

# Economics for a Full World: Herman Daly & Ecological Economics

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# “Economics for a Full World”

## Herman Daly

- I. Basic Vision: Economy as Subsystem of Ecosphere
- II. From Empty World to Full World: Limiting Factor Has Changed
- III. Limits to Growth & Optimal Scale of Economy in Full World
- IV. Three Strategies for Integrating Economy and Ecosystem
- V. Outline of Policies for a Steady-State Economy
- VI. The Larger Ethical and Ecological Context of Economics

# Herman Daly profile

- Ecological economist and emeritus professor at the University of Maryland, School of Public Policy
- Former Senior Economist in the Environment Department of the World Bank
- Co-founded the *Ecological Economics* journal
- Recipient of many international prizes, including the 2014 *Blue Planet Prize* of the Asahi Glass Foundation
- Current staff member of the *Center for the Advancement of the Steady State Economy* ([www.steadystate.org](http://www.steadystate.org))

“The global economy is now so large that society can no longer pretend it operates within a limitless ecosystem. Developing an economy that can be sustained within the finite biosphere requires new ways of thinking.”

– Herman Daly

From “Economics in a Full World,” *Scientific American*,  
Sept. 2005, 100-107

# Guiding Questions

- 1. In your own words, how would you describe to someone outside of class what Daly means by "full world"?*
- 2. What are 1-2 examples, or signs, from your own experience or knowledge outside of class that we are now living in a full world?*
- 3. What is one way in which the discipline of economics in a "full world" differs from economics in an "empty world," according to Daly?*
- 4. What is one of the important adjustments that we'll have to make in order to live in a "full world" that will be especially challenging to meet?*

# Some Signs of a Full World

- Ecological footprint (6.35 Earths needed to support global population at USA per capita level)
- The Anthropocene Age (Paul Crutzen) – human activity impacts earth’s geology & ecosystems
- No longer “More and Better” – we must choose (Bill McKibben, in Intro to *Deep Economy*)
- “The Great Collision” – Gus Speth

“For the past three centuries, the effects of humans on the global environment have escalated. Because of these anthropogenic emissions of carbon dioxide, global climate may depart significantly from natural behaviour for many millennia to come. It seems appropriate to assign the term ‘Anthropocene’ to the present, in many ways human-dominated, geological epoch, supplementing the Holocene – the warm period of the past 10-12 millennia.” – *Nature*, Jan. 3, 2002

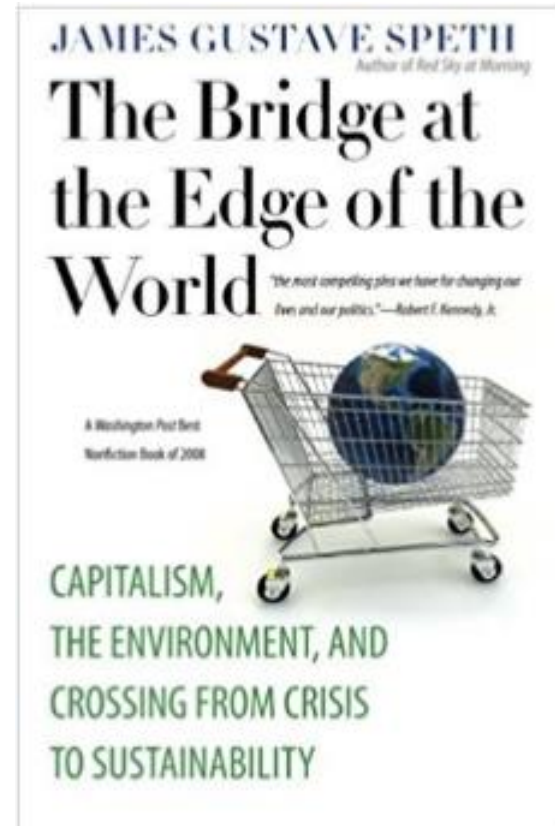
The Geology of  
Mankind → The  
*Anthropocene* Era



