

## Outline Of A Green Economic Theory

**Written:** October, 2004

**Published:** Synthesis/Regeneration 37 (Spring, 2005)

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The Green movement is based on humanistic values, a sound philosophical core, and enlightened policy proposals. These positive attributes have permitted the movement to grow rapidly and to become a leading force in the activist world.

Despite this success, Greens do not yet enjoy widespread public support, possibly due to a key missing element - an economic theory. Conservative forces ignore ecological realities and reject the precepts of social justice, but their views are firmly grounded in the dogmas of mainstream economics. This foundation gives their statements an appearance of depth and validity that Greens cannot currently claim.

Given this situation, I believe the Green movement should take the next step in its evolution and develop an economic theory of its own. This step would provide a solid conceptual basis for the movement's activist initiatives and electoral platforms. It would allow candidates to debate opponents with confidence and intellectual coherence. And it would demonstrate to the broader activist world that the time for a progressive economics has finally arrived.

Economic issues are of central importance for Greens because social injustice and environmental degradation frequently have economic roots. This fact is underscored by the movement's key values and philosophical statements.

Of the Greens' ten key values, eight have strong economic content. These include grassroots democracy, social justice, ecological wisdom, decentralization, community-based production, gender equity, responsibility, and sustainability. Only non-violence and respect for diversity are arguably outside this scope.

The UK Green Party has published a "Philosophical Basis" document which refers repeatedly to the economic underpinnings of Green thought. It includes the following declaration: "Conventional political and economic policies are destroying the very foundations of the well-being of humans and other animals. Our culture is in the grip of a value system and a way of understanding the world which is fundamentally flawed."

Based on these values and philosophical statements (referred to collectively in this article as the Green worldview), Greens support a wide range of economic policy proposals: replacement of fossil fuels with renewable energy sources, internalization of costs, development of new economic indicators, etc. Many of these proposals are useful and progressive, but they would be decisively strengthened if they were based on a convincing economic logic.

The current approach assumes that a correct worldview is sufficient to generate well-founded economic policies. I don't believe this is the case, for two reasons. First, personal and group

# Needs and Limits:

*Redirecting our Civilization towards Sustainable Well-being*

biases can interfere with systematic thought, resulting in solutions that lack an adequate conceptual basis. Second, the solutions to many problems are too complex to be derived directly from a worldview - they require a method of analysis.

A more rigorous approach, and the one I propose, is to make the Green worldview the foundation for a new economic theory, and then to use this theory to generate the policies. My aims in this article are to explore the nature of this task and to outline my suggestions for the theory's key concepts.

Before proceeding, let me make this project more concrete. Imagine a Green electoral candidate engaged in debate with a conservative opponent. The Green has claimed that too many trees are being cut down in a certain area, on the grounds that the logging contributes to global warming and that numerous workers are being injured on the job. The conservative responds with a pointed challenge: I know that the current rate of logging is correct because it has been established by the market; if you think this is too high, what rate do you recommend?

The Green candidate can challenge the reliability of market forces by talking about externalized costs, imperfect knowledge, and advertising pressures. She can cite further environmental degradation, such as silted streams and habitat destruction. She can point to the hardships resulting from injured workers. What she cannot do, however, is directly answer the conservative's challenge. There is currently no economic logic that incorporates the Greens' worldview and that permits her to establish, even approximately, an alternative rate of timber exploitation. This is the logic that Greens and other activists require.

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Where to begin? We could try an approach that has been used many times: start with mainstream economics and modify it to suit our purposes. This is what John Maynard Keynes did when he set out to cure Depression-era unemployment, and what ecological economists like Herman Daly are doing today in order to account for "natural capital". While any progressive modification is better than none, I don't believe this will work.

A key problem with mainstream economics is that it is largely a description of how a market-based economy **does** operate. The required theory, however, must specify how any economy **should** operate. Stated more technically, mainstream economics is a positive theory about capitalism, whereas Greens need a normative theory that applies to local, global, market-based, socialized, and any other type of economic system.

What also disqualifies this approach is the bias of mainstream economics towards business interests, as demonstrated by its core concepts. In mainstream thought, for example, value refers to subjective assessment, thus embracing everything that can be sold, including deadly cigarettes and trivial pursuits. In a Green economic theory, value would refer to concrete human well-being. The converse of value, cost, has been replaced in mainstream economics by opportunity cost, which is defined as forgone consumption and thereby skirts real sacrifices entirely. In a Green economic theory, cost would refer to worker suffering and natural destruction.

