clear expression of what Herman Daly has called "growthmania". It is untenable in an ecologically constrained world, and highlights why Keynes, and left-liberal growth devotees generally, must be forcefully challenged.]

"The weakness of the inducement to invest has been at all times the key to the economic problem." (p. 348)

"The complaint against the present system is not that these 9 million men ought to be employed on different tasks, but that tasks should be available for the remaining 1 million men. It is in determining the volume, not the direction, of actual employment that the existing system has broken down." (p. 379)

[Keynes adheres to the fundamental logic of capitalism, and has no conception of intrinsic value or effectual value.]

"Whilst ... the enlargement of the functions of government ... [would appear to be] a terrific encroachment on individualism, I defend it, on the contrary, both as the only practicable means of avoiding the destruction of existing economic forms in their entirety and as the condition of the successful functioning of individual initiative." (p. 380)

[Keynes is often seen as a conservative who labored mightily to save a foundering capitalism from revolutionaries during the Great Depression. This view is essentially correct.]

Lipsey, Richard G. et al.: Economics

This introductory university text has a special place in my heart because I bought it at a 2nd-hand book store in the hippy haven of Nelson, British Columbia, because it's the first major economics text I read, and because one of the authors (Richard Lipsey) has had a long relationship with my alma mater, Simon Fraser University. As well, it was written in the early 1980s, before the conservative counter-revolution really began to bite.

"Although macroeconomic problems such as inflation and unemployment are still of great concern, many of the problems that students find most challenging today - poverty, pollution, and managing wage and price controls - are microeconomic in character." (p. xxiii and xxiv)

[This is false, but reflects the prevailing theoretical fad of the day - basing macroeconomics on a microeconomic foundation.]

"The problems of economics arise out of the use of scarce resources to satisfy unlimited human wants. Scarcity is inevitable and is central to economic problems." (p. 6)

[The standard fallacies are explicitly laid down early on.]

"Just as scarcity implies the need for choice, so choice implies the existence of cost." (p. 7)

[Thus introducing the notion of opportunity cost - in my view the most ideologically pregnant concept in standard economics.]

"Economics has a large role to play in defining goal conflicts by identifying the effects, indirect as well as direct, of a proposed policy." (p. 13)

[I agree with this - we need a positive theory to analyze the implications of policies. A normative theory like ENL is essential, but not adequate. Unfortunately, standard economics does its positive analysis from a conservative perspective. Progressive forces need their own progressive positive theory.]

"Economics does not allow a 'scientific' choice between alternative ends: It does not tell which of competing goals should be adopted. Economic analysis can help to determine whether a particular measure contributes to stated goals and at what cost." (p. 18)

"We can safely assume that the state of the weather is not determined by economic conditions." (p. 26)

[This is a sign of how dramatically the ecological state of our planet has changed in less than a quarter of a century. Today this statement would have to be deleted - climate scientists have shown that climatic conditions and the weather are significantly affected by the boom and bust cycles of the economy.]

"Economics is about the behavior of people." (p. 48)

[A pithy statement of the capitalist orientation of standard economics. If you're trying to sell stuff and make profits, you definitely want to know about people's behavior. If you're trying to ensure human well-being on a global basis and into the distant future, economics is about a lot more than 'the behavior of people'.']

"It is the ordinary demand curve that has the axes 'backwards'. This practice dates to Alfred Marshall's Principles of Economics (1890)." (p. 94n)

[The obvious fact of reversed axes (the independent variable, price, is placed on the Y-axis) is usually ignored. I suspect that this reversal is part of the mystification of standard economics, although the authors ascribe it to "the odd ways of economists." They could be right.]

"... water is cheap because there is enough of it that people consume it to the point at which its marginal utility is very low; they are not prepared to pay a high price to obtain a little more of it." (p. 159)

[This is a transparent mystification which all economists have been trained to accept. The phrase "enough of it" hides the obvious fact that price is regulated by the social effort required to obtain a commodity, which is explicitly accepted by Marx's labor theory of value. Whether Marx is right is open to debate; that standard economics is wrong is certain.]

"Growth in productivity has often been accompanied by increased pollution and more industrial accidents." (p. 243)

[A rare glimpse into ecological and worker realities. The conservative counter-revolution of the past few decades has taught standard economists that such progressive statements are unacceptable.]

"No evidence has been gathered to indicate that it is necessary to have separate theories of the demand for human and nonhuman factors of production." (p. 368)

[I have no problems with statements such as this. In a positive theory, demand is an empirical issue, and if a single theory will suffice, so be it. The human and nonhuman elements must be separated in a normative theory.]

"After all, there is an absolute maximum to the world's land area; there is an upper limit to the number of workers; there is only so much coal, oil, copper, and iron ore in the earth. In none of these cases, however, are we near the upper limits. The effective supplies of land, labor, and natural resources are thus not fixed in any meaningful sense." (p. 371)

[The admission of absolute limits has become increasingly rare, under the influence of Julian Simon and other cornucopians. The statement that we are not near the limits is an article of faith for standard economics - see Beyond Oil, p. 113 (above, in Gevert, et al.).]

"The free-market system has several great virtues: it provides automatic coordination without the need for devoting resources to central planning; it is impersonal in denying to any individual or firm great power over others; it leads (under well-defined circumstances) to an efficient allocation of resources; and it automatically sets in motion forces that correct any disequilibrium that may develop." (p. 452)

[This is under the heading, "What do Markets do Well?" It is an excellent summary of the potential benefits of markets, which progressive forces must heed carefully as we move to restructure economic systems for justice and sustainability.]

"Because it is possible to talk about efficient and inefficient allocations, but not about 'better' or 'worse' distributions of income, without introducing normative considerations, much of positive economics concerns efficiency and neglects redistributions of income." (p. 493)

[Right, but this underscores the fact that a complete economic analysis required BOTH a positive and a normative theory.]

"To generalize, the living standards of the inhabitants of all regions will be higher when the inhabitants of each region specialize in producing the commodities in which they have some natural or acquired advantage and obtain other products by trade, than when all seek to be self-sufficient." (p. 505)

[This is not a generalization, but a propaganda statement for corporate globalization, ignoring such factors as the ecological and human costs of transporting goods, the quality degradation of imported perishables, the vulnerability of economies to global economic forces under specialization, and much more. I also don't share the commitment of many environmentalists to self-sufficient economies. I believe we need a balanced analysis on the issue for each specific situation, based on both a positive and a normative framework.]

"The Limits to Growth (1974) predicted the imminence of a growth-induced doomsday." (p. 923)

[Typical nonsense regarding this book, which predicted nothing.]

Locke, John: Second Treatise of Government

Locke had a luminous mind, and his Essay Concerning Human Understanding is a model of penetrating insight. In economics he had some useful comments, although his conservative ideology overpowered his reason.

"This is certain, that in the beginning, before the desire of having more than man needed had altered the intrinsic value of things, which depends only on their usefulness to the life of man ...". (p. 23)

[Locke is one of many early economic thinkers who used "intrinsic value" in exactly the same way as ENL does.]

"... it is labour indeed that puts the difference of value on every thing ...". (p. 25)

[Locke enunciated a crude labor theory of USE-value. This is not to be confused with Marx's sophisticated labor theory of EXCHANGE-value.]

"The greatest part of things really useful to the life of man, and such as the necessity of subsisting made the first commoners of the world look after ... are generally things of short duration; such as, if they are not consumed by use, will decay and perish of themselves: gold, silver and diamonds, are things that fancy or agreement hath put the value on, more than real use, and the necessary support of life." (p. 28)

[This clear, obvious, rational distinction between necessities and luxuries is buried in standard economics, where everything is a commodity to be sold in a market for profit.]

Lomborg, Bjorn: The Skeptical Environmentalist

Lomborg is a maddening, contradictory figure. On one hand he performed a valuable service by critically examining the claims of environmentalists and by urging the use of economic logic to prioritize global issues. On the other hand, his scientific scrutiny far exceeded his scientific capacity, and the only economic logic he considered was standard economics, with all its ideological distortions and ecological ignorance. Lomborg is either an unwitting business stooge or a naive but sincere force for global justice.

"The only scarce good is money with which to solve problems." (p. 9)

[This is the ecologically ignorant view of standard economics.]

"... a central assumption of my argument: that the needs and desires of human kind represent the crux of our assessment of the state of the world. This does not mean that plants and animals do not also have rights but that the focus will always be on the human valuation." (p. 11)

[In general, I share this perspective. The problem is that standard economics does NOT share it - its concepts largely exclude the needs of the poor.]

"Perhaps the most famous set of predictions came from the 1972 global best-seller Limits to Growth." (p. 29)

[The typical distortion about the book's non-existent predictions.]

"It cannot be in the interest of our society for debate about such a vital issue as the environment to be based more on myth than truth." (p. 32)

[This is surely true, and a good reason to welcome critics.]

"... our lives and our health have improved dramatically over the past couple of hundred years. We live longer, and we are more healthy. This is one of the great miracles of civilization."

[This is irrefutably true. We should not deny the reality of progress, but seek to extend it to everyone on the globe and to future human generations.]

"In 1986 a team of researchers headed by the Ehrlichs examined how much of the Earth's net primary production (NPP) is actually consumed by man." (p. 99)

[The primary author of this study is usually cited as Peter Vitousek, but Lomborg deletes him from the main text, although he is correctly identified in the notes. That quibble aside, Lomborg is appropriately critical of the study's usual interpretation - that humankind consumes 40% of NPP (roughly: annual plant growth) and thus cannot double or triple its population. The study's authors carefully outlined three calculations for appropriated NPP, based on different definitions - low (3%), intermediate (19%), and high (40%). Only the high figure is usually cited by environmentalists, which distorts the authors' intentions.]

"... the road ahead for the starving in the poorest countries is larger economic growth such that these individuals will also be allowed a decent existence." (p. 101)

[ENL analysis would in many cases agree with this. On a separate point: why would the editors permit a strange construction like "larger economic growth"? This is typical of Lomborg's stilted English throughout the text, something that could easily have been corrected by a competent editor. Others have criticized the publisher for allowing shoddy scientific work to appear under its name. The question arises: did Cambridge University Press actually see this book before publishing it?]

"... the world as a whole would benefit more from investing in tackling problems of poverty in the developing world and in research and development of renewable energy than in policies focused on climate change." (p. 259)

[Lomborg must be credited for at least paying lip service to the needs of the poorest, but all his prescriptions are consistent with business interests. That's why he's so difficult to figure out.]

"Indeed, why is it that global warming is not discussed with an open attitude, carefully attuned to avoid making big and costly mistakes to be paid for by our descendants, but rather with a fervor more fitting for preachers of opposing religions? This is an indication that the discussion of global warming is not just a question of choosing the optimal economic path for humanity, but has much deeper, political roots as to what kind of future society we would like." (p. 319)

Malthus, Thomas Robert: Principles of Political Economy

Most people know Malthus only through his population theory, but he was also an insightful standard economic thinker and a major influence on John Maynard Keynes.

"... the science of political economy bears a nearer resemblance to the science of morals and politics than to that of mathematics." (p. 1)

"If every person were satisfied with the simplest food, the poorest clothing, and the meanest houses, it is certain that no other sort of food, clothing, and lodging would be in existence ...". (p. 7)

"... if production be in a great excess above consumption, the motive to accumulate and produce must cease from the want of an effectual demand in those who have the principal means of purchasing." (p. 7)

[This is pure Keynesianism.]

"The science of political economy is essentially practical, and applicable to the common business of human life. There are few branches of human knowledge where false views may do more harm, or just views more good." (p. 9)

[Right - and this is why environmentalists, activists, and progressives generally must take a new economic framework seriously.]

"I should define wealth to be the material objects, necessary, useful, or agreeable to man, which are voluntarily appropriated by individuals or nations." (p. 33)

"... as the bounty of nature furnishes but few of the necessaries, conveniences, and luxuries of life to man without the aid of his exertions ... it will be found that, in the real state in which man is placed on earth, wealth and exchangeable value, though still by no means the same, are in many points nearly connected." (p. 299)

[That is, use-value and exchange-value are separate concepts, but insofar as economic activities are required to produce outputs, they are closely associated. This is true, although it gives rise to numerous myths and misconceptions.]

"... value is founded on the wants of mankind, and the adaptation of particular commodities to supply these wants, independently of the actual quantity of labour which these commodities may have cost in their collection or production." (p. 303)

[This announces Malthus's adoption of the standard theory of subjective value, and the repudiation of Marx's labor theory of value.]

[General comment: In the unquoted text, Malthus flirts with intrinsic value, then equates intrinsic value with "exchangeable value" under certain conditions, and finally drops the conditions. This is the kind of legerdemain perfected by the magicians of neoclassical economics.]

Marshall, Alfred: Principles of Economics

This highly influential work summarized the state of economics in 1890, when it appeared. However, Marshall was a relatively enlightened thinker, and he disagreed with some of the "one-sided" views of marginalist thinkers like Stanley Jevons. Part of the "progress" of standard economics in the 20th century has been to strip the discipline of its Marshallian humanity and to create a mathematical edifice that precisely reflects the ideological needs of capitalists.

"Political Economy or Economics is a study of mankind in the ordinary business of life; it examines that part of individual and social action which is most closely connected with the attainment and with the use of the material requisites of wellbeing. Thus it is on the one side a study of wealth; and on the other, and more important side, a part of the study of man." (p. 1)

"But the conditions which surround extreme poverty, especially in densely crowded places, tend to deaden the higher faculties." (p. 2)

[It's hard to imagine an economist talking like this today.]

"But of course economics cannot be compared with the exact physical sciences: for it deals with the ever changing and subtle forces of human nature." P. 12)

"... the economist, like every one else, must concern himself with the ultimate aims of man ... ". (p. 14)

"Money is a means towards ends, and if the ends are noble, the desire for the means is not ignoble." (p. 18)

"... economists, like all other students of social science, are concerned with individuals chiefly as members of the social organism." (p. 20)

[Some heterodox economists are now trying to recapture this communitarian spirit, which has been buried alive under the sands of "methodological individualism".]

"In all this [economists] deal with man as he is: not with an abstract or 'economic' man; but a man of flesh and blood." (p. 22)

[And here Marshall rejects "homo economicus." How did this heathen ever come to represent the standard discipline?]

"Though economic analysis and general reasoning are of wide application, yet every age and every country has its own problems; and every change in social conditions is likely to require a new development of economic doctrines." (p. 31)

"Accordingly it is proposed in this treatise to count as part of capital from the social point of view all things other than land, which yield income that is generally reckoned as such in common discourse ...". (p. 66)

[Here Marshall reverts to the mystifications of conventional thought. He is humane, but he cannot transcend the limits of his class.]

"It is indeed doubtful whether much has been gained by the use of complex mathematical formulas. But the application of mathematical habits of thought has been of great service ...".

[I agree. Hence the liberal use of graphs in ENL.]

"The marginal utility of a thing to anyone diminishes with every increase in the amount of it he already has." (p. 79)

[Marshall is the great popularizer of marginal analysis, which I believe is a genuine advance in economic method. What must be changed for our purposes are the quantities to which marginal analysis is applied.]

"... the richer a man becomes the less is the marginal utility of money to him ...". (p. 81)

[Standard economists have contorted themselves into comical positions trying to refute this obvious point. Nothing more clearly demonstrates the class prejudice of standard thought.]