Paul Crutzen,  
Nobel Laureate in  
Chemistry, 1995

# The Great Collision (16 graphs)

*The pattern is clear: if we could speed up time, it would seem as if the global economy is crashing against the earth—the Great Collision. And like the crash of an asteroid, the damage is enormous.*



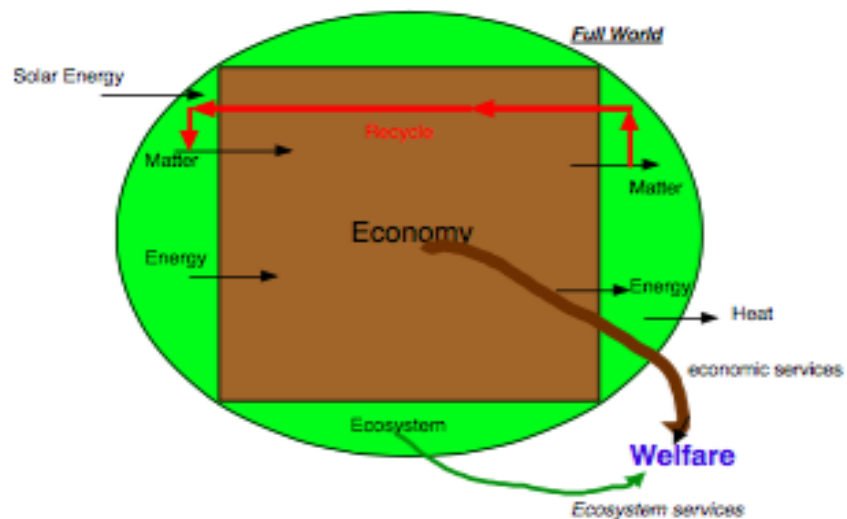
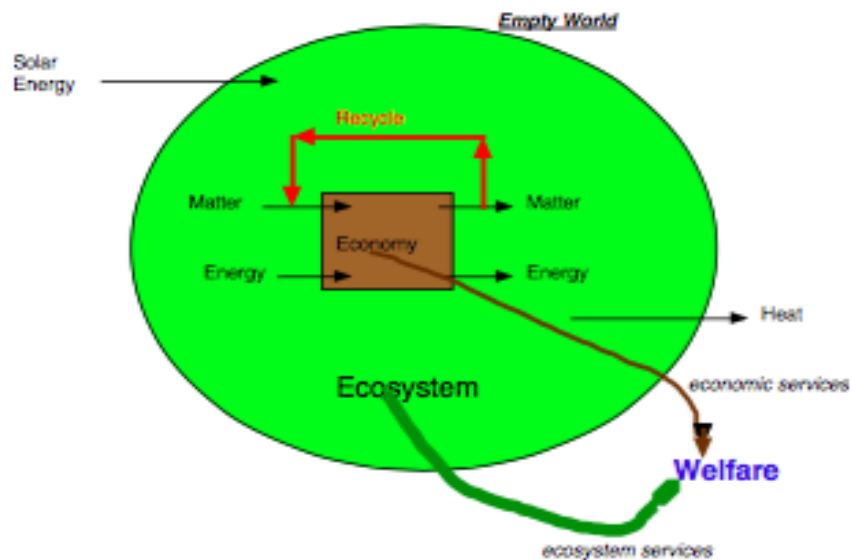


# Herman Daly

- “When I worked at the World Bank,” Daly writes, “I often heard the statement, ‘There is no conflict between economics and ecology. We can and must grow the economy and protect the environment at the same time.’ I still hear that a lot today. Is it true? Is it possible?” He continues: “Although it is a comforting idea, I fear that it is at most half true.”