# Needs and Limits:

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I must emphasize that, while I reject mainstream economics as the basis for a Green economic theory, I hold some of its practitioners in high regard. One example is Paul Krugman, a Princeton economics professor and New York Times columnist. Krugman uses conventional concepts to defend workers and the environment, as well as to beat up Republicans - all fine work. Another is Amartya Sen, a development economist who won the 1998 Nobel Prize in Economic Science. Sen depicts himself as a loyal disciple of Adam Smith, who is a hero to many conservatives, but he deals with poverty, famine, women's rights, and other issues in a most enlightened fashion.

Economists like Krugman and Sen fill a necessary progressive niche, but they do not share the Green worldview, and the concepts they apply cannot move us beyond "a way of understanding the world which is fundamentally flawed."

The stark truth is that a new theory must start afresh. Although some useful ideas can be retrieved from the long history of economic thought, no previous generation has faced the crises that confront us today, and no economic theory has therefore arisen to address them. This is particularly true for the ecological crisis, a latecomer to humankind's challenges that threatens civilization and possibly human survival itself.

I have been pondering a new economic theory for over a decade, and in 2003 I engaged in a sometimes intense discussion on the topic with a group of environmentalists. I have learned that the most contentious issue is the relationship between humankind and nature, and where an economy fits into this relationship. The critical question is this: to what degree can humankind legitimately interfere with the environment for the sake of its economic activities? Opinions on this range from the Earth First!/ Deep Ecology view that humankind should minimize its impact on nature to the Judeo-Christian view that humankind should exercise dominion over the earth.

The various opinions are deeply entrenched, but this controversy is unnecessary and should not be permitted to strangle the development of a Green economic theory. The mistake is to assume that such a theory must have the same pervasive social influence that mainstream economics has today. I suggest instead that we make a clear distinction between a society's economic sphere, which is addressed by economic thought, and its non-economic spheres, which are addressed by other modes of understanding. A Green economic decision, in other words, would be only one contributor to a much broader social decision.

To illustrate this, note that economics is the study of human production, exchange, and consumption. It touches many areas of social existence, but its conclusions are not necessarily superior to those derived from politics, ethics, culture, or spirituality. A society may decide, based on its relatively narrow economic logic, that it should extract a certain amount of timber from its forests. It may then override this conclusion, significantly lowering the amount, because of the inherent worth of species, the cultural or spiritual significance of the area, or other non-economic factors.

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A Green economic theory must begin with a clear economic objective, one that is consistent with the Green worldview and that provides the necessary focus for the theory's concepts. My choice for this objective is the long-term maximization of human health. Despite the absence of nature or non-human species in this objective, I believe it is correct for the following reasons:

# Needs and Limits:

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1. It makes human well-being the central aim of an economy. This is critical because it avoids what I believe is an important error among progressive forces: the notion that economics has focused on humankind while neglecting nature. Economics has in fact focused on business, thereby neglecting both humankind and nature. The logical consequence of this error is to shift the aim of an economy to ecological protection, which repeats the mainstream offense of disregarding humankind.
2. The use of health as the index of human well-being serves several purposes. One is that the protection of human health implies the protection of non-human health. Environmentalists correctly assert that humans are part of nature, and that our species is tightly interconnected with other species. This being the case, concern for humankind entails concern for the rest of nature. By humble analogy, if you want a pet fish to remain healthy, you will automatically clean its tank. A "tank-centric" approach to fish ownership, analogous to a "biocentric" approach to economics, is unnecessary.

Health also corresponds most closely to the common understanding of "human needs," a term used by many Greens to identify an economy's aim. According to the Canadian Green party, for example, "the economy should provide for human needs." The Charter of the Global Greens states that we should strive for "a world economy which aims to satisfy the needs of all, not the greed of a few." Health distinguishes nicely between needs and greeds.

As well, health directs our attention to the interests of the global poor. Many of us who live in developed countries easily forget that the primary function of an economy is to satisfy basic human needs. This consideration cannot be left to our sometimes fickle compassion - it must be built into our theoretical structure.

Finally, health can to a large degree be objectively assessed. Life and death, injuries, and the presence and absence of disease are all measurable results of our economic activities. This means that, if adequate statistics are available, such results cannot be hidden behind the smokescreens of mainstream economics: choice, preference, and money.

3. Long-term health implies sustainability. Future human generations will enjoy healthy lives only if they have adequate natural sources and sinks to run their economies. To ensure this future health, we must minimize our own resource consumption and waste expulsion.

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Having covered the preliminaries and established an economic goal, I can now summarize the key ideas of my proposed theory. Details are available on my Web site (see address below).