[On p. 81 is the famous demand schedule. Indeed, it shows price on the vertical axis and quantity on the horizontal axis - the silly reversal of axes that economists employ to this day. Since so much of Marshall has been jettisoned, why not this?]

"Adam Smith, while insisting on the general advantages of that minute division of labour and of that subtle industrial organization which were being developed with unexampled rapidity in his time, was yet careful to indicate many points in which the system failed, and many incidental evils which it involved. But many his followers with less philosophic insight, and in some cases with less real knowledge of the world, argued boldly that whatever is, is right." (p. 205)

[As a general comment, perhaps 80% of what followers say about their hero's thought is false or misleading. This applies to Smith and his epigones, as Marshall indicates, and perhaps even more forcefully to Marx and those who came after him. To understand a major thinker, it is necessary to study his or her original texts, and to approach these with an open, critical mind. Few intellectuals do this.]

*"For though institutions may be changed rapidly; yet if they are to endure they must be appropriate to man: they cannot retain their stability if they change very much faster than he does. Thus progress itself increases the urgency of the warning that in the economic world, *Natura non facit saltum* [nature makes no leaps]."*

[Marshall's Latin slogan, which also appears on the book's frontispiece and in Darwin's Origin of Species, has been interpreted by some to mean that revolution should be avoided. The statement comes on the heels of what looks like some anti-Marxist sentiments, so this could be correct. Still, to me it appears to be a general statement about the pace of change and the human capacity to adapt to it.]

"Thus we may conclude that, as a general rule, the shorter the period which we are considering, the greater must be the share of our attention which is given to the influence of demand on [exchange]

value; and the longer the period, the more important will be the influence of the cost of production on [exchange] value." (p. 291)

[This is roughly consistent with Marx's labor theory of value.]

"More exact notions on the relations of demand and supply, particularly when expressed in the form of diagrams, may help us to see what statistics could be collected ...". (p. 416)

[This is the point I have made to critics who state that my graphs are meaningless because there is little data to support them. It is precisely the existence of the graphs which provides the incentive for the collection of the required data. This was true for neoclassical economics in 1890, and it is true for ENL now.]

"Specialists who never look beyond their own domain are apt to see things out of true proportion; much of the knowledge they get together is of comparatively little use; they work away at the details of old problems which have lost most of their significance and have been supplanted by new questions rising out of new points of view; and they fail to gain that large illumination which the progress of every science thrown by comparison and analogy on those around it." (p. 636)

"The function then of analysis and deduction in economics is not to forge a few long chains of reasoning, but to forge rightly many short chains and single connecting links." (p. 638)

"Natural instinct will select rapidly, and combine justly, considerations which are relevant to the issue in hand; but it will select chiefly from those which are familiar: it will seldom lead a man far below the surface, or far beyond the limits of his personal experience." (p. 642)

[This is why I oppose an activism driven solely by intuition, immediate perceptions, and personal outrage; a theory is required to dig beneath the surface and to deepen the strategies and tactics.]

"The pursuit of abstractions is a good thing, when confined to its proper place." (p. 645)

*"Utility determines the amount that has to be supplied,
The amount that has to be supplied determines cost of production,
Cost of production determines value, ..." (p. 675)*

"The 'cost of production' principle and the 'final utility' principle are undoubtedly component parts of the one all-ruling law of supply and demand; each may be compared to one blade of a pair of scissors." (p. 675)

Martinez-Alier, Juan: Ecological Economics

Although it's not evident from the title, this book traces the history of ecological thought in economics. Martinez-Alier is deeply concerned with the relationship between ecological issues and poverty in the developing world.

"... the economy, from the ecological point of view, does not have a common standard of measurement. Economists are left without a theory of value. This is the main point of this book." (p. x)

[I agree that value is a purely human concept, and therefore do not attempt to impose value on nature in ENL.]

"... we shall find ecological roots and ecological contents in social movements by poor populations, in history as well as at present, and that ecology is potentially a stronger force in the south than in the north." (p. xi)

"Ecological awareness is not new in social history. Neither is it new in intellectual history. The ecological critique of economics began a century ago. I call the emerging line of thought 'ecological economics'. It is represented today by Georgescu-Roegen and a few others. Why 'ecological economics', with its fundamental challenge to economics, did not take root in universities is a mystery." (p. xi)

"The economy should not be seen as a circular or spiral flow of exchange value, a merry-go-round between producers and consumers, but rather as a one-way entropic throughput of energy and materials." (p. xv)

[This is the most fundamental insight of ecological economics, and its correct starting point.]

"Since future generations have no say [in the allocation of wastes and resources], the economy cannot be explained on the basis of individual choices and preferences. Because of this, ecological economics is inimical to orthodox economics." (p. xviii)

"Engels' dismissal in 1882 of Podolinsky's ecological economics missed a good chance of developing an ecological Marxism." (p. xviii)

[Probably true - Marx and Engels were aware of environmental degradation, but did not build this awareness into their analytical concepts.]

"... this book deals mainly with the study of energy flow, a useful unifying principle in ecological analysis and also in the analysis of the economy from the ecological point of view." (p. 1)

"[Leonard Pfoundler's] article suggests that the expression 'energy crisis' should be reserved for situations in which there are humans who are unable to obtain the 2,000 or 2,500 kilocalories per day that they would need for minimum sustenance ...". (p. 10)

"All too often a rich past of ideas, concepts, controversies, personal failures, and successes falls into oblivion as the history of disciplines which have finally found their academic niches is written." (p. 45)

"Labour could increase 'the accumulation of energy on earth'. Energy accounting thus gave a scientific basis to the labour theory of value, a point that neither Marx nor Engels appreciated." (p. 49)

[Nonsense. This follows Georgescu-Roegen in wildly misinterpreting the labor theory of value. This theory describes the standard of measurement for exchange-value that has evolved under capitalism, which has nothing to do with energy or physical science. Ecological economics has repeatedly tried to reconcile energy with "economic value", without credible success. Most of today's ecological economists have dropped such attempts, and instead try to reconcile the abysmally named "natural capital" with the subjective valuation of standard economics - also without credible success.]

"According to [Patrick] Geddes, [John] Ruskin's clear vision of physical realities and his critique of the quality of production and of life, made him the legitimate heir of the physiocrats and the precursor of their rehabilitation with the aid of the physical and biological sciences. Moreover, by expressing the aims of practical economics as the improvement of the quality of life ... and by stressing the essential unity of economics and morality and not their discrepancy, Ruskin had become entitled to be considered as an economist whose work would have permanent intellectual value." (p. 93)

[Martinez-Alier rightly criticizes Geddes for being overly sanguine about Ruskin's economic heft, but I agree with Geddes that Ruskin made key contributions to economic thought. Hence my appropriation of his concepts of intrinsic value and effectual value.]

"Geddes was exercising here a leitmotif of ecological economics: the plants as the real capitalists, the economists' confusion between wealth and debt." (p. 97)

"An ecological history of humankind is not at all incompatible with the view of history as the history of class struggle ...". (p. 101)

"[Frederick] Soddy took issue directly with Keynes' views on long-term growth ... Real wealth, in the form of a wheat crop, for instance, would rot if stored for any length of time, whereas the wealth which took the form of so-called capital goods, and was registered as financial capital, was not to rot but, on the contrary, to grow independently at compound interest, ad infinitum. This was a convention of human society ... but could not run permanently counter to the principles of thermodynamics." (p. 128)

"[Lancelot Hogben's] complaints against economists were twofold. Firstly, they proposed a theory of production without even a rudimentary knowledge of science and technology, which made them ridiculous; and secondly, they proposed a theory of consumption without a study of the origins of human needs; this made them noxious The fact that people have common needs was forgotten because there was a unilateral insistence on their having individual preferences." (p. 152)

["Unilateral insistence" is a good term for the narrow, class-based dogmatism of standard economists.]

Marx, Karl: Capital, Vol. 1-3

Capital is a fundamentally important source of insight into the workings of capitalist economies, but it has been effectively marginalized, and the labor theory of value may well be the most flagrantly distorted theory in the history of human thought.

Note that, when Marx uses the term "value" alone, he is referring to exchange-value. For a summary of Marx's economic ideas, see the document [Key Economic Concepts of Karl Marx](#).

" [The utility or use-value] of a commodity is independent of the amount of labour required to appropriate its useful qualities." (V.1, p. 44)

"... that which determines the magnitude of the value of any article is the amount of ... labour-time socially necessary for its production." (V.1, p. 47)

[Briefly and incompletely, this is the labor theory of value. Over the years I have encountered the following major misinterpretations and distortions:

1. The theory applies to use-value. (No - it applies only to exchange-value under capitalism.)
2. The theory applies to all commodities. (No - it applies only to normal commodities, defined as those produced by standard labor under reproducible conditions. The exchange-value of inherently rare items such as fine paintings and talented athletes is synonymous with price, and is determined entirely in the market.)
3. The theory explains market prices. (No - it identifies the forces that underlie market prices. The price of a commodity in the market is a result of the interaction between these underlying forces and the short-term fluctuations of supply and demand.)
4. If more labor-time is required to produce a commodity, its exchange-value will increase. (Only true if the increased labor-time is a general social requirement.)
5. Exchange-value based on labor-time justifies the claims of workers to the entire economic product. (No - it is simply capitalism's historically evolved standard for measuring the social resources applied to production. If such claims are made, they are purely political.)
6. The theory rejects the contributions of capitalists. (No - Marx fully acknowledged these, but denied that they have any bearing on exchange-value. Capitalists gain or lose money based on revenues and costs, not on their contributions to exchange-value - which is why, unlike workers, they can become filthy rich or lose their shirts. The fallacy is the failure to distinguish between an ESSENTIAL and a VALUE-ADDING factor in capitalist production. Note carefully that Marx's interpretation here is based on his perception of the facts; it is not a normative judgment.)
7. The theory rejects the contributions of nature. (No - nature is fully recognized as being essential to use-value, but aside from monopoly conditions capitalism does not ascribe exchange-value to it. Again, this is a statement about historically evolved capitalist conditions, not a judgment about the worth of nature. Ecological economists please take note!)
8. The theory may have applied in a more primitive state of society, but capitalist economies now rely on brains, technology, and organization, rendering it obsolete. (Marx agreed - even in the 19th century - that a modern economy SHOULD NOT be based on labor-time, but that capitalism anachronistically WAS based on it. This was one of his reasons for wanting to overthrow the system.)
9. Exchange-value is determined entirely by subjective valuation. (No - subjective valuation determines a buyer's willingness to pay for a commodity. The issue addressed by exchange-value is the social resources required to produce it. These two factors interact in the market, but they are discrete concepts. Their conflation by standard economics is a continuing insult to rational thought.)
10. Exchange-value is measured by scarcity. (No - scarcity is a qualitative CONDITION for exchange-value, not its quantitative MEASURE. Scarcity is unquantifiable in the direct sense - it can only be quantified through the expenditure of resources required to overcome it. This is exactly what socially necessary labor-time provides.)]

"A thing can be a use-value, without having value. This is the case whenever its utility to man is not due to labour. Such are air, virgin soil, natural meadows, etc." (VI, p. 48)

"... labour is not the only source of material wealth... As William Petty puts it, labour is its father and the earth its mother." (VI, p. 50)

"It becomes plain, that it is not the exchange of commodities which regulates the magnitude of their value; but, on the contrary, that it is the magnitude of their value which controls their exchange proportions." (VI, p. 69)

[Clearly correct, and vociferously denied by standard thinkers.]

"The simple circulation of commodities - selling in order to buy - is a means of carrying out a purpose unconnected with circulation, namely, the appropriation of use-values, the satisfaction of wants. The circulation of money as capital is, on the contrary, an end in itself, for the expansion of value takes place only within this constantly renewed movement. The circulation of capital therefore has no limits." (VI, p. 150)

"Use-values are only produced by capitalists because, and in so far as, they are the material substratum, the depositories of exchange-values ... His aim is to produce not only a use-value, but a commodity also; not only use-value, but value; not only value, but at the same time surplus-value." (VI, p. 181)
[And surplus-value is the basis for profits.]

"He [the businessman] leaves this and all such subterfuges and juggling tricks [regarding the origin of profits] to the professors of Political Economy, who are paid for it." (VI, p. 187)

"To appropriate labour during all the 24 hours of the day is, therefore, the inherent tendency of capitalist production." (VI, p. 245)

[One of the great virtues of Marx's analysis is that it is wholly without illusions. Reading Capital is a great tonic for those who believe that capitalism will one day provide pleasant lives of leisure for all.]

"... Capital is reckless of the health or length of life of the labourer, unless under compulsion from society. To the out-cry as to the physical and mental degradation, the premature death, the torture of over-work, it answers: Ought these to trouble us since they increase our profits?" (VI, p. 257)

"Vulgar economy which, indeed, 'has really learnt nothing,' here as everywhere sticks to appearances in opposition to the law which regulates and explains them." (VI, p. 291)

"... a scientific analysis of competition is not possible, before we have a conception of the inner nature of capital..." (VI, p. 300)

[In Capital Marx was attempting to explain capital's inner nature; he did not complete the full analysis of competition in his lifetime. Many of Marx's critics ignore this distinction, using the realm of market competition to "refute" concepts about the system's inner workings. This is like using meteorological phenomena to attack string theory. See also V3, p. 970.]

"The directing motive, the end and aim of capitalist production, is to extract the greatest possible amount of surplus-value ...". (VI, p. 313)

[But, incidental to this aim, capitalism can significantly benefit humankind. Conservatives err by refusing to acknowledge this directing motive; progressives err by refusing to acknowledge the system's incidental benefits. The errors of both arise from an excessive adherence to ideology.]

"... machinery is intended to cheapen commodities ... it is a means for producing surplus-value." (VI, p. 351)

"The productiveness of a machine is therefore measured by the human labour-power it replaces." (VI, p. 369)

"... Modern Industry, when it has attained to a certain pitch, is capable, by the revolution it effects in the mode of production and in the social conditions of production, of also revolutionising people's minds." (VI, p. 454n)

[Present humankind, by rediscovering Marx's economic concepts and by adopting a normative framework such as ENL, must produce a mental counter-revolution.]

"... all progress in capitalistic agriculture is a progress in the art, not only of robbing the labourer, but of robbing the soil ..." (VI, p. 474f)

[Here Marx cites Liebig, a key player in the history of ecological economics - see Martinez-Alier above.]

"Fanatically bent on making value expand itself, [the capitalist] forces the human race to produce for production's sake; he thus forces the development of the productive powers of society, and creates those material conditions, which alone can form the real basis of a higher form of society, a society in which the full and free development of every individual forms the ruling principle." (VI, p. 555)

[Marx correctly identifies the historical role of the capitalist; his vision of the future will have to be modified for an ecologically constrained world that remains dominated by capitalism.]

"... capital is not a thing but a social relation between persons, established by the instrumentality of things." (VI, p. 717)

[If you understand this, you grasp the essence of capitalism.]

"... capitalism is abolished root and branch by the bare assumption that it is personal consumption and not enrichment that works as the compelling motive." (V2, p.123)

[So long as capitalism exists, it will be necessary to accept some form of capitalist enrichment. Our task will be to make this ecologically harmless.]