**Figure 1.**

**A "Macro" View of the Macroeconomy!**



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# Daly: Growth vs. Development

- GROWTH: “*quantitative increase* in size by accretion or assimilation of matter” ☹️
- DEVELOPMENT: “*qualitative improvement* without quantitative increase in resource throughput beyond an ecologically sustainable scale” 😊 (p7)

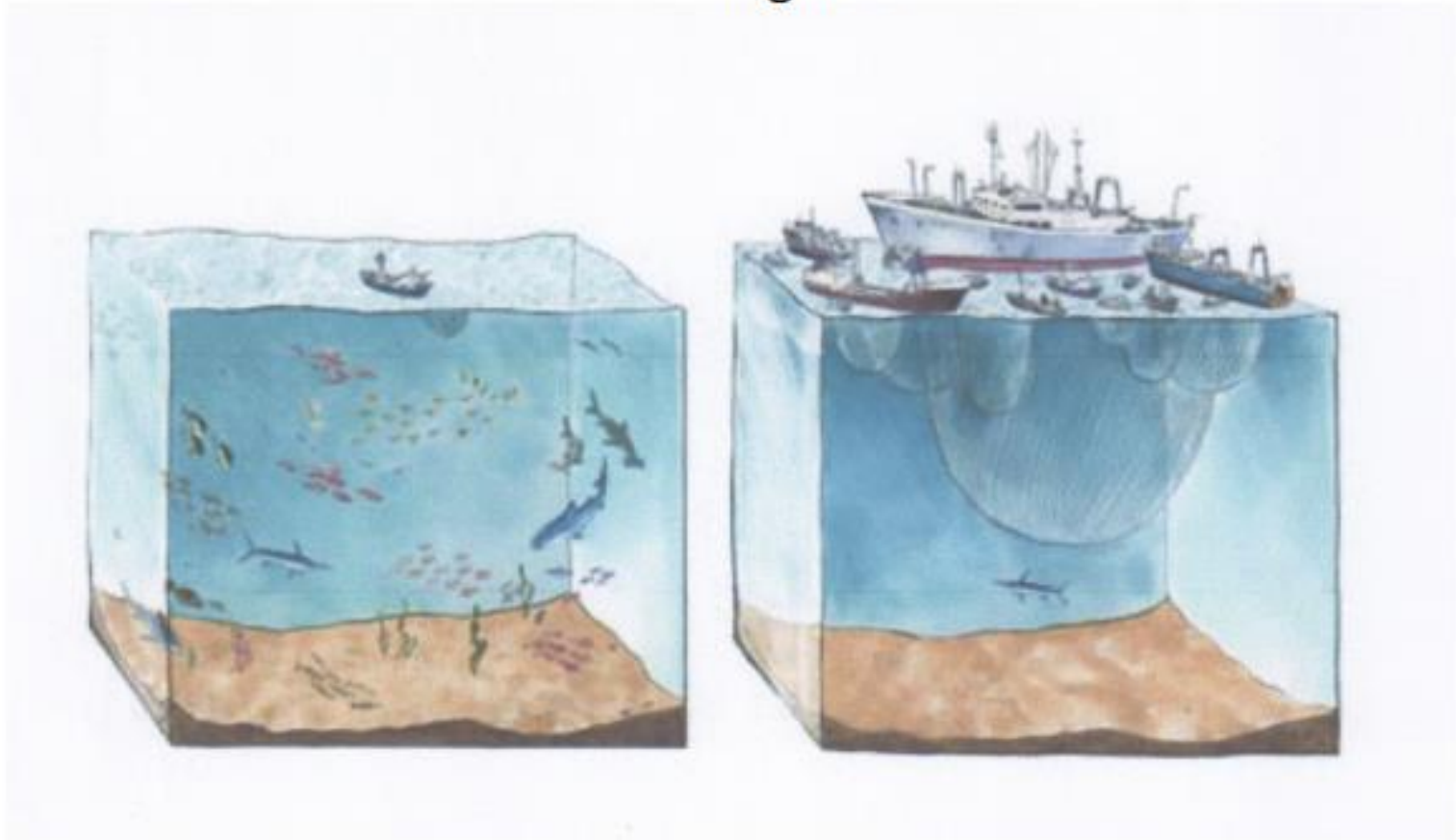
# Myfootprint Qs on “Development”

