

THE STANDING FOREST · CHAPTER TWO

The Economy Has a Coastline

Chapter Two of The Standing Forest

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Chapter Two of The Standing Forest. The whole book, with every chapter, is at business.hautelumiere.life/library/the-standing-forest (DOI https://doi.org/10.5281/zenodo.23989542).

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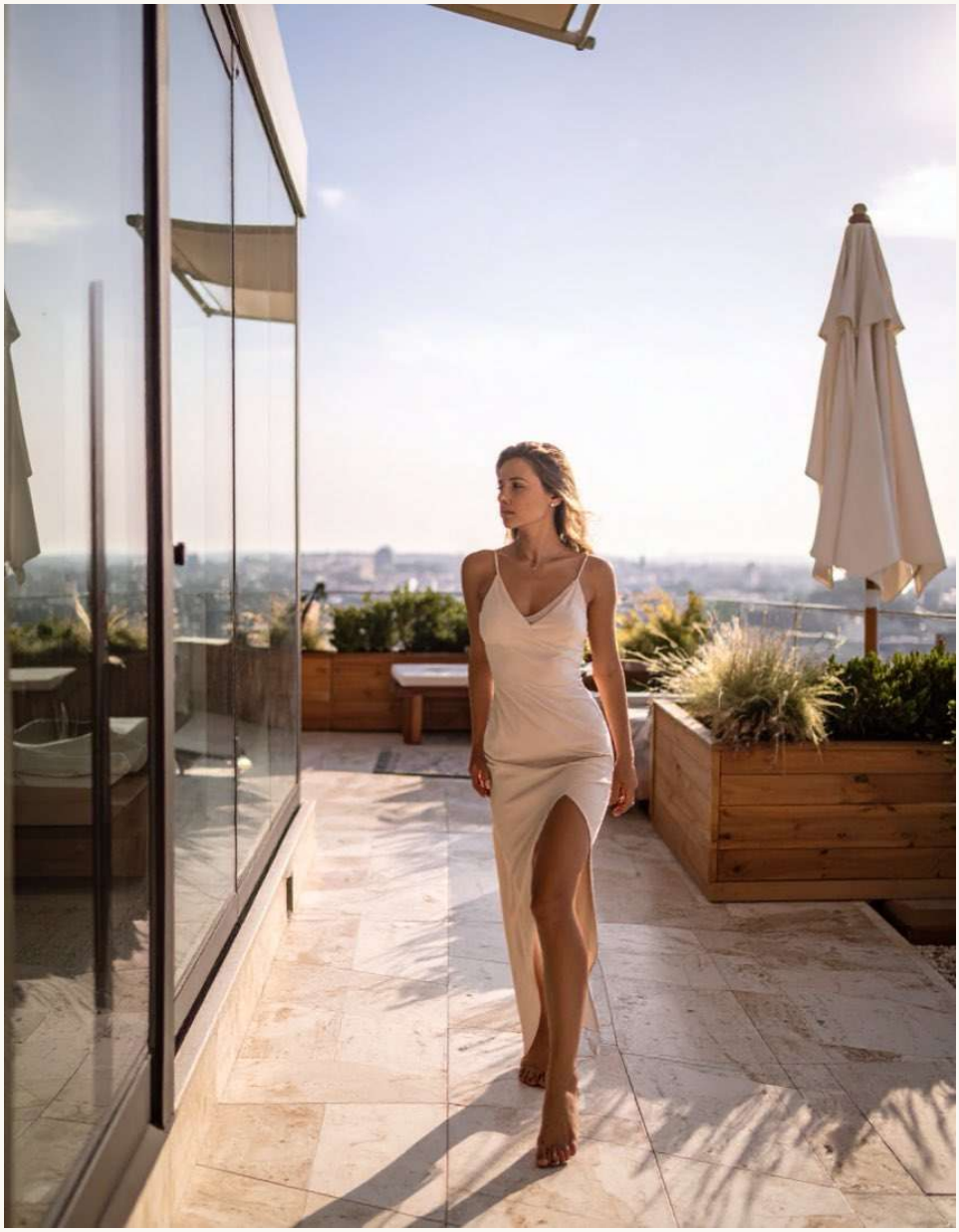
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ABSTRACT