"The more profound and correct ideas of [Adam Smith] elsewhere did not prevail, but this blunder of his did." (V2, p. 218)

[The nature of the blunder is irrelevant - the point is to note how standard economics has been developed over time. Dangerous ideas (such as Smith's crude labor theory of value) are quickly passed by, and accurate insights that endanger capital are buried; however, errors and shallow distortions that serve capital's ideological purpose are retained and eventually cast into mathematical form.]

"Furthermore this brings to completion the fetishism peculiar to bourgeois Political Economy, the fetishism which metamorphoses the social, economic character impressed on things in the process of social production into a natural character stemming from the material nature of things." (V2, p. 229)

[Ecological economics, which aims to return economics to the "material nature of things," is particularly prone to this fetishism. Hence its wholesale, uncritical acceptance of the notion of "natural capital."]

"Just as the capitalist mode of production promotes on the one hand the development of the productive forces of social labour, so on the other hand does it promote economy in the use of constant capital." (V3, p. 179)

[Constant capital refers to the means of production - buildings, machinery, raw materials, etc., whose value does not expand in production. Marx is saying that capitalists tend to conserve such assets in

order to maximize profits, which is an ecologically positive aspect of the system. However, note the next quote.]

"Yet for all its stinginess, capitalist production is thoroughly wasteful with human material, just as its way of distributing its products through trade, and its manner of competition, make it very wasteful of material resources, so that it loses for society what it gains for the individual capitalist." (V3, p. 180)

"Yet [capitalist production] squanders human beings, living labour, more readily than does any other mode of production, squandering not only flesh and blood, but nerves and brain as well." (V3, p. 182)
[This is why ENL's concept of labor cost includes such worker degradation.]

"This shows among other things how important low raw material prices are for industrial countries..." (V3, p. 201)

[On p. 203 Marx explains: "The value of the raw and ancillary materials goes at a single stroke into the value of the product for which they are used, while the value of the elements of fixed capital goes in only to the extent of their depreciation, and thus only gradually."]

"In general, if the mass of profit is to remain the same with a declining rate of profit, the multiplier that indicates the growth in the total capital must be the same as the divisor that indicates the fall in the profit rate." (V3, p. 329)

[In this section of Volume 3 Marx explains the growth compulsion of capitalist economies roughly as follows: Technological progress and competition cause workers to be replaced by machines. But workers, not machines, are the source of profits, which means that profits tend to decline. An important way to negate this tendency is to increase the total quantity of capital so that the absolute number of workers does not decrease. Increased total capital manifests itself as economic growth.]

"... the vulgar economist does nothing more than translate the peculiar notions of the competition-enslaved capitalist into an ostensibly more theoretical and generalized language, and attempt to demonstrate the validity of these notions." (V3, p. 338)

[Marx's clearest statement about the role of the standard economist.]

"Only when the relationships that form the rate of profit have been understood will statistics be able to put forward genuine analyses of wage-rate in different periods." (V3, p. 347)

[Note the methodological approach: FIRST the understanding of relationships, THEN the gathering of statistics for detailed, empirical analysis. This is why ENL's graphs cannot be rejected on the basis that no supporting data currently exist.]

"The true barrier to capitalist production is capital itself." (V3, p. 358)

[Marx has been justifiably criticized for ignoring ecological constraints in statements such as this.]

"The genuine science of modern economics begins only when theoretical discussion moves from the circulation process [i.e. markets and exchange] to the production process." (V3, p. 455)

[Thus one of the key ideological aims of standard economics is to maintain the focus on circulation and to ignore the production process. In the words of Michael Bowe, one of my microeconomics professors: "Economics IS exchange!"]

"Even an entire society, a nation, or all simultaneously existing societies taken together, are not the owners of the earth. They are simply its possessors, its beneficiaries, and have to bequeath it in an improved state to succeeding generations ..." (V3, p. 911)

[Marx's clearest statement about the relationship between present and future humankind.]

"... instead of a conscious and rational treatment of the land as a permanent communal property, as the inalienable condition for the existence and reproduction of the chain of human generations, we have the exploitation and the squandering of the powers of the earth ..." (V3, p. 949)

"... the actual movement of competition lies outside our plan, and we are only out to present the internal organization of the capitalist mode of production, its ideal average, as it were." (V3, p. 970)

Meadows, Donella H. et al.: The Limits to Growth

If the labor theory of value is the most distorted theory in history, this is surely the most distorted study. Virtually all critics have scoffed at its doomsday "predictions," but predictions were almost totally absent from its pages. Instead, various scenarios involving population, pollution, etc. were played out, including some very optimistic ones. In 1988 Donella Meadows, the report's lead author, published a useful essay titled "Limits to Growth Revisited," where she summarized the vicious reaction the study received:

"We were attacked with equal energy from the right and the left and from the solid middle of academic economics. Mobil Oil mounted an advertising campaign to say 'Growth Is Not a Four-Letter Word.' President Richard M. Nixon asked for a thorough investigation of our group and put our publisher on his enemies list. The book was derided in the Soviet Union. Above all, the country's leading economists outdid each other in writing scathing reviews. The hostility to the book was astounding to us, and it went on for years."

The other major criticisms that were made: the study does not consider technological change, substitution to other resources, market prices, and social issues. All these charges are blatantly false, as can be verified by anyone who actually reads the study with an open mind.

Last comment: In a way the criticisms are ironic. The study identifies constraints on economic growth. If you are interested in maintaining this growth as long as possible, would you not want to understand the constraints so you can remove them? By analogy, if you race a car, would you not prize a study that showed you how to remove the current constraints on the car's speed, such as its shape and the design of its exhaust system?

"Our conclusions are:

1. If the present growth trends in world population, industrialization, pollution, food production, and resource depletion continue unchanged, the limits to growth on the planet will be reached sometime within the next one hundred years. The most probably result will be a rather sudden and uncontrollable decline in both population and industrial capacity.

2. It is possible to alter these growth trends and to establish a condition of ecological and economic stability that is sustainable far into the future. The state of global equilibrium could be designed so that the basic material needs of each person on earth are satisfied and each person has an equal opportunity to realize his individual human potential.

3. *If the world's people decide to strive for this second outcome rather than the first, the sooner they begin working to attain it, the greater will be their chances of success." (p. 29)*

"At first [in a graph] the annual consumption of chromium grows exponentially, and the stock of the resources is rapidly depleted. The price of chromium remains low and constant because new developments in mining technology allow efficient use of lower and lower grades of ore. As demand continues to increase, however, the advance of technology is not fast enough to counteract the rising costs of discovery, extraction, processing, and distribution. Price begins to rise, slowly at first and then very rapidly. The higher price causes consumers to use chromium more efficiently and to substitute other metals for chromium whenever possible. After 125 years, the remaining chromium, about 5 percent of the original supply, is available only at prohibitively high cost, and mining of new supplies has fallen essentially to zero." (p. 74)

[This was quoted at length to demonstrate the care the authors took in including issues of price and substitution. It should be added that the initial period of low and stable prices is possible only because still-abundant oil permits low grades of ore to be cheaply mined. For a sobering examination of this issue, see [Beyond Oil](#) (above).]

"Given present resource consumption rates and the projected increase in these rates, the great majority of the currently important nonrenewable resources will be extremely costly 100 years from now. The above statement remains true regardless of the most optimistic assumptions about undiscovered reserves, technological advances, substitution, or recycling, as long as the demand for resources continues to grow exponentially." (p. 75)

[Meadows has admitted, however, that she has been surprised at the rapid advances in the efficient use of resources.]

"Calculations including the known exchanges of CO₂ between atmosphere, biosphere, and oceans predict that the CO₂ concentration will reach 380 ppm by the year 2000 ..." (p. 79)

[This is the one explicit prediction in the study, although it comes from a different author. The actual CO₂ concentration in 2000 was 370 ppm (parts per million).]

"These graphs [of the various scenarios] are NOT exact predictions of the values of the variables at any particular year in the future. They are indications of the system's behavioral tendencies only." (p. 100)

"In terms of exact predictions, the output is not meaningful." (p. 102)

"... we intend to use the world model only to answer questions about behavior modes, not to make exact predictions ..." (p. 127)

"We have deliberately omitted the vertical scales and we have made the horizontal time scale somewhat because we want to emphasize the general behavior modes of these computer outputs, not the numerical values, which are only approximately known." (p. 131)

"The exact timing of these events [overshoot and system collapse] is not meaningful, given the great aggregation and many uncertainties in the model. It is significant, however, that growth is stopped well before the year 2100. ... We can thus say with some confidence that, under the assumption of no major

change in the present system, population and industrial growth will certainly stop within the next century, at the latest." (p. 132)

[Meadows later called this a "forecast," so this is another case (besides CO2 concentration in 2000) where the term "prediction" can be used without significantly distorting the authors' meaning.]

"Although the history of human effort contains numerous incidents of mankind's failure to live within physical limits, it is success in overcoming limits that forms the cultural tradition of many dominant people in today's world."

[This success is due in large part to the dynamic, adaptive nature of capitalism, plus the availability of cheap oil. The question is: will this system continue to serve humankind well in a future of unprecedented resource and pollution constraints?]

"In figure 42 [the most favorable scenario] we apply increased land yield and perfect birth control simultaneously. Here we are utilizing a technological policy in every sector of the world model to circumvent in some way the various limits to growth. The model system is producing nuclear power, recycling resources, and mining the most remote reserves; withholding as many pollutants as possible; pushing yields from the land to undreamed-of heights; and producing only children who are actively wanted by their parents. In this case the growth is stopped by three simultaneous crises. Overuse of land leads to erosion, and food production drops. Resources are severely depleted by a prosperous world population (but not as prosperous as the present US population). Pollution rises, causing a slight rise in the death rate. The application of technological solutions alone has prolonged the period of population and industrial growth, but it has not removed the ultimate limits to growth." (p. 148)

"Although we have many reservations about the approximations and simplifications in the present world model, it has led us to one conclusion that appears to be justified under all the assumptions we have tested so far. The basic behavior mode of the world system is exponential growth of population and capital, followed by collapse. As we have shown in the model runs presented here, this behavior mode occurs if we assume no change in the present system or if we assume any number of technological changes in the system." (p. 149)

[Of course, changes HAVE been made in the present system, in part as a result of Limits to Growth. Population growth has eased and resource efficiency has increased - in some cases dramatically. We need new computer runs, based on current reality and knowledge.]

"... a whole culture has evolved around the principle of fighting against limits rather than learning to live with them ... " (p. 156)

[From the social perspective, this is the real nub of the matter. The spirit of capitalism is the spirit of growth, innovation, and transcending limits. Many people have vested interests in this system, while some sincerely believe that continuing as we have is the best way for humankind to move forward. I put Bjorn Lomborg in the latter category. Others, however, believe that the dynamic growth phase of capitalism is what must now be transcended. The earth's limits are real, and they are being encountered on a daily basis. The spirit that served us in the past is unlikely to serve us well in the future. I put myself in this category.]

"... technological optimism is the most common and the most dangerous reaction to our findings from the world model." (p. 159)

"We are searching for a model output that represents a world system that is:

- 1. sustainable without sudden and uncontrollable collapse; and*
- 2. capable of satisfying the basic material requirements of all of its people." (p. 164)*

[These are precisely the aims of ENL - needs and limits.]

"Population and capital are the only quantities that need be constant in the equilibrium state. Any human activity that does not require a large flow of irreplaceable resources or produce severe environmental degradation might continue to grow indefinitely." (p. 180)

"The project was not intended as a piece of futurology. It was intended to be, and is, an analysis of current trends, of their influence on each other, and of their possible outcomes. Our goal was to provide warnings of potential world crisis if these trends are allowed to continue, and thus offer an opportunity to make changes in our political, economic, and social systems to ensure these crises do not take place." (p. 189)

[This really couldn't be any clearer. Any misrepresentations on this score are the responsibility of the reader, not the authors.]

"Entirely new approaches are required to redirect society toward goals of equilibrium rather than growth." (p. 196)

"The greatest leadership will be demanded from the economically developed countries, for the first step toward such a goal would be for them to encourage a deceleration in the growth of their own material output while, at the same time, assisting the developing nations in their efforts to advance their economies more rapidly." (p. 198)

Menger, Carl: Principles of Economics

Menger is one of the three so-called Marginalists, the others being Leon Walras and Stanley Jevons. In the 1870s they led the theoretical revolution which is at the core of today's neoclassical economics. The key to this revolution is not marginal analysis - which is applicable to any economic method, including ENL - but the theory of exchange value based on subjective valuation. Standard economics desperately needed a believable, relatively coherent alternative to the labor theory of value.

[From the introduction by Frank H. Knight] "Ricardo and the rest, followed with avidity by Marx, used crude fallacies and gross simplifications to reduce cost to quantity-of-labour." (p. 14)

[I can't blame Knight for such comments - I make similar ones about standard economics, and like Knight believe they are fully deserved.]

[Knight] "[Menger] reiterated with emphasis and copious illustrations the principle that costs are simply the values of cost-goods, which values are derived from or reflect the value of some final consumption good; and that this value, in turn, is that of the 'need-satisfaction' dependent upon a small portion of the increment of the final good in question." (p. 15)

[This is a reasonable summary of the subjective value theory. Historical footnote: the term "marginal utility" was introduced by Menger's follower, F. von Wieser.]

[Knight] *"The essential fallacy [in Menger's views] lay in following the 'classical' view that wealth, instead of income or service, is the central concept of economic activity."* (p. 25)

[One can almost see the ideological wheels turning: Businesses have to sell commodities, and it's our job to help them. Wealth is accumulated commodities - yesterday's business - so that's no good for current sales. And wealth draws attention to class differences. Yikes! Better shift attention to income and services. We've got to finally get this "classical" monkey off our backs.]

[Knight] *"The distinction between 'natural' agents and artificial, or capital goods, certainly has no general validity ..."* (p. 27)

[Standard economics abstracts away from anything it doesn't like, and then praises the result for its theoretical generality. There is an important fallacy here: that a general theory is a better theory. No - a theory is best when it is at the CORRECT level of abstraction for the subject matter at hand. More specific than this, and we lose generality that is conducive to clear thought. More general than this, and we lose essential specifics. Standard economics has great expertise in the latter.]

[Menger's book begins here.]

"... the phenomena of economic life, like those of nature, are ordered strictly in accordance with definite laws." (p. 48)

[General comment: this might be termed the "fallacy of intellectual hubris" - the belief that inductions about a system's behavior are laws the system follows. Thus there are some who believe that the universe is an expression of mathematical principles - an absurd inversion of reality best left to Plato.]

"It is clear ... that all the various forms in which human economic activity expresses itself are absent in the case of goods whose available quantities are larger than the requirements for them ... Hence they are not objects of human economy, and for this reason we call them non-economic goods." (p. 99)

[Standard economics has fully adopted this, and uses scarcity in the definition of economics itself. The PREVENTION of scarcity never enters the ambit of standard concern. Need I add that this is because, for capitalists, scarcity is essential to business, and the absence of scarcity is the absence of profit-making opportunities?]

"Value is thus the importance that individual goods or quantities of goods attain for us because we are conscious of being dependent on command of them for the satisfaction of our needs." (p. 115)

[In a nutshell, this is the subjective theory of value.]

"Value is therefore nothing inherent in goods, no property of them, but merely the importance that we first attribute to the satisfaction of our needs, that is, to our lives and well-being ..." (p. 116)

"Non-economic goods, therefore, not only do not have exchange-value ... but no value at all, and hence no use value." (p. 118)

[Menger draws this ridiculous conclusion from an artificial example involving village inhabitants and the absolute scarcity of water. I don't believe anyone has followed him on this.]