“Was your home or any portion of it built with recycled materials, wood certified as sustainably harvested, or any other green design features?” (Q 19)

“Approximately what share of your home furnishings are second-hand or made of either recycled or sustainably produced materials?” (Q 20)

## II. The Limiting Factor Has Changed

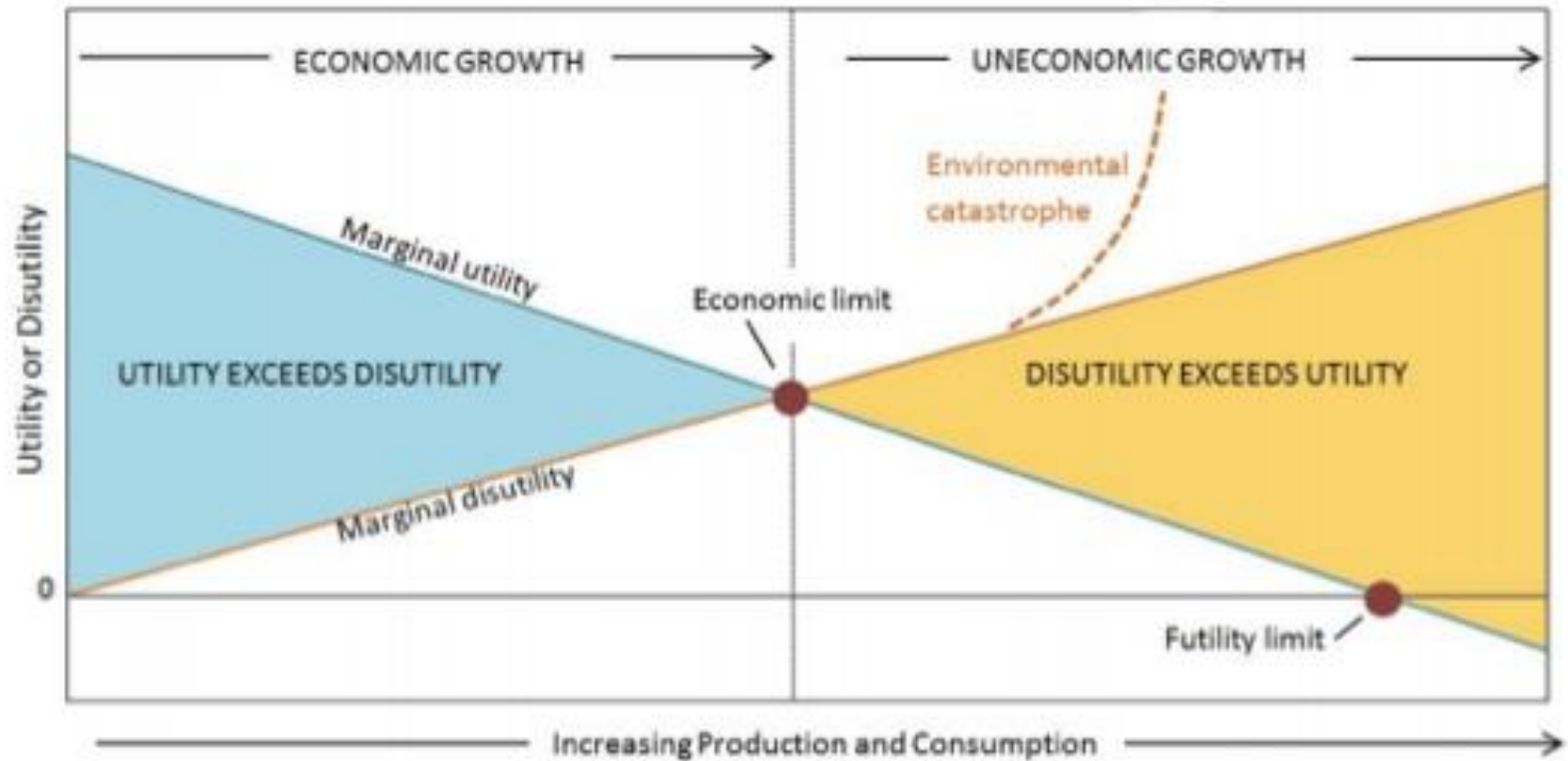
Figure 2



# “The Limiting Factor Has Changed”

“This simple picture is instructive. It tell us that in the past the fish catch was limited by the number of fishing boats and fishermen. Now it is limited by the number of fish and their capacity to reproduce. More fishing boats will not result in more caught fish. The limiting factor is no longer the manmade capital of boats, but [the] remaining natural capital of fish populations and their aquatic habitat.” p8

# III. Limits to Growth and Optimal Scale of the Economy in a Full World





# Moving from an Empty to a Full World:

## Law of diminishing marginal utility

--the rate of growth in benefits from the economy slows down (since we presumably satisfy our most important wants first)

## Law of increasing marginal costs

--the rate of growth in costs to ecosystem services increases (since we presumably sacrifice the least important ecosystem services first)