As indicated, value and cost are the core concepts of an economic theory. In general terms, value is what we gain from consuming an output, while cost is what we sacrifice in producing it. Following the 19th century social critic, John Ruskin, I split value into two concepts: intrinsic value and effectual value.

# Needs and Limits:

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Intrinsic value is the maximum capacity of an output, over the duration of its useful existence, to maintain or increase human health. If an output has the opposite effect - if it decreases health - its intrinsic value is a negative quantity. Intrinsic value is used to judge an economy's production.

Effectual value is the actual health gained from a final output. It accounts for the fact that an output can be lost, destroyed, discarded, allowed to spoil, or distributed to consumers who don't need it or who are already satiated. Effectual value is used to judge an economy's consumption.

My theory avoids opportunity cost and instead uses a new concept: input cost. This refers to the health effects of production, which can be positive or negative. The direct effects, through labor, are called labor cost. The indirect effects, through the environmental impacts of production, are called natural cost. Input cost is the sum of labor cost and natural cost.

Briefly stated, intrinsic value is the potential health gain from production, effectual value is the actual health gain from consumption, and input cost refers to the health losses incurred in production.

We can now apply a general principle of rational behavior: an activity should continue until its cost exceeds its value. In the context of a human economy, this means that production of an output should increase until its effectual value, which tends to decline, is equal to its input cost, which tends to rise. This is referred to as the output's optimal quantity.

For example, the consumption of vegetables has undoubted health benefits, but the human body can assimilate only so much per unit of time. Beyond a certain point, the benefits will decrease for each unit consumed. At the same time, the sacrifices required to produce each additional unit will eventually rise. This is because labor time will increase as more vegetables are produced, with attendant increases in occupational diseases and injuries. As well, negative environmental effects will accumulate. A rational Green society will therefore produce vegetables, but only while the benefits from their consumption exceed the sacrifices from their production.

Another example is cigarettes. The initial effectual value of cigarettes is negative, and this negative value declines further as more cigarettes are consumed. Even if we assume that the initial input cost is zero, cost will exceed value. A rational Green society will therefore not produce cigarettes at all.

This method of addressing economic issues, called marginal analysis in mainstream economics, has run into fierce opposition from some progressive critics. The most common objection is that the method is tied too closely to mainstream thought. My view is that this objection is based on a serious misconception. The essential problem with mainstream economics is not its analytical tools but its business orientation. Once this orientation is shifted towards humankind and nature, some mainstream tools can be usefully appropriated. By far the most important of these is marginal analysis.

Despite its power, marginal analysis is limited because it assumes continuous change. It therefore cannot address the abrupt changes associated with natural thresholds. A threshold is an ecological discontinuity - the frequently unknown point where the flow of a renewable

# Needs and Limits:

*Redirecting our Civilization towards Sustainable Well-being*

resource into the economy, the flow of a waste back to nature, or the destruction of habitat triggers a nonlinear ecosystem change. A different logic is required here - one developed specifically to handle risk and uncertainty.

Statisticians have developed several decision-making criteria to deal with such cases. I have chosen one of these to formulate the concept of expected threshold cost. This is the anticipated loss of human health resulting from the encroachment on a natural threshold due to economic activities. The application of this concept can significantly decrease the previously determined optimal quantities, but it cannot increase them.

Using marginal analysis and threshold logic, we can estimate target quantities for final outputs (those which are directly consumed) and intermediate outputs (those which are used in the production process). Once this is done, we can estimate the minimum resource and waste flows needed to produce these outputs with the best available production technologies. Taken together, these output and flow targets provide a clear picture of how an economy should operate.

In this article I have provided several reasons why Greens should develop a new economic theory. I close by giving the reason I find most compelling.

After centuries of expanding our ecological impact on the planet, humankind must now reverse course and seek a lower and hopefully stable impact level. The present generation is thus in a historically unique position: it stands between an expansionary past and a post-expansionary future. The task of today's activists and progressive thinkers is to modify the operation of our economies so that this future is achieved incrementally, without collapse and chaos.

This is a formidable challenge. We must decide which existing policies to support, which new policies to propose, and which economic institutions to restructure. We must not only unify the world's activists, we also have to convince a critical mass of the remaining population that a new way of living is inevitable and desirable. The successful completion of this task is impossible - unimaginable - unless we speak a common economic language and apply a cogent economic theory.

Perhaps what I have proposed here is incorrect. If so, let's scrap it and start again. Whatever the verdict on my approach, I believe we must develop an economics of our own and use it to drastically change the way humankind produces and consumes, allowing us to bequeath a still bountiful planet to future generations.

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