"The maintenance of our lives depends on the satisfaction of our need for food, and also, in our climate, on clothing our bodies and having shelter at our disposal. But merely a higher degree of well-being depends on our having a coach, a chessboard, etc." (p. 123)

[Menger retains the age-old distinction between necessities and luxuries, something that standard economics has since expunged - everything is now just a market commodity, irrespective of its contribution to life and health.]

"There is no necessary and direct connection between the value of a good and whether, or in what quantities, labor and other goods of higher order were applied to its production." (p. 146)

[This is true for use-value. It is false for exchange-value under capitalism.]

"But what has been said by no means excludes the possibility that stupid men may, as a result of their defective knowledge, sometimes estimate the importance of various satisfaction in a manner contrary to their real importance." (p. 148)

[Menger retains some realism - he cannot entirely abandon "intrinsic value" and commit himself completely to subjective value. A modern economist has been more carefully trained, and would not make this "mistake."]

"Labor services are only one of the factors of the production process ... Capitalists and landowners do not, therefore, live on what they take away from laborers, but upon the services of their land and capital which have value, just as do labor services, both to individuals and to society." (p. 168)

[This nicely expresses the anxiety felt by capitalists and their economists at the labor theory of value, which HAD to be vanquished.]

Mill, John Stuart: Principles of Political Economy

Mill is a kindred spirit to Alfred Marshall and John Maynard Keynes - a deeply humanistic person who was wedded to capitalism and therefore could not penetrate its inner secrets. Mill's book is included here because of its uniquely eloquent passages on the stationary state and some other topics.

"The permanent values of all things which are neither under a natural nor under an artificial monopoly depend ... on their cost of production." (p. 61)

"As commerce extends, and the ignorant attempts to restrain it by tariffs become obsolete, commodities tend more and more to be produced in the places in which their production can be carried on at the least expense of labour and capital to mankind." (p. 62)

[Mill's touch is evident in his focus on "mankind." ENL has a similar approach to trade - commodities should be produced where the resulting net human gains are the greatest.]

"Population almost everywhere treads close on the heels of agricultural improvement, and effaces its effects as fast as they are produced." (p. 84f)

"Toward what ultimate point is society tending by its industrial progress? When the progress ceases, in what condition are we to expect that it will leave mankind?" (p. 111)

"The doctrine that, to however distant a time incessant struggling may put off our doom, the progress of society must 'end in shallows and in miseries', far from being ... a wicked invention of Mr. Malthus, was either expressly or tacitly affirmed by his most distinguished predecessors... (p. 112)

"It is only in the backward countries of the world that increased production is still an important object: in those most advanced, what is economically needed is better distribution, of which one indispensable means is a stricter restraint on population." (p. 114f)

"If the earth must lose that great portion of its pleasantness which it owes to things that the unlimited increase of wealth and population would extirpate from it, for the mere purpose of enabling it to support a larger, but not a better or a happier population, I sincerely hope, for the sake of posterity, that they will be content to be stationary, long before necessity compels them to it." (p. 116)

"Even the industrial arts might be as earnestly and as successfully cultivated, with this sole difference, that instead of serving no purpose but the increase of wealth, industrial improvement would produce their legitimate effect, that of abridging labour. Hitherto it is questionable if all the mechanical inventions yet have lightened the day's toil of any human being." (p. 116)

[Marx replied as follows to the last sentence: "That is, however, by no means the aim of the capitalistic application of machinery. Like every other increase in the productiveness of labour, ... machinery is a means for producing surplus-value." (Capital, V1, p. 352) This shows the vast superiority of Marx over Mill: the latter is sentimental and superficial (if eloquent); the latter is rational, deep, and analytically incisive.]

"... I shall only indicate, among the probably consequences of the industrial and social independence of women, a great diminution of the evil of over-population." (p. 125)

[Mill at his best: an enlightened view towards women, which has over the past few decades been affirmed by the United Nations.]

"But is there nothing recognized as property except what has been produced? Is there not the earth itself, its forests and waters, and all other natural riches, above and below the surface? These are the inheritance of the human race, and there must be regulations for the common enjoyment of it. ... No function of government is less optional than the regulation of these things, or more completely involved in the idea of civilized society." (p. 148)

Pani, Narendar: Inclusive Economics

Pani is an economic journalist in Bangalore, India. His thesis is that economists should be flexible in their application of positive economic theories, applying the one that best suits a particular analytical situation. Pani applies Mahatma Gandhi's ideas and methods to the economic world, and comes up with some useful suggestions.

"As the focus of this inclusive method is on putting together models in order to understand a specific situation, its emphasis must be on the criteria to choose models rather than any particular model. It cannot be too attached to any particular set of theories. It must be willing to change models either because the situation changes or because better models become available. This inclusive method thus need not present a completely different set of economic theories. It only needs to present a different method of using economic models." (p. 27)

[Pani is describing an inclusive approach to positive economic theories - his analytical focus is on accurately predicting the results of policies. He will later couple this with a Gandhian method for choosing policies and monitoring their results, thus inserting normative considerations while avoiding a normative framework.]

"The desirable consequences for which policies need to be formulated must first be chosen." (p. 64)

[Right - we have to be explicit about this. Otherwise the default aims of increased production and consumption will be chosen.]

"The choice of what is desirable is based on a morality." (p. 65)

"The inclusiveness of the method requires that we take into account all consequences for everybody in the world." (p. 72)

[This is fundamental. ENL achieves this by considering the health consequences for humankind as a whole.]

"Understanding a particular situation may require models of market behaviour provided by neo-classical economics as well as models of class interest provided by Marxian economics." (p. 81)

"[Gandhi] grossly underestimated the ability of technology to meet rapidly growing demand through more efficient use of resources." (p. 88)

"In much of contemporary economics, the choice of questions to be asked rarely gets as much attention as the process of finding the answers to those questions." (p. 93)

"The policy maker thus has to merge the rigorous analysis of precise models with the intuitive judgements of deciding the best action, based on a combination of models, for a particular situation." (p. 102)

[Deciding the "best action" also requires a normative framework, something Pani does not consider.]

[I have reviewed this book for Feasta Review, a periodical published by the Irish sustainability group Feasta (www.feasta.org). Following are the key principles of Pani's Gandhian method, as summarized in this review:

1. Judge actions by their consequences. It is irrelevant if an action is rooted in a specific theory or ideology. What matters is its impact on people and society. "The validity or otherwise of an action would be determined by the goodness of both the action itself and its consequences." (p. 55)
2. Judge consequences by their impact on individuals operating within society. It may surprise those who decry the standard economic focus on individuals that Gandhi held a similar view. He felt that the individual, not the group, should take precedence in policy formation. However: "... the individual is not an island. He or she interacts with other individuals in a society." (p. 66)
3. Consider a policy's consequences for everyone on earth.
4. Guard against unintended consequences. It is not enough to carefully formulate and implement an economic policy. If the results are adverse, we should modify it immediately.
5. Ends cannot justify the means. If the means are not moral, the ends cannot be moral either.
6. Subjective judgments are indispensable. The aim is not to avoid subjectivity, but to improve the subjective judgments that must be made.

7. Include all factors. Part of the inclusiveness of Pani's method is a comprehensive consideration of all aspects of a situation, not just several purportedly significant ones.
8. Use participant observation as well as secondary data. The analyst cannot confine analysis to published facts and statistics. He or she must venture into the field and share the experiences of those for whom the policy is being created.
9. Resolve conflicts through bargained consensus. Gandhi strongly opposed class warfare and always strove to resolve conflict through negotiation rather than through violence or coercion.
10. Focus on local resources and the local population. That is, adhere to the principle of Swadeshi.]

Ricardo, David: On the Principles of Political Economy and Taxation

Ricardo holds a contradictory position in the history of economics. Some standard thinkers laud him for his brilliant analysis, while others openly revile him for his recognition of class conflict and his adoption of a labor theory of value, which Marx corrected and further developed. For the most part, he is treated as an embarrassing detour in the otherwise smooth development of neoclassical economics from Smith to Say to the Marginalists to austere 20th century mathematics.

"To determine the laws which regulate this distribution [rent to landowners, profit to capitalists, and wages to workers] is the principal problem in Political Economy ..." (p. 5)

[Ricardo does not substantiate this unusual stance, but it is the focus of his investigations.]

"The value of a commodity ... depends on the relative quantity of labour which is necessary for its production ..." (p. 11)

"Utility ... is not the measure of exchangeable value, although it is absolutely essential to it." (p. 11)

"There are some commodities, the value of which is determined by their scarcity alone." (p. 12)

[The last three points are all part of Marx's theory as well.]

"... from no source do so many errors, and so much difference of opinion in [political economy] proceed, as from the vague ideas which are attached to the word value." (p. 13)

[As I have indicated elsewhere, standard economics has more or less purged itself of the concept of value. This certainly curtails controversy, but it also reduces the discipline to a branch of commerce and marketing by completely abandoning scientific analysis of capitalism's systemic nature.]

"In making labour the foundation of the value of commodities ... we must not be supposed to deny the accidental and temporary deviations of the actual or market prices of commodities from this, their primary and natural price." (p. 88)

[Marx agreed.]

"... we are treating of the laws which regulate natural prices, natural wages, and natural profits, effects totally independent of these accidental causes." (p. 91)

[Like Marx, Ricardo separated the essential characteristics of capitalism - its inner forces - from their manifestations in the hurley-burley world of markets. This is another distinction that standard economics has largely abandoned.]

"Capital is that part of the wealth of a country which is used in production, and consists of food, clothing, tools, raw materials, machinery, etc. necessary to give effect to labour." (p. 95)

[Here Ricardo becomes a vulgar economist, refusing to identify the specific nature of capital in a capitalist system.]

"The natural tendency of profits is then to fall ... " (p. 120)

[Marx held the same position, and it is central to his analysis of capitalism. However, Ricardo and Marx had widely differing opinions as to why this was the case.]

"Value ... essentially differs from riches, for value depends not on abundance, but on the difficulty or facility of production." (p. 273)

[Like Bastiat and Marx: exchange-value is a measure of the social cost of production. Standard economics has jettisoned this and made exchange-value synonymous with price or the consumer's willingness-to-pay, which critically falsifies the nature of capitalism.]

"Many of the errors in political economy have arisen from errors on this subject, from considering an increase of riches, and an increase of value, as meaning the same thing ..." (p. 274)

"But these natural agents, though they add greatly to value in use, never add exchangeable value ..." (p. 285)

"[J.B.] Say constantly overlooks the essential difference that there is between value in use, and value in exchange." (p. 286)

[This has become an accepted con game in standard economics. I have attended university lectures where the professor switched meaning several times, apparently unaware of the logical inconsistencies. This continues to amaze me.]

"... the opinion entertained by the labouring class, that the employment of machinery is frequently detrimental to their interests, is not founded on prejudice and error, but is conformable to the correct principles of political economy." (p. 392)

[Today, of course, all such claims by workers are dismissed as Luddism. Earlier in the text Ricardo commendably admitted that he had been wrong on this issue, and that, "... it, therefore, becomes a duty in me to submit my present views to examination ..." (p. 386)]

Robinson, Joan: Economic Philosophy

Robinson was the archetypal heterodox economist - a radical Keynesian with some exquisite insights and devastating criticisms of conventional thought, but one who accepted the fundamental concepts of standard economics and refused to seriously consider the Marxian view of exchange-value.

"... economics itself (that is the subject as it is taught in universities and evening classes and pronounced upon in leading articles) has always been partly a vehicle for the ruling ideology of each period as well as partly a method of scientific investigation." (p. 1)

[I partly agree: standard economics has two sides - the analytical and the ideological. However, I don't believe the analytical side is scientific in any objective sense; in my view it reflects the perspective of capital.]

"... taking a particular economic system as given, we can describe the technical features of its operation in an objective way. But it is not possible to describe a system without moral judgment creeping in." (p. 14)

"One of the great metaphysical ideas in economics is expressed by the word 'value'." (p. 26)

[I find Robinson's treatment of value, especially the labor theory of value, to be superficial and snide. One of my great disappointments in economics has been to discover how poorly she treated this fundamental topic.]

"Utility is a metaphysical concept of impregnable circularity; utility is the quality in commodities that makes individuals want to buy them, and that fact that individuals want to buy commodities shows that they have utility." (p. 47)

[I have never fully grasped Robinson's claim of circularity here. Her problem is likely rooted in the fact that standard economics uses the term for both the subjective desire for, and the intrinsic value of, a commodity. This is a contradiction within the term, but I'm not sure I'd call it circularity.]

"The method by which the egalitarian element in the [classical] doctrine was sterilized was mainly by slipping from utility to physical output as the object to be maximized. A smaller total of physical goods, equally distributed, admittedly may yield more utility than a much larger total unequally distributed, but if we keep our eye on the total of goods it is easy to forget about utility. Marshall cured himself of his socialist leanings by considering the physical national income." (p. 55)

[A fascinating example of how standard economics develops and "purifies" itself.]

"The unconscious preoccupation behind the neo-classical system was chiefly to raise profits to the same level of moral respectability as wages. The labourer is worthy of his hire. What is the capitalist worthy of?" (p. 58)

"Setting the whole thing to algebra is a great help. The symmetrical relations between x and y seem smooth and amiable, entirely free from the associations of acrimony which are apt to be suggested by the relations between 'capital and labour'." (p. 59)

[This is the obvious ideological rationale for much of the mathematics used by standard economics.]

"The unit of happiness is the same kind of mirage as Ricardo's absolute value or Marx's abstract labour." (p. 68)

[The last part of this sentence shows Robinson's superficiality in relation to capitalism. There is indeed no abstract labor in the market sphere of capitalism - only the products of concrete labor are actually sold to customers. But exchange-value, based on abstract labor time, lurks just beneath the surface, where Robinson stubbornly refused to look. She dismissed all general concepts, which might explain the topography and internal structure of capitalism, as sterile metaphysical chimera.]

"New ideas are difficult just because they are new. Repetition has somehow plastered over the gaps and inconsistencies in the old ones, and the new ones cannot penetrate. It needs a bulldozer as forceful as Keynes to break a way in." (p. 80)

"The Keynesian revolution has destroyed the old soporific doctrines, and its own metaphysics is thin and easy to see through. We are left in the uncomfortable situation of having to think for ourselves." (p. 98)
[There's got to be another way!]

"The very nature of economics is rooted in nationalism." (p. 124)
[ENL thus takes humankind as its subject wherever possible.]

"If the question is once put: Would a greater contribution to human welfare be made by an investment in capacity to produce knick-knacks that have to be advertised to be sold or an investment in improving the health service? it seems to me that the answer would be only too obvious; the best reply that laissez-faire ideology can offer is not to ask the question." (p. 138)
[The great virtue of a normative framework like ENL is that it exposes all the embarrassing questions that standard economics has gone to such extraordinary lengths to hide.]

"The first essential for economists ... [is] ... to combat, not foster, the ideology which pretends that values which can be measured in terms of money are the only ones that ought to count." (p. 147)

Ruskin, John: Munera Pulveris - Six Essays on the Elements of Political Economy

John Ruskin had many faults as an economic thinker. He was paternalistic, ignorant of capitalism, too close to the religious fanatic Thomas Carlyle, and he shared the vicious ethnocentrism of his Victorian contemporaries. Despite all this, he approached economics with a profound morality and got two things absolutely right: intrinsic value and effectual value. Here's my prediction: if humankind ever develops a normative economic framework to guide it to a just and sustainable future, these two concepts will be at its center. They are certainly at the core of ENL.