# Core Ecological Economics principles

- Constrain economic growth (throughout of resources) by global ecological stability
- Seek a just—i.e., equitable--distribution of earth's resources
- Given these two principles, employ markets for optimal allocation of resources

# Core Neoclassical Econ Principles -

I

- Consumption is driven by individuals seeking to maximize their own utility, or welfare
- Consumption is *insatiable*—we can never have too much of a good thing.
- As rational beings, consumers know best what they want and need.
- As rational beings, producers prize efficiency (doing more with less) as the *summum bonum*

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# Core Neoclassical Econ Principles - II

- Principle of scarcity: All output requires inputs from nature; nature is finite; ergo, output is necessarily finite.
- Given the principle of insatiability, competition for “more” never ceases.
- --from George DeMartino, *Global Economy, Global Justice* (London: Routledge, 2000), 38-41.

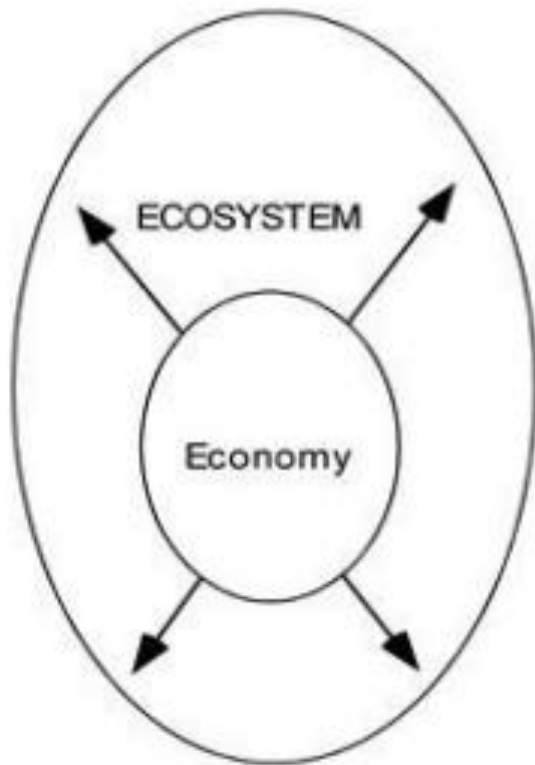
# Richard Thayer: 2017 Nobel Prize Winner in Economics

Behavioural economics incorporates the study of psychology into the analysis of decision-making behind an economic outcome - such as the factors leading up to a consumer buying one product instead of another.