Most maps of the economy have no coastline. The circular flow printed in the opening chapter of almost every introductory course shows households sending labour to firms and firms sending wages back, goods one way and money the other, in a loop that turns for ever. Nothing comes into the loop from outside it, and nothing leaves. There is no sun, no soil, no sea, no smoke. The diagram is not wrong about what it shows. It is silent about where the loop is standing. This chapter is about the people who drew the coastline in. Four of them, across four generations, writing for different readers and from different starting points, arrived at the same correction. The history matters to a leader for a practical reason: an idea that has been rediscovered four times is not a fashion, and an idea that has been misquoted for fifty years has to be read from its sources before it can be defended in a boardroom.

CHAPTER TWO

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A map with no edge

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Santa Anna's *Ecstatic Economics* puts the proposition with less ceremony than the subject usually gets: "This is not a matter of opinion. It's thermodynamics." Its last word is doing work. It does not say the biosphere deserves respect, though he believes that too. It says the economy is a physical process, and physical processes have inputs and outputs. That claim has a history, and the history is older and stranger than the doughnut that made it famous.

Mill's quiet room, 1848

The first serious economist to write calmly about an economy that stops growing was John Stuart Mill. In the 1848 *Principles of Political Economy*, Book IV, Chapter VI, titled "Of the Stationary State", he took the classical economists' fear, that growth would one day end in a stationary condition of wages and profits, and turned it over. He did not regard the prospect "with the unaffected aversion so generally manifested towards it by political economists of the old school". His most quoted sentence from that chapter sets the terms for everything after it: "It is scarcely necessary to remark that a stationary condition of capital and population implies no stationary state of human improvement."[7]

Mill was not an ecologist; the word did not yet exist in English. His reasons were partly aesthetic. He did not want a world in which every rood of land was brought into cultivation and every flowering waste ploughed up. But the distinction in that sentence is the one this whole book turns on. The size of a thing is not the same as the quality of what happens inside it. A garden can stop getting bigger and keep getting better.

Boulding's spaceship, 1966

The next figure is Kenneth Boulding, an economist who also wrote poetry and helped found the study of general systems. In 1966 he contributed an essay called "The Economics of the Coming Spaceship Earth" to

a Resources for the Future volume on environmental quality.[8] He contrasted two economies. The first he called the cowboy economy: a frontier with apparently endless land, where success is measured by how much passes through, production and consumption alike. The second he called the spaceman economy: a closed capsule with no unlimited reservoirs of anything, where the right measure is not how much flows through but the condition of the stock that remains, including the bodies and minds of the crew.

The essay is often quoted as if it were an environmental sermon. It is closer to an accountant's memo. Boulding's point was that the measure of success changes when the frontier closes. On the frontier, throughput is the score. On the ship, throughput is a cost, and the thing to maximise is the quality of what you already hold.



Daly's metabolism, 1968 to 1990

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Daly's metabolism, 1968 to 1990

Herman Daly, who studied under Nicholas Georgescu-Roegen at Vanderbilt and later worked as a senior economist at the World Bank, did the patient work of turning Mill's room and Boulding's ship into economics. His 1968 paper in the *Journal of Political Economy*, "On Economics as a Life Science", argued that the economy is best read as a metabolism, in the way a biologist reads an organism: it takes in low-entropy matter and energy, uses them, and gives back high-entropy waste.[2] The circular flow of money is real, he

said, but it rides on a one-way flow of stuff, from mine and field to dump and sky. He gave that one-way flow a name that stuck: throughput.

The physics came from his teacher. Georgescu-Roegen's *The Entropy Law and the Economic Process*, published by Harvard University Press in 1971, made the case at book length that every act of production turns usable, ordered matter and energy into less usable, disordered forms, and that no accounting convention can run the process backwards. Georgescu-Roegen was