("Munera pulveris" means "the gifts of the dust." I don't know what this is supposed to signify.)

"... the modern political economists have been, without exception, incapable of apprehending the nature of intrinsic value at all." (p. 149)

"It is not the object of political economy to increase the numbers of a nation at the cost of common health or comfort; nor to increase indefinitely the comfort of individuals, by sacrifice of surrounding lives, or possibilities of life." (p. 164)

"... the wisdom and folly of the accumulation can only be determined by our having first clearly stated the aim of all economy, namely, the extension of life." (p. 165)

"'Value' signifies the strength, or 'availing' of anything towards the sustaining of life, and is always twofold; that is to say, primarily, INTRINSIC, and secondarily, EFFECTUAL." (p. 170 - capitals in the original)

"Intrinsic value is the absolute power of anything to support life." (p. 170)

"The production of effectual value ... always involves two needs: first, the production of a thing essentially useful; then the production of the capacity to use it. Where the intrinsic value and the acceptant capacity come together there is effectual value, or wealth; where there is either no intrinsic value, or not acceptant capacity, there is no effectual value; that is to say, no wealth." (p. 171)

"Economy does not depend merely on principles of 'demand and supply,' but primarily on what is demanded, and what is supplied." (p. 198)

"Cost is measured ... only in 'labor,' not in 'opera.' It does not matter how much work a thing needs to produce it; it matters only how much distress." (p. 204f)

[Ruskin is referring to human cost, not capitalist cost. "Labor" means "suffering in effort," while "opera" means life-affirming effort. Early in the development of ENL I tried to use this distinction directly by defining "work" as life-affirming labor and "toil" as life-destroying labor. For analytical coherence, I have since replaced this with the single concept of labor cost, which can be positive ("toil") or negative ("work").]

"But the law of life is, that a man should fix a sum he desires to make annually, as the food he desires to eat daily; and stay when he has reached the limit, refusing increase of business, and leaving it to others, so obtaining due freedom of time for better thoughts." (p. 302)

Say, Jean-Baptiste: A Treatise on Political Economy

Say is the first significant economic thinker to "correct" the errors Adam Smith made in espousing a simple labor theory of value and in exposing the collusion and abuses of manufacturers (early capitalists). This process of winnowing and purification would go on well into the 20th century. Say is theoretically quite weak, and Marx vilified him for repeatedly confusing use-value and exchange-value. Nevertheless, Say had a profound concern for the poor, and a genuine belief that capitalism would be their salvation.

Reading Say has convinced me that we should identify two types of conservative thinkers: those who support capitalism for their own gain and to suck up to power, and those who sincerely believe that it is humankind's best hope. Say is in the latter category.

"Political economy has only become a science since it has been confined to the results of inductive investigation." (p. xxxvi)

[Say rejected normative thought and placed economics firmly on the path to becoming a positive (empirical, objective) discipline. As I have stated elsewhere, this is of critical importance for capitalists, for it permits their objectives - growth and profits - to slip by unexamined.]

"To the labour of man [Adam Smith] ascribes the power of producing values. This is an error." (p. xi)
[Thus begins the attack on the labor theory of value, and the sharp divergence between standard thinkers and the Ricardo-Marx branch.]

"The haggardness of poverty is everywhere seen contrasted with the sleekness of wealth, the extorted labour of some compensating for the idleness of others, wretched hovels by the side of stately colonnades, the rags of indigence blended with the ensigns of opulence; in a word, the most useless profusion in the midst of the most urgent wants." (p. l (letter "L"))
[Eloquent, heart-felt, and completely beyond the scope of modern economic expression.]

"Persons, who under a vicious order of things have obtained a competent share of social enjoyments, are never in want of arguments to justify to the eye of reason such a state of society ... Accordingly, opinions in political economy are not only maintained by vanity, the most universal of human infirmities, but by self-interest, unquestionably not less so; and which, without our knowledge, and in spite of ourselves, exercises a powerful influence over our mode of thinking." (p. li)

"Some items of human consumption are the spontaneous gifts of nature, and require no exertion of man for their production; as air, water, and light, under certain circumstances. These are destitute of exchangeable value; because the want of them is never felt, others being equally provided with them as ourselves. Being neither procurable by production, not destructible by consumption, they come not within the province of political economy." (p. 63)

[Say is right about exchange-value under capitalism, but of course disastrously wrong that nature cannot be destroyed by consumption. Ecologically speaking, this is the "original sin" of standard economics.]

"... the indefinite latitude allowed to industry to occupy at will the unappropriated natural agents, opens a boundless prospect to the extension of her agency and production. It is not nature, but ignorance and bad government, that limit the productive powers of industry." (p. 77)

[Substitute "capital" for "ignorance and bad government," and we have Marx's view. As many commentators have correctly pointed out, the capitalist and Marxist perspectives on the infinite bounty of nature are basically the same.]

"The sole point is, to weigh the loss, occasioned to the consumer by his consumption, against the satisfaction it affords him." (p. 397)

[This is essentially ENL's concept of economic well-being.]

"... the most judicious kinds of consumption seem to be ... Such as conduce to the satisfaction of positive wants; by which term I mean those, upon the satisfaction of which depends the existence, the health, and the contentment of the generality of mankind; being the very reverse of such as are generated by refined sensuality, pride, and caprice." (p. 397)

[And this is essentially intrinsic value and effectual value.]

"The luxury of ostentation affords a much less substantial and solid gratification, than the luxury of comfort ... Besides, the latter is less costly, that is to say, involves the necessity of smaller consumption; whereas the former is insatiable; it spreads from one to another, from the mere proneness to imitation; and the extent to which it may reach, is as absolutely unlimited." (p. 397)

"Frequent changes of fashion are unwise ..." (p. 398)

"Most men yield to the torrent, and rush on ruin with their eyes open, in search of happiness; although it requires a very small share of philosophy to see that madness of this course, and to perceive, that, when once the common wants of nature are satisfied, happiness is to be found, not in the frivolous enjoyments of luxurious vanity, but in the moderate exercise of our physical and moral faculties." (p. 409)

"False principles are more fatal than even intentional misconduct; because they are followed up with erroneous notions of self interest, and are long persevered in without remorse or reserve." (p. 415)

"The whole skill of government ... consists in the continual and judicious comparison of the sacrifice about to be incurred, with the expected benefit to the community ..." (p. 416)

[The goal of ENL is to develop the analytical tools to permit governments to do precisely this.]

Schumacher, E.F.: Small is Beautiful

The book's title is catchy, but it's a publishing gimmick - Schumacher supported appropriate scale, which could be large or small depending on circumstances. The essence of this set of essays is not smallness, but the necessity to specify an economy's aims, to make them modest, and to observe ecological limits in meeting them.

The book has several unfortunate aspects: it misrepresents Limits to Growth, places the responsibility for defining an economy's aims in the realm of metaphysics, completely misconstrues the labor theory of value, uses the term "natural capital," and - most importantly - never moves beyond useful generalities to analytical concepts. The task of the current generation is to develop and apply these.

"One of the most fateful errors of our age is the belief that 'the problem of production' has been solved. (p 13)

[True - this is a great opening sentence.]

"... we are estranged from reality and inclined to treat as valueless everything that we have not made ourselves. Even the great Dr. Marx fell into this devastating error when he formulated the so-called 'labour theory of value'." (p. 15)

[When Schumacher says "valueless" he is presumably talking about use-value. Marx was referring to exchange-value, and then only as capitalism measures it, not as he wished it to be. Furthermore, Marx explicitly credited nature with creating use-value. The errors here are entirely Schumacher's.]

"Let us take a closer look at this 'natural capital' ..." (p. 15)

[Schumacher had the sense to enclose "natural capital" in quotes - indicating that it's a metaphor. Later, environmentalists and ecological economists would drop the quotes and the metaphorical usage, and

transform "natural capital" into a foundational concept - an egregious error that has destroyed analytical clarity for a generation.]

"What is 'enough'?" (p. 25)

[In three words, one of the most critical problems of the current age. Standard economics ignores the question. Ecological economics gives us half an answer by telling us what is too much. ENL explicitly answers it - when human health has been maximized, subject to threshold constraints.]

"... nothing can be proved about the future ... - it is always possible to dismiss the most threatening problems with the suggestion that something will turn up." (p. 29)

"... man is far too clever to be able to survive without wisdom." (p. 33)

[Profoundly true and crisply stated. This is very similar to Ronald Wright's message in A Short History of Progress (below).]

"The exclusion of wisdom from economics, science, and technology was something which we could perhaps get away with for a little while, as long as we were relatively unsuccessful; but now that we have become very successful, the problem of spiritual and moral truth moves into the central position." (p. 34)

"We must study the economics of permanence. Nothing makes economic sense unless its continuance for a long time can be projected without running into absurdities. There can be 'growth' towards a limited objective, but there cannot be unlimited, generalised growth." (p. 34)

"The cultivation and expansion of needs is the antithesis of wisdom. ... Only by a reduction of needs can one promote a genuine reduction in those tensions which are the ultimate causes of strife and war." (p. 34)

"But what is wisdom? Where can it be found? Here we come to the crux of the matter: it can be read about in numerous publications but it can be found only inside oneself. To be able to find it, one has first to liberate oneself from such masters as greed and envy. The stillness following liberation - even if only momentary - produces the insights of wisdom which are attainable in no other way." (p. 39)

[This makes no sense to me - we can't wait for millions of individuals to achieve personal enlightenment. We need a restructured economics - a public guide to wise action.]

"The trouble about valuing means above ends ... is that it destroys man's freedom and power to choose the ends he really favours; the development of means, as it were, dictates the choice of ends." (p. 54)

[Numerous progressives have pointed this out: the tail wags the dog. The time has now come to move beyond this basic insight and to develop a normative economic framework to help us define the objectives we really favor.]

"... since consumption is merely a means to human well-being, the aim should be to obtain the maximum of well-being with the minimum of consumption." (p. 61)

[And the only way to achieve this is to define human well-being in objective, measurable terms, as with physical health in ENL.]

"From the point of view of Buddhist economics, therefore, production from local resources for local needs is the most rational way of economic life ..." (p. 62)

[I consider this a "pet solution." Whether production is local or remote should follow from fundamental economic principles, but should not be a principle itself. In this I differ from many environmentalists and activists.]

"Non-renewable goods must be used only if they are indispensable, and then only with the greatest care and the most meticulous concern for conservation." (p. 64)

[Exactly right - hence the absolute imperative (irrespective of scarcity) to maximize ecological efficiency in ENL.]

"What I wish to emphasise is the duality of the human requirement when it comes to size: there is no single answer. For his different purposes man needs many different structures, both small ones and large ones ..." (p. 70)

"If [economics] cannot get beyond its vast abstractions .. [and] make contact with the human realities of poverty, frustration, alienation, despair, breakdown, crime, escapism, stress, congestion, ugliness, and spiritual death, then let us scrap economics and start afresh." (p. 80)

[Much as I like the idea of starting economics afresh, Schumacher has done a disservice here by loading too much social responsibility onto the discipline. The subject matter of any economics is human allocation, production, and distribution. Let's get these right, but let's not presume to solve crime and alienation in the process.]

"The task of our generation, I have no doubt, is one of metaphysical reconstruction." (p. 106)

[To some extent, I agree - we have to move from dependence on growth to a recognition of limits. We have to learn humility and "enoughness." But this reconstruction requires intellectual support - a normative economic framework. Economic concepts and moral reconstitution go hand in hand.]

"There are always some things which we do for their own sakes, and there are other things which we do for some other purpose. One of the most important tasks for any society is to distinguish between ends and means-to-ends, and to have some sort of cohesive view and agreement about this." (p. 111)

[This to me is the core of Schumacher's message, and I agree wholeheartedly.]

"The ideal of industry is to eliminate the living factor, even including the human factor, and to turn the productive process over to machines." (p. 117)

[No – it is the ideal of CAPITALIST industry is to do this, as explained by Marx in Capital. This is the sort of general statement that sounds profoundly true, but is in fact misleading.]

"The most striking thing about modern industry is that it requires so much and accomplishes so little. Modern industry seems to be inefficient to a degree that surpasses one's ordinary powers of imagination. Its inefficiency therefore remains unnoticed." (p. 125)

[Another brilliant opening statement. This would in all likelihood be confirmed by the four types of efficiency defined in ENL.]

"... the group's conclusions [Club of Rome analysts in Limits to Growth] derive from its assumptions, and it does not require more than a simple act of insight to realise that infinite growth of material consumption in a finite world is an impossibility." (p. 129)

[This is part of Schumacher's misrepresentation of the much-abused study, which aimed to examine the interactions among key social and economic factors, and to determine the behavior modes (sudden collapse, fluctuating stability, etc.) of a society as growth continued. Such conclusions cannot be drawn from "a simple act of insight."]

"The primary task of technology, it would seem, is to lighten the burden of work man has to carry in order to stay alive and develop his potential." (p. 157)

[But this is not the CAPITALIST task of technology, as Marx forcefully pointed out. See, for example, his comment on J.S. Mill (above). Unless we can clearly distinguish between human ends and capitalist ends, we have absolutely no hope of understanding our predicament and finding a way out.]

"The type of work which modern technology is most successful in reducing or even eliminating is skilful, productive work of human hands, in touch with real materials of one kind or another." (p. 158)

[For an eloquent discussion of this topic, see Labor and Monopoly Capital: The Degradation of Work in the Twentieth Century, by Harry Braverman.]

"In a sense, everybody believes in growth, and rightly so, because growth is an essential feature of life. The whole point, however, is to give to the idea of growth a qualitative determination; for there are always many things that ought to be growing and many things that ought to be diminishing." (p. 167)

[ENL's graphs can help determine what should be growing and what should be shrinking.]

"I have no doubt that it is possible to give a new direction to technological development, a direction that shall lead it back to the real needs of man, and that also means: to the actual size of man. Man is small, and, therefore, small is beautiful." (p. 169)

Sen, Amartya: Development as Freedom

For an economic thinker, there are two broad strategies for achieving progressive economic change: interpret standard economics progressively, and develop a new economic framework. I have chosen the second strategy, while Sen has chosen the first. In accordance with this strategy, he attempts to revive the progressive tradition in conventional economic thought, particularly the left-leaning statements of Adam Smith. This is probably an effective approach to the immediate issues of third-world development, which is Sen's chief aim, but I don't believe it will suffice to move our civilization into the sustainable phase of its historical evolution.

"Development consists of the removal of various types of unfreedoms that leave people with little choice and little opportunity of exercising their reasoned agency." (p. xii)

"Without ignoring the importance of economic growth, we must look well beyond it." (p. 14)

"... no famine has ever taken place in the history of the world in a functioning democracy ..." (p. 16)
[This is a stunning statement - for me one of the book's real revelations.]

"The focusing on the quality of life and on substantive freedoms, rather than on income or wealth, may look like something of a departure from the established tradition of economics, and in a sense it is But in fact these broader approaches are in tune with lines of analysis that have been part of professional economics from the beginning." (p. 24)

[Here Sen begins his historical revisionism - an urgent necessity, given the highly conservative interpretations and distortions of recent times.]