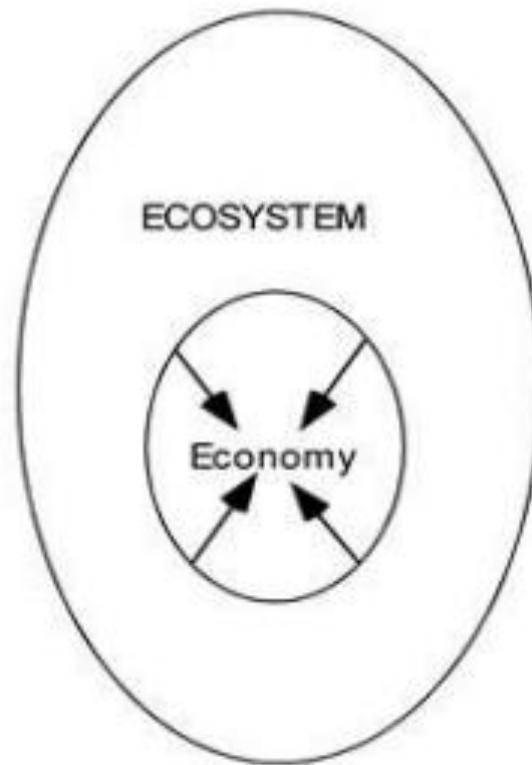
Unlike the field of classical economics - whereby decision-making is entirely based on cold-headed logic - behavioural economics allows for irrational behaviours and attempts to understand why this might be the case. The concept can be applied in miniature to individual situations, or more broadly to encompass the wider actions of a society or trends in financial markets.

# IV. Three Strategies for Integrating Economy and Ecosystem

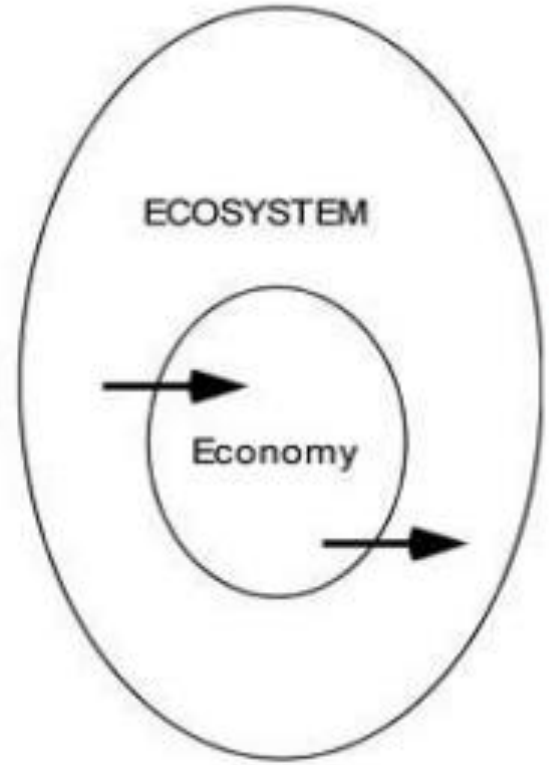
**Economic Imperialism**



**Ecological Reductionism**



**Steady-State Subsystem**



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# V. Outline of Policies for a Steady-State Economy

1. Cap-Auction-Trade systems for basic resources (esp. fossil fuels)
2. Shift tax base from “value-added” (labor & capital) to “that which value is added” (natural resource throughput)
3. Limit the range of inequality in distribution.
4. Move from fractional reserve banking system to 100% reserve requirements on demand deposits.
5. Move from free trade and free capital mobility to balanced and regulated international trade.
6. Free up the length of the working day, week, and year.
7. Stabilize population
8. Reform national accounts
9. Restore the U.S. Full Employment Act of 1945 or its Equivalent.
10. Seek World Community as a Federation of National Communities, Not as the Dissolution of Nations into a single “World Without Borders”

# VI. The Larger Ethical & Ecological Context of Economics