"... life expectancy does indeed have a significantly positive correlation with GNP per head, but ... this relationship works mainly through the impact of GNP on (1) the incomes specifically of the poor and (2) public expenditure particularly in health care. In fact, once these two variables are included on their own in the statistical exercise, little extra explanation can be obtained from including GNP per head as an additional causal influence. ... The basic point is that the impact of economic growth depends much on how the fruits of economic growth are used." (p. 44)

"The quality of life can be vastly raised, despite low incomes, through an adequate program of social services." (p. 49)

"The mental metric of pleasure or desire is just too malleable to be a firm guide to deprivation and disadvantage." (p. 63)

[Correct - which is why ENL rejects a subjective standard of value and cost.]

"... interpersonal comparisons [are] central to any social evaluation." (p. 77)

[Again - why ENL rejects a subjective standard.]

"... it is hard indeed to see how any reasonable critic could be against the market mechanism as such. ... The overall achievements of the market are deeply contingent on political and social arrangements." (p. 142)

"Financial conservatism should be the nightmare of the militarist, not of the schoolteacher or the hospital nurse." (p. 145)

"In a democracy, people tend to get what they demand, and more crucially, do not typically get what they do not demand." (p. 156)

"People suffer from hunger when they cannot establish their entitlement over an adequate amount of food." (p. 162)

"What we are looking at here [the fast progress of some Asian economies] is not so much the social consequences of economic reforms, but the economic consequences of social reforms. The market economy flourishes on the foundations of such social development." (p. 259)

"The big challenges that capitalism now faces in the contemporary world include issues of inequality (especially that of grinding poverty in a world of unprecedented prosperity) and of 'public goods' (... such as the environment). The solution to these problems will almost certainly call for institutions that

take us beyond the capitalist market economy. But the reach of the capitalist market economy itself is, in many ways, extendable by an appropriate development of ethics sensitive to these concerns." (p. 267)

[I largely agree with this assessment: much can be done under capitalism, but it will probably be necessary to transcend it.]

"The environmental challenge is part of a more general problem related to resource allocation involving 'public goods,' where the commodity is enjoyed in common rather than separately by one consumer only." (p. 269)

[This is one area where Sen is superficial and unconvincing, and where his adherence to standard economic principles probably limits his vision. The environmental problem is much more than a "public goods" issue.]

"... it is important to dispute the common description of Adam Smith - the father of modern economics - as the single-minded prophet of self-interest." (p. 271)

[Many other progressive thinkers, such as Noam Chomsky, have now started to paint a broader picture of Smith. I should add that Marx took William Petty to be the "father of Political Economy" (Capital, V1, p. 259), and he probably has a better claim to it. Sen's statement strikes me as a sop to standard thinkers - as the price of his admission to the club.]

Singh, Narindar: Economics and the Crisis of Ecology

This wonderful, angry book is a *cri de coeur* against the ecological ignorance and theoretical pretensions of standard economics, by a third-world economist from Jawaharlal Nehru University in New Delhi, India. It contains one of my favorite sentences: "Survival does not necessitate a return to primitivity but a civilized accommodation to nature."

Singh's chapter headings tell a story:

1. Intimations of Mortality
2. Conditioned Naivetes of the Reigning Orthodoxy
3. Neo-Mercantilism and the Remorseless Attrition of the Human Habitat
4. Economics and the Ideology of Conservatism
5. Theoretical Pretense
6. Towards an Alternative Paradigm
7. Imperatives of Survival
8. Ecology and Heresy

"... economics can do little better perhaps than to make ecology its central concern. But it is obvious also that, as developed by the neoclassicists at least, it can do nothing of the kind." (p. xix)

"The crisis of ecology, then, is due primarily to a fundamental malstructuring of ... man's system of production which cannot even exist without demand stimulation." (p. xxii)

"... the destruction alike of exhaustible and renewable resources brings about a sea-change in the nature of the economic problem itself which in turn would require a complete alteration in the fundamentals of economic philosophy." (p. xxiii)

[Precisely - this is why ENL is a new framework on a new foundation. It cannot be otherwise today.]

"There must indeed be something fundamentally irrational about a system which in order to cater to the dysfunctional wants of the world's few has of necessity to deny to increasing millions a mere chance to live as humans." (p. xxiv)

"But it is not good positive economics, as academics see it, to play the spotlight on the nature of what is being produced. ... This is exactly the reason why it is singularly ill-equipped to undertake an in-depth analysis of the crisis of our ecology which is due primarily to the nature of a good deal of the output of modern industry." (p. xxiv)

[This is why intrinsic value and effectual value are central to ENL, and why they will be so difficult to re-establish in the economic firmament.]

"... the view taken here is that the crisis of ecology is not a question of mere negative externalities, but is inherent in the very logic of profit-making ... " (p. xxv)

"To be able to study the existing reality in any meaningful manner therefore one must seek to transcend the confines of economic orthodoxy and develop an alternative system of explanation." (p. xxvi)

[This is the purpose of ENL, at least in the normative realm.]

"The crisis of ecology is essentially a moment of truth from which the nations must learn to acknowledge the bankruptcy of the old system and to create the framework of a new economic order." (p. 9)

"Schumpeter's was a world, perhaps, of 'creative destruction'. Our is a universe of destructive creation. For in a very deep sense, indeed, creativity of modern business, which thrives on a remorseless misappropriation of natural resources through an endless spawning of useless products and their ever-changing 'models', is itself destruction, pure and simple." (p. 10)

"... what distinguishes the present crisis is its global dimensions. From a phenomenon with purely localized manifestations it has already become massive enough to threaten the terrestrial totality itself." (p. 12)

[By extrapolating optimistically from the past (see Julian Simon, below), standard economists fail to recognize this dangerous discontinuity in human experience.]

"The very imperative of self-preservation therefore obliges us to create a viable order, for although we may not all agree on the bonum we must strive for, we certainly know that our own destruction is the malum we must avoid." (p. 12)

[In my view, unless we broadly define the *bonum*, we will not be able to avoid the *malum*.]

"It is to the petrochemical industry, then, and not to an amorphous 'growth' that we must look in order to comprehend the fundamental reason why there has been such a serious accentuation in the crisis of ecology in recent years." (p. 16)

[This and the next quote were heavily influenced by Barry Commoner (see above).]

"... Profit, Petrochemistry, and Pollution may well be designated as the Trinity of the high capitalism of today." (p. 17)

"But whereas growth has concentrated all its ersatz benefits towards the top of the human pyramid, and all the costs towards its base, development to be at all viable would require a society which is a pyramid no more. Survival does not necessitate a return to primitivity but a civilized accommodation to nature." (p. 19)

[Singh quotes the following wonderful illustration from Paul Baran's The Political Economy of Growth: *"Assuming, indeed, that the life of the cannibals fully conforms to the precepts of their society, that their headman gets exactly as many scalps a year as are called for by his wealth, his status, and his connections, and that all the other cannibals consume exactly the number of foreigners that corresponds to their marginal productivity and never in any other way but through a free purchase in a free market: do we then have a state of an optimum, can we then say that the cannibals' welfare is well looked after? It should be obvious that nothing of the sort follows. All we have established is that the practice of the cannibalistic society corresponds more or less fully to the principles evolved by that society. We have said nothing at all about the validity or rationality of these principles themselves or about their relation to human welfare." (p. 23)*

[Thus, we cannot trust the logic of capitalism, but must establish an independent logic that bears DIRECTLY on human welfare. This is fundamental to ENL.]

"Poverty, Barry Commoner has written, is a luxury that the human race would have to forgo if it is to survive." (p. 37)

"Expansion in a historical perspective, secured through the exploitation of colonies and relentless destruction of global ecology, has enabled [world capitalism] to conceal from the working classes within the metropolises the fact of their own exploitation." (p. 51)

"Being regularly discarded prematurely, consumer durables are durable no more. They have been replaced by durable consumers." (p. 54)

"... the very survival of the corporate system is contingent upon the adoption of high consumption as a way of life." (p. 55)

[Singh quotes this from Vance Packard's The Waste Makers, who in turned quoted the Journal of Retailing:]

"Our enormously productive economy ... demands that we make consumption our way of life, that we convert the buying and use of goods into rituals, that we seek our spiritual satisfactions, our ego satisfactions, in consumption ... We need things consumed, burned up, worn out, replaced, and discarded at an ever increasing rate." (p. 56)

"... corporate capitalism must try to fight gluts through gluttons ..." (p. 58f)

"The transcendental purpose, completely overshadowing every other consideration, is to involve men in work and avoid any violence to the delicate balances of nature." (p. 73)

"In order ... to avoid raising questions which would make explicit the precise limitations of profit-making, economists resort to trivial diversions from serious questions. But this ... obliges them to eschew all concern with the reprehensible 'ought' for the sake of the inviolable 'is'." (p. 80)

[Positive economics is inherently conservative because it takes the world as it is. ENL is a normative framework to counteract this narrow conservative focus and to draw attention to critical human issues. It is unfortunate that Singh, like virtually all other progressive thinkers today, does not draw this same conclusion - that a normative framework of our own making is the overwhelming intellectual requirement.]

"We do not really rid ourselves of ideology and valuation merely by choosing to remain silent about them." (p. 87)

"To dispel ambiguity in debate therefore one must state one's value premises in as categorical and unequivocal a manner as possible and demand that others state theirs. Only thus, moreover, can social science be given purpose and direction." (p. 92)

[Precisely. This is why ENL states its economic goal and its standard of value and cost, and does not pretend that the tools it develops are meaningful outside the scope of these assumptions.]

"... the inordinate aridity of the concept of marginal utility ..." (p. 102)

[Singh makes a crucial error in this part of the book, one also made by several of my critics. The use of marginal quantities in economics to determine optimal behavior is not a neoclassical plot. Rather, it reflects the strategy of life – it is a driving force in the behavior of all biological entities. The problem does NOT lie in the marginal analysis of quantities, but in the quantities that are marginally analyzed. Singh does not make this distinction, thereby trashing marginality in general and potentially robbing the normative framework we require of its essential analytical tool.]

"But bourgeois heterodoxy suffers from a fatal weakness in so far as it always stops short of challenging and criticizing the system itself." (p. 104)

[This is the rot at the core of most heterodox economic theories. These typically accept the neoclassical precepts of standard economics and then interpret and use them progressively. This progressive behavior, however, masks the capitalist bias built into the basic concepts, a reality the practitioners quickly lose sight of.]

"... the assumptions of economics ... become unrealistic not when they simplify reality which they must, but when they distort it which they must not." (p. 112)

[The economics professors I have encountered were extremely keen to impress on students the necessity to simplify reality in their models and theories, but categorically rejected any suggestion that their abstractions might be distorting reality.]

"But since economic theory is loath to raise such awkward questions, it has little option but to focus on circularities. Indeed, all the academic ado about scarcity and maximization is only an animated pursuit of tautology." (p. 126)

"It is in this way, then, that Scarcity and Maximization became the twin deities of standard economics and Opportunity Cost its incantatory spell." (p. 128)

[Even progressive thinkers are completely intoxicated by the spell of opportunity cost, which I believe is the most profoundly ideological and destructive concept in standard economics.]

"... the purpose of economic theory is to make those who are comfortable feel comfortable. Economic theory, in other words, seeks to engender faith in the legitimacy and viability of the prevailing order itself. It is intended to be a sedative but is claimed to be a science." (p. 130)

"One has no option therefore but to try to develop an alternative conception of reality." (p. 130)
[This alternative conception, I believe, must be developed through the use of a normative framework like ENL and a positive framework based largely on Marx's economic concepts.]

"In fact, the very logic of our situation demands that economics become primarily an essay in political criticism. A plea for a relevant economics is above all a plea for a radical politics." (p. 145)
[This statement, in Singh's concluding chapter (ironically titled "Towards an Alternative Paradigm"), is a non sequitur. New normative and positive economic frameworks MUST be developed (as noted after the previous quote), and these will feed an effective political critique. To abandon economic logic in GENERAL because the CURRENT economic logic is suicidal is bereft of logic and strategic insight.]

"Evidently, a non-trivial dialogue can proceed at all only if the focus is kept consistently on the human habitat." (p. 177)

"In fact, the energy-intensity of unpaid-for luxury is a major source of ecological disruption today." (p. 193)

"... the orgies of militarism and consumerism today ought to be the central concern of economists ..."
(p. 194)

"... what the Industrial Revolution did was not so much to release the forces of production as to unleash the forces of disposal." (p. 213)

"... when the economy is a process instituted for the sake of consumption and social provisioning, production is more or less a well-defined activity generating use-values. ... There are built-in physical limits to production as a genuine, need-satisfying activity. It is only when need-satisfaction is replaced by the accumulation of exchange-value as the predominant economic concern of the dominant class that selling replaced production as the primary economic pursuit of the society in question." (p. 215)
[This is important and true, but lacks historical context. The accumulation of exchange-value - that is, capitalism - has permitted humankind to break the bonds of a restricted, primitive existence and to strive for its potential. This system now threatens our survival. The proper conclusion is not to blame capitalism (which is pointless), but to accept the likelihood that it must be transcended as humankind strives to meet the economic objectives specified by its normative framework.]

"For it was the bourgeoisie which brought about a societal transformation which even its would-be-grave-diggers have sought only to mimic and to ape but never to transcend. And, to my mind, this alone bespeaks one of the profoundest tragedies in the history of our race." (p. 220)

[I greatly sympathize with this heartfelt assertion, but it is somewhat misguided from today's perspective (Singh wrote this in 1989, when the Soviet Union had not yet collapsed). First, it is doubtful that the would-be-grave-diggers had a realistic alternative to full-scale industrialization, given the threat from the capitalist West. Second, the real tragedy is that in the 15 years since socialism ceased to be a major historical force, progressive intellectuals have not transcended the limitations of standard economics by

formulating a normative framework and rediscovering the analytical power of Marx's economic thought. As the years tick by, this intellectual gap grows deeper and its consequences become more serious. Future historians will, I fear, look back with dismay at how slow progressive intellectuals were to apprehend the new world order and to create new analytical tools to address it.]

"In the light of all this, we would have no option but to keep under constant focus the fundamental as also the macabre novelty of our situation, which lies in the fact that we cannot assume any longer that we will continue to exist as a species." (p. 221)

[Dark but accurate.]

Simon, Julian L.: The Ultimate Resource 2

This is the cornucopian's bible, and cornucopianism is one of the tenets of the capitalist faith. (This book was supported by the Cato Institute, a true pillar of capitalist ideology.) You either love what Simon says, or you hate it. Herman Daly hates it and chides Simon several times in For the Common Good for disseminating resource fantasies. Bjorn Lomborg loves it - Simon's book served, according to Lomborg himself, as the primary inspiration for The Skeptical Environmentalist. But even if you're among the haters, there is an important lesson to be learned from Simon: his argument is based on respect for humankind and human life - values he states explicitly. This support of humankind must also be the basis of a new economic framework - not anti-capitalism, anti-growth, or anti-pollution. We must fight one positive vision with another positive vision, but we must inform ours with considerably more wisdom.

"... there is an unfortunate tendency for purveyors of majority thinking and members of popular organizations to indict everyone who does not agree with them as callous to human suffering, lacking compassion for poorer persons, and indifferent to nature." (p. xxxvi)

[I agree. Such people fail to distinguish between the two types of conservatives. (See my comments on J.B. Say, above.)]

"... the policies of freedom and enterprise under the rule of wise laws ... are the heart of the book's prescriptions." (p. xxxvii)

"The common assertions that resources are growing more scarce, that environmental conditions are worsening, and that the poor suffer from economic freedom are the gravest danger to the poor and the environment. And many of the government interventions that are predicated on these false assertions constitute fraud because they benefit only the well-off and the vested interests ..." (p. xxxvii)

"... population growth, along with the lengthening of human life, is a moral and material triumph ..." (p. xxxvii)

[My view is that population is outside the scope of morality – it is a decision to be left to each society's unique needs and culture. What IS a moral triumph is the increased longevity and overall well-being of the population a society decides to support.]

"Adding more people to any community causes problems, but people are also the means to solve these problems. The main fuel to speed the world's progress is our stock of knowledge, and the brake is our

lack of imagination. The ultimate resource is people - skilled, spirited, hopeful people - who will exert their wills and imaginations for their own benefit as well as in the spirit of faith and social concern." (p. xxxviii)

[This is beautifully stated, and the core of Simon's approach. However, it contains fatal errors. Adding more people can certainly help a community - to a point. Population is a subtle optimization, not the crude maximization Simon suggests. As well, the imagination of potentially skilled and hopeful people is often crushed under the realities of an exploitive capitalism. Simon, like George W. Bush, only speaks in panegyrics about an ideal world of freedom, never about the brutal arrogance of elites and the destructive policies they foster.]

"The appropriate measures of scarcity (the costs of natural resources in human labor and their prices relative to wages and to other goods) all suggest that natural resources have becoming less scarce over the long run, right up to the present." (p. 3)

[This is a fairy tale. As forcefully established by the authors of Beyond Oil (above), fewer humans can be employed because those few are massively assisted by technologies based on cheap oil, which is disappearing fast. Market prices are ludicrously skewed by externalizations and subsidies. The ecological measure of scarcity - the energy cost of extracting resources - is the most objective and prudent, and this clearly indicates a secular rise in resource scarcity.]

"The new theory that is the key idea of this book - and is consistent with current evidence - is this: Greater consumption due to an increase in population and growth of income heightens scarcity and induces price run-ups. A higher price represents an opportunity that leads inventors and business-people to seek new ways to satisfy the shortages. Some fail, at cost to themselves. A few succeed, and the final result is that we end up better off than if the original shortage problems had never arisen." (p. 12)

[This is the general mechanism of capitalism, and it is the reason that capitalism evolved historically to permit humankind to exploit resources, innovate, increase production, and improve lives. What the cornucopians deny - and where their unwisdom reigns supreme - is that this mechanism fully applies only during a brief, unique phase in human history, which is now coming to an end. We will NEVER again have the cheap oil that capitalism found on the planet when it began its upward march in the 1500s. We will NEVER again have the clean air and waters into which capitalism initially dumped its wastes. The West will NEVER again "discover" the Americas, appropriate already-discovered resources, and utilize a vast reservoir of human labor.]

"All now agree that the 1980s forecast of the sea rising many inches or feet due to global warming are nonsense." (p. 188)

[Very few agree, and the seas are rising.]

"Conservation - or just nonuse of given materials - is a moral issue for some people, about which it is inappropriate to argue." (p. 287)

[True - I've run into this attitude myself. My attempt in ENL to rationally approach resource use has been dismissed by some critics simply because human rationality should not apply to nature. This is a dangerous and fanatical extremism.]

"Where costs do not settle the issue, the decision about what is conserved, and how much, is a matter of tastes and values." (p. 293)

[Progressives have no good answer to this unless we build a coherent economic framework that defines "costs" from the human perspective. Simon several times challenges his opponents to come up with an alternative economic framework, and he's entirely justified in doing so. As my former trade professor at Simon Fraser University, Steve Easton, asked me when I got too frisky: "Where's your model?" This simple question has haunted me for almost 15 years.]

"... our descendants may well be better off if we use the resources in question right now to build a higher standard of living instead of refraining from their use." (p. 293)

[I agree with this in principle, although capitalist logic rarely takes our descendants into account.]

"Persons who are not economists - and perhaps especially those persons such as biologists who work with entities other than human beings - may underestimate the likelihood that people and organizations will make characteristically human adjustments to daily life and society. Such persons may then have too little faith in the adjustment capacities of human beings. Concepts that are appropriate for nonhuman organisms - niche, carrying capacity, etc. - are inappropriate for the creative aspect of human beings which is the central element in long-run economic activity." (p. 298)

[It is true that human beings are remarkably resilient and ingenious creatures, and this deserves to be emphasized. But I agree with the ecologists and environmentalists that we are ALSO biological creatures on a finite planet, and that sooner or later the limits will likely overwhelm all our marvelous creativity. The real question is not which of these perspectives is "correct," but this: GIVEN that we are the adaptive creatures Simon describes, and GIVEN that we are biological creatures on a finite planet, what is our WISEST course of action at the present time? To answer this we must dispense with extremism of any kind - Simon's, conservationists' - and develop a rational mode of economic thought.]

"'But you are depending on a technical fix,' some say. Yes, and why not? A 'technical fix' is the entire story of civilization." (p. 299)

[This is the real crux of the cornucopian/capitalist faith, and it is dead wrong. As Ronald Wright relates in A Short History of Progress (see below), civilizations have continually expanded their ecological presence until the technical fixes then available became inadequate to resolve the escalating problems. The result has frequently been overshoot and collapse. The few civilizations that have escaped this fate in the short run (the Chinese and Egyptian) were lucky enough to receive bountiful gifts from nature: the one-time loess deposit for the Chinese and the Nile river's annual soil deposits for the Egyptian. These too will one day run short. Depending on technical fixes is not to place oneself on the side of history, as Simon naively presumes, but to defy history's recurring and still unlearned lessons.]

"Feeling and being healthy is as valuable as anything else an economy can provide." (p. 459)

[Right - hence the standard of value and cost in ENL. Simon insists on using human health as a standard throughout the book, which is unusual and commendable. I just think he's radically misguided in how to achieve it - especially over the long term.]

Sismondi, Simonde de: New Principles of Political Economy

Sismondi was a progressive Swiss economist of the 18th century who had considerable influence on Marx and J.S. Mill. His main concern was to arrange the macroeconomic operations of a society so as to achieve full employment and universal well-being.

"What are then the fruits of the immense accumulation of wealth? Has it had any other effect than to make all classes share sorrow, privation, and the specter of total ruin? Has England, by forgetting men over things, sacrificed the end for the means?" (p. 10)

"The physical well-being of man, so far as it can be produced by his government, is the object of Political Economy." (p. 25)

"However, it is a great mistake, into which the greater number of modern economists have fallen, to represent consumption as a force without limits, always ready to absorb an infinite production." (p. 74)

"From the moment that there is a superabundance of goods, superfluous labor must be devoted to luxury objects. The consumption of necessities is limited, that of luxury goods is without limits." (p. 75)
[As many thinkers have pointed out, this is the inescapable logic of capitalism.]

"... workers would quickly renounce the luxury they would have to buy with odious labor." (p. 75)

"Luxury is only possible if it is bought with the labour of others ..." (p. 75)

"The corn which [the cultivator] had harvested over and above what he will eat during his own work, and over and above what he needs to sow to maintain his cultivation at the same level, was a wealth he could give away, dissipate, consume in idleness, without becoming any poorer; it was income. But once he had employed it to feed his productive workers, once he had exchanged it against labor, ... this was a permanent multiplying value which did not perish anymore - it was capital." (p. 81)
[This passage shows an understanding of capital far superior to any standard economist I have encountered. It is surpassed only by Marx, who appropriated and developed Sismondi's conception of capital just as he appropriated and developed Ricardo's conception of exchange-value.]

"The entire annual income is destined to be exchanged for the total annual product; through this exchange, everyone provides for his consumption, everyone replaces a productive capital, and everyone makes room and causes a demand, for new production. If the annual income did not buy the total annual product, a part of that product would remain unsold, it would glut the warehouses of the producers, immobilize their capital, and production would stop." (p. 93)
[This is Capitalism 101. In a nutshell, it is the key point of Keynes's General Theory, and the cause of recessions to this day. J.B. Say and Ricardo argued against this view, thus denying the possibility of gluts/recessions. Malthus sided with Keynes, Sismondi, and common sense.]

"From whatever viewpoint one considers the progress of wealth, one comes always to the same end. When it is gradual, when it is well-proportioned, when no one of its parts follows a precipitous course, it spreads universal well-being; but if any one of its gears completes its actions earlier than all the others, there will be suffering." (p. 306)

[Basically, this is what keeps Alan Greenspan and other central bankers awake at night - capitalism is a delicate machine.]

"Let us beware of this dangerous equilibrium theory that reestablishes itself of its own accord! Let us beware of believing that it does not matter on which side of a scale one puts or takes away a weight, because the other will quickly adjust itself! ... It is true that a certain equilibrium will reestablish itself in the long run, but this will be by great suffering." (p. 487)

[Keynes could have written these words. This sentiment is the source of his quip that, "In the long run we are all dead."]

"... the diseases of the soul are communicated to the body ..." (P. 556)

[This is why physical health is the best available index of overall well-being, and why it is ENL's standard of value and cost.]

Smith, Adam: The Wealth of Nations

Smith "founded" the field of economics in the sense that this book was the first systematic presentation of early capitalist economic thought. Many important economic thinkers, however - such as Turgot, Petty, and Steuart - preceded him. Below I skip the well-known quotes (the benevolence of the butcher, the invisible hand, etc.) and instead present some lesser-known aspects of Smith.

"The things which have the greatest value in use have frequently little or no value in exchange; and on the contrary, those which have the greatest value in exchange have frequently little or no value in use. Nothing is more useful than water; but it will purchase scarce any thing; scarce any thing can be had in exchange for it. A diamond, on the contrary, has scarce any value in use; but a very great quantity of other goods may frequently be had in exchange for it." (VI, p. 33)

[This is the "water-diamonds paradox," which has caused considerable embarrassment to economists as they tried to resolve it while avoiding a theory of exchange-value based on production cost. Standard economists today appear to think that the issue is resolved by noting the difference between total and marginal utility. The accepted explanation is this: people consume lots of water because it is easy to obtain. Marginal utility decreases with amount consumed. Thus marginal utility is low for the last quantity consumed. This marginal utility determines price because people aren't willing to pay more for that last bit. Hence the price of water is low. In this story, marginal utility and amount consumed explain price. In standard consumer theory, however, price is taken as given, and people consume until marginal utility falls below price. In this alternative story, therefore, marginal utility and price explain the amount consumed.

The simple and direct explanation is that water is cheap because its cost of production is low. People consume it until its marginal utility drops below its price, as standard economics correctly states. There is no paradox because no direct connection exists between use-value and exchange-value. Price is explained neither by total utility nor by marginal utility. Production cost, despite the contortions, is unavoidable.]

"Labour, therefore, is the real measure of the exchangeable value of all commodities." (VI, p. 34)

[This is Smith's primary heresy, which J.B. Say and those who followed him quickly expunged. Similarly, Smith and Marx were remarkably close in their conceptions of profit (VI, p. 54). This too

was rapidly buried. The only things that even many professional economists know about Smith today is that he supported free trade and the division of labor, and that he emphasized the market's "invisible hand".]

"When by an increase in the effectual demand, the market price of some particular commodity happens to rise a good deal above the natural price, those who employ their stocks in supplying that market are generally careful to conceal this change. If it was commonly known, their great profit would tempt so many new rivals to employ their stocks in the same way, that ... the market price would soon be reduced to the natural price, and perhaps for some time even below it." (VI, p. 67)

[Smith was under no illusion that capitalists actually want a free, open, and competitive market. To learn about this reality in today's universities, you have to attend marketing classes. In the economics lectures, the propaganda being dispensed would make Smith blush.]

"... it is in the progressive state, while the society is advancing to the further acquisition, rather than when it has acquired its full complement of riches, that the conditions of the labouring poor, of the great body of the people, seems to be the happiest and the most comfortable." (VI, p. 91)

[Smith repeatedly points out, as many have before and after him, that wages and living conditions under capitalism only rise when the economy is growing. This is the reason why many progressive economists and social thinkers strongly support economic growth, despite the ecological hazards. The ambiguous nature of growth constitutes one of our greatest challenges for the future.]

"Our merchants and master-manufacturers complain much of the bad effects of high wages in raising the price, and thereby lessening the sale of their goods both at home and abroad. They say nothing concerning the bad effects of high profits. They are silent with regard to the pernicious effects of their own gains. They complain only of those of other people." (VI, p. 110)

"All for ourselves, and nothing for other people, seems, in every age of the world, to have been the vile maxim of the masters of mankind." (VI, p. 437)

[True - this behavior goes far beyond capitalism, which simply provides history's most recent opportunities for masters to practice the vile maxim.]

"I have no great faith in political arithmetic ..." (V2, p. 42)

[The book contains no graphs or equations - only a few tables on the price of wheat and the tax on malt.]

"Without any intervention of law, therefore, the private interests and passions of men naturally lead them to divide and distribute the stock of every society, among all the different employments carried on in it, as nearly as possible in the proportion which is most agreeable to the interests of the whole society." (V2, p. 146; see also p. 208f)

[A good summary of Smith's view of the benefits of free markets. A large part of economic wisdom resides in knowing the extent to which, and the conditions under which, this statement is true.]

"Wherever there is great property there is great inequality. For one very rich man, there must at least five hundred poor, and the affluence of the few supposes the indigence of the many." (V2, p. 232)

"Our young people, it is said, generally return home much improved by their travels. A young man who goes abroad at seventeen or eighteen, and returns home at one and twenty, returns three or four years

older than he was when he went abroad; and at that age it is very difficult not to improve a good deal in three or four years." (V2, p. 295)

[Yes, Smith had a sense of humor - as did Marx.]

"The agents of a prince regard the wealth of their master as inexhaustible; are careless at what price they buy; are careless at what price they sell; are careless at what expense they transport his goods from one place to another." (V2, p. 343)

[This is similar to conservative criticisms about government expenditures today. Unfortunately, they are sometimes right, as recent government scandals in Canada amply demonstrate.]

"By necessities I understand, not only commodities which are indispensably necessary for the support of life, but whatever the custom of the country renders it indecent for creditable people, even of the lowest order, to be without." (p. 399)

[Compare this attitude, shared by Marx and virtually every other progressive economic thinker, with the mean-spirited attitude of some current standard economists, who want to define poverty and deprivation purely in terms of absolute human needs.]

Soddy, Frederick: Cartesian Economics

Soddy was a British scientist who won the 1921 Nobel prize in chemistry. This work, which is a set of lectures delivered in that year to the students of Birbeck College and the London School of Economics, has had a profound effect on ecological economics, probably second only to the work of Georgescu-Roegen (see above). Although Soddy had high praise for Marx, he did not share Marx's deep insight into capitalism. The term "Cartesian economics" derives from the project of Rene Descartes to develop a science that is useful to life, "... and so render ourselves as the masters and possessors of nature ..."

"The real engine-driver [of the train] is the coal. So, in the present state of science, the answer to the question [of] how men live, or how anything lives ... is, with few and unimportant exceptions, 'By sunshine'." (p. 4)

"The starting point of Cartesian economics is thus the well-known laws of the conservation and transformation of energy, usually referred to as the first and second laws of thermodynamics." (p. 5)

"For men, no different from any other form of heat engine, the physical problems of life are energy problems. You have to consider the source, the sunshine. It supplies a continuous revenue of energy which is consumed by the living engine in its life. Consumption here does not mean destruction, ... but merely the rendering unfit for further use." (p. 9)

"Pre-nineteenth century man lived on revenue. Present-day man augments the revenue within certain well-defined limitations out of capital." (p. 10)

[Soddy uses the revenue/capital terminology throughout as a metaphor. This has unfortunately been turned into the pseudo-concept of "natural capital" by ecological economists. See my comments on Schumacher (above) and many other places for more on this issue.]

"The fundamental fact underlying this civilisation is that whilst men can lighten their external labours by the aid of fuel-fed machinery, they can only feed their internal fires with new sunshine and then only through the good offices of the plant." (p. 10)

[The technological optimists deny this - we can create food from rocks and nuclear energy.]

"By this process of exchange of factory products the whole world gradually drew more and more for its labour-use upon the capital energy of fuel, and used it to widen the area under cultivation and to transport the harvest from the most distant regions of the globe and so indirectly augmented the revenue of sunshine upon which it is still entirely dependent for its life-use. But this is a very passing phase." (p. 11)

"Coal is the real capital, out of the consumption of which the capitalist civilisation has been built up ... This is the great paradox of Capitalism. It is capitalistic as regards the accessories, conveniences, and luxuries of existence. As regards its necessities it is still, to coin a word, reventual." (p. 12)

"Life depends from instant to instant on a continuous flow of energy, and hence wealth, the enabling requisites of life, partakes of the character of a flow rather than a store." (p. 13)

"This, then, is my main quarrel with orthodox economics, that it confuses the substance and the shadow. It mistakes debt for wealth ..." (p. 15)

[Confusion and mistakes are no doubt involved, but for the most part standard economics has deliberately distorted economic reality so as to present shadow as substance, debt as wealth. Ideologically speaking, that's its JOB.]

"... wealth consists ... of the enabling requisites of life, ... but, if it is to be had in unlimited abundance, like sunshine or oxygen or water, then it is not any longer wealth in the economic sense, though without either of these requisites life would be impossible." (p. 16)

[Soddy rightly shows his disgust at the ludicrous notion that if something is not scarce, it does not fall within the economic domain. This must be identified - and publicly derided - as one of the fundamental fallacies of standard economics.]

"Although my views are very similar in some respects to those arrived at long ago by [John] Ruskin (see above), I may be permitted to remark that I have deduced them, without at the time being aware of Ruskin's writings on this subject, from the principles of the heat-engine, rather than from those of ethics." (p. 20)

[This convergence of thermodynamics and ethics is not surprising. Soddy addressed himself to the concrete conditions of humankind and its natural environment. Ruskin's ethical approach to economics is to some degree the social reflection of this physical reality.]

"... it is the second factor in the production of wealth that now limits, and probably will always limit, human prosperity. It is knowledge, or rather ignorance." (p. 22)

[Soddy here essentially anticipates the "ultimate resource" argument of Julian Simon and the cornucopians. Ecological economists should note that they rarely acknowledge this or come to terms with it.]

"The material and scientific greatness of our day is due to the primitive accumulation of the solar energy of the forests of the carboniferous era, and preserved to this day as coal. The plant accumulated, we spend." (p. 25)

"Thus [John Maynard] Keynes ... seriously seems to think that the law of compound interest is the law of increment of wealth rather than debt, and offsets it against the Malthusian law of increase of population!" (p. 29)

[Soddy is correct in pointing out Keynes's theoretical confusion and ecological ignorance on this point.]

"It is wonderful [i.e., remarkable] how people, who have never come up against reality from the cradle to the grave, and live all their lives a purely artificial existence in some city divorced from all contact with primitive nature, get into the habit of supposing that the conventions which regulate their businesses and livelihoods can be applied to the economy of the world at large." (p. 30)

[All standard economists should be made to spend six months in poverty, and six months in the woods fending for themselves. Then come back and show us your equations.]

"But the world fills up." (p. 31)

World Commission on Environment and Development: Our Common Future

This is the report that brought the term "sustainable development" to the world's attention. It was initiated in late 1983 by the General Assembly of the UN, which called for "a global agenda for change" that would reconcile the need for economic development in the poor countries with the globe's ecological limits, which were then becoming evident. Because Sweden's Gro Harlem Brundtland was chairperson of the Commission at the time, the report became popularly known as the Brundtland Report.

"Despite official hope expressed on all sides, no trends identifiable today, no programmes or policies, offer any real hope of narrowing the growing gap between rich and poor countries." (p. xi)

"The environment does not exist as a sphere separate from human actions, ambitions, and needs, and attempts to defend it in isolation from human concerns have given the very word 'environment' a connotation of naivety in some political circles." (p. xi)

"These links between poverty, inequality, and environmental degradation formed a major theme in our analysis and recommendations. What is needed now is a new era of economic growth - growth that is forceful and at the same time socially and environmentally sustainable." (p. xii)

[The report has been severely criticized by environmentalists for this strong endorsement of economic expansion.]

"Poverty is a major cause and effect of global environmental problems." (p. 3)

"... the industrial world has already used much of the planet's ecological capital. This inequality is the planet's main 'environmental' problem; it is also its main 'development' problem." (p. 5f)

"We act as we do because we can get away with it: future generations do not vote; they have no political or financial power; they cannot challenge our decisions." (p. 8)

"The concept of sustainable development does imply limits - not absolute limits but limitations imposed by the present state of technology and social organization on environmental resources and by the ability of the biosphere to absorb the effects of human activities." (p. 8)

"The next few decades are crucial. The time has come to break out of past patterns." (p. 22)

"This Commission has been careful to base our recommendation on the realities of present institutions, on what can and must be accomplished today." (p. 23)

[These constraints on the Commission's work are often overlooked by critics of the report.]

"The Earth is one but the world is not. ... Some consume the Earth's resources at a rate that would leave little for future generations. Others, many more in number, consume far too little and live with the prospect of hunger, squalor, disease, and early death." (p. 27)

"Thus today's environmental challenges arise both from the lack of development and from the unintended consequences of some forms of economic growth." (p. 29)

"Little time is available for corrective action [on environmental problems]. In some cases we may already be close to transgressing critical thresholds." (p. 35)

"Thus economics and ecology must be completely integrated in decision-making and lawmaking processes not just to protect the environment, but also to protect and promote development." (p. 37)

"It could be argued that the distribution of power and influence within a society lies at the heart of most environment and development challenges." (p. 38)

"Sustainable development seeks to meet the needs and aspirations of the present without compromising the ability to meet those of the future. Far from requiring the cessation of economic growth, it recognizes that the problems of poverty and underdevelopment cannot be solved unless we have a new era of growth in which developing countries play a large role and reap large benefits." (p. 40)

"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts:

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

[ENL has the same orientation: needs and limits.]

"Perceived needs are socially and culturally determined, and sustainable development requires the promotion of values that encourage consumption standards that are within the bounds of the ecological possible and to which all can reasonably aspire." (p. 44)

"... sustainable development clearly requires economic growth in places where such needs are not being met. Elsewhere it can be consistent with economic growth, provided the content of growth reflects the broad principles of sustainability and non-exploitation of others." (p. 44)

[This is the more nuanced attitude to growth that has been largely ignored by critics.]

"Sustainable development requires that the rate of depletion of non-renewable resources should foreclose as few future options as possible." (p. 46)

[In this as in other cases, ENL provides analytical methods which permits vague statements such as this to be addressed with some rigor.]

"Given expected population growth, a five- to tenfold increase in world industrial output can be anticipated by the time world population stabilizes sometime in the next century. Such growth has serious implications for the future of the world's ecosystems and its natural resource base." (p. 213)

[My main criticism of the report is that it is far too coy about the ecological implications of such massive potential increases in output. It would have been far better theoretically to start with the maximum feasible increases in population and output, and to work backwards from there to recommended policies. However, this may not have been feasible politically. Part of ENL's purpose is to sway public opinion in the developed world so that more political space is created for essential policies.]

Wright, Ronald. A Short History of Progress

Wright is an archaeologist who has turned to writing novels, histories, and essays about humankind's past. In this book he provides impressive insight into our current ecological predicament by examining the behavior patterns of civilizations that have come and gone. Unfortunately, Wright offers no suggestions as to how our civilization might escape from the suicidal tendencies of those who came before.

"The vessel we are now aboard is not merely the biggest of all time; it is also the only one left. The future of everything we have accomplished since our intelligence evolved will depend on the wisdom of our actions over the next few years." (p. 3)

"Progress has an internal logic that can lead beyond reason to catastrophe. A seductive trail of successes may end in a trap." (p. 5)

"In both its capitalist and communist versions, the great promise of modernity was progress without limit and without end." (p. 6)

[This is true. One of Marx's most significant errors was to identify capitalism as the only obstacle to increased production, thus ignoring the limits of nature.]

"So far I have spoken of such problems as if they were purely modern, arising from industrial technologies. But while progress strong enough to destroy the world is indeed modern, the devil of scale who transforms benefits into traps has plagued us since the Stone Age. This devil lives within us and gets out whenever we steal a march on nature, tipping the balance between cleverness and recklessness, between need and greed." (p. 7f)

[Wright's great accomplishment is to demonstrate that ecological overshoot and collapse is an age-old problem, rooted more in human nature than in a specific economic system like capitalism. As a result of reading this book, I have revised my view of capitalism, seeing it now as just the latest and potentially most destructive manifestation of this deep-seated human tendency.]

"Of course, our civilization's particulars differ from those of previous ones. But not as much as we like to think." (p. 8)

"... we often prefer to think of the deep past as innocent and unspoiled, a time of ease and simple plenty before a fall from paradise. ... For some, Eden was the pre-agricultural world, ... for many, it was the pre-industrial world, the long stillness before the machine. ... But the truth is that human beings drove themselves out of Eden, and they have done it again and again by fouling their own nests." (p. 9)

"Our main difference from chimps and gorillas is that over the last 3 million years or so, we have been shaped less and less by nature, and more and more by culture. We have become experimental creatures of our own making.

This experiment has never been tried before. And we, its unwitting authors, have never controlled it. The experiment is now moving very quickly and on a colossal scale. Since the early 1900s, the world's population has multiplied by four and its economy - a rough measure of the human load on nature - by more than forty. We have reached a stage where we must bring the experiment under rational control, and guard against present and potential dangers." (p. 30f)

[In my view, "rational control" begins with a normative framework like ENL - an analytical method to help us decide what makes the most human and ecological sense in the economic sphere.]

"These studies show that the world's climate has been unusually stable for the past 10,000 years - exactly the lifetime of agriculture and civilization. It seems we couldn't have developed farming earlier, even if we'd tried." (p. 51f)

"In his book on the glacial core studies, Richard Alley points out what should be obvious: 'humans have built a civilization adapted to the climate we have. Increasingly, humanity is using everything this climate provides ... [and] the climate of the last few thousand years is about as good as it gets.' Change is not in our interest. Our only rational policy is not to risk provoking it. Yet we face abundant evidence that civilization itself, through fossil-fuel emissions and other disturbances, is upsetting the long calm in which it grew." (p. 52)

"The people [of the Easter Islands] who felled the last tree could SEE it was the last, could know with complete certainty that there would never be another. And they felled it anyway." (p. 60)

[This is the suicidal DNA we must now overcome.]

"... given certain broad conditions, human societies everywhere will move towards greater size, complexity, and environmental demand." (p. 65)

[Although it pains me to agree with the conservative parson, Malthus was essentially right.]

"The short-lived Empire of Ur exhibits the same behaviour as we saw on Easter Island: sticking to entrenched beliefs and practices, robbing the future to pay the present, spending the last reserves of natural capital on a reckless binge of excessive wealth and glory." (p. 79)

[Wright several times uses "natural capital" to mean natural sources and sinks. As I've indicated elsewhere, I think this is a highly unfortunate term that conflates the human realm of capitalism with the natural realm - a signal error if want to understand our predicament and assert the rational control Wright is correctly seeking.]

"The careers of Rome and the Maya also show, I think, that civilizations often behave like 'pyramid' sales schemes, thriving only while they grow. ... Such a civilization is therefore most unstable at its peak, when it has reach maximum demand on the ecology. Unless a new source of wealth or energy appears, it has no room left to raise production or absorb the shock of natural fluctuations. The only way onward is to keep wringing new loans from nature and humanity." (p. 83f)

"As the empire impoverished the soils of southern Europe, Rome exported its environmental load to colonies..." (p. 93)

[This is probably a driving force of globalization today.]

"As the crisis gathered, the response of the [Maya] rulers was not to seek a new course, to cut back on royal and military expenditures ... No, they dug in their heels and carried on doing what they had always done, except more so. Their solution was higher pyramids, more power to the kings, harder work for the masses, more foreign wars. In modern terms, the Maya elite became extremists, or ultra-conservatives, squeezing the last drops of profit from nature and humanity." (p. 102)

[This observation is similar to those made by Robert Paehlke in his useful Environmentalism and the Future of Progressive Politics (p. 188). Paehlke ascribes the rise of neoconservatism to the threats to rapid post-war economic growth that arose in the 1970s. One of these threats was the restriction on oil exports by the OPEC countries.]

"This human inability to foresee - or to watch out for - long-range consequences may be inherent to our kind, shaped by the millions of years when we lived from hand to mouth by hunting and gathering. It may also be little more than a mix of inertia, greed, and foolishness encouraged by the shape of the social pyramid. The concentration of power at the top of large-scale societies gives the elite a vested interest in the status quo; they continue to prosper in darkening times long after the environment and general populace begin to suffer." (p. 108f)

"We in the lucky countries of the West now regard our two-century bubble of freedom and affluence as normal and inevitable; it has even been called the 'end' of history, in both a temporal and teleological sense. Yet this new order is an anomaly: the opposite of what usually happens as civilizations grow. Our age was bankrolled by the seizing of half a planet, extended by taking over most of the remaining half, and has been sustained by spending down new forms of natural capital, especially fossil fuels. In the New World, the West hit the biggest bonanza of all time. And there won't be another like it." (p. 117)

"Experts in a range of fields have begun to see the same closing door of opportunity, begun to warn that these years may be the last when civilization still has the wealth and political cohesion to steer itself toward caution, conservation, and social justice." (p. 124)

"... our present behaviour is typical of failed societies at the zenith of their greed and arrogance. This is the dinosaur factor: hostility to change from vested interests, and inertia at all social levels" (p. 129)

"The 10,000-year experiment of the settled life will stand or fall by what we do, and don't do, now. The reform that is needed is not anti-capitalist, anti-American, or even deep environmentalist; it is simply the transition from short-term to long-term thinking. From recklessness and excess to moderation and the precautionary principle." (p. 131)

[Absolutely true, but without a normative framework these are simply inspiring words. We must move beyond this to the hard work of reconceptualizing our economies. Let's also be clear about the fate of capitalism. Wright is correct that the required reforms are not necessarily anti-capitalist, but we may have to transform our economic institutions to such a degree that the result can no longer be called capitalism. The ESSENCE of the required transformation is pro-survival and pro-justice; its CONSEQUENCES may be anti-capitalist. If we can't stomach this conclusion then we don't have the courage to win the battle for our civilization and its best values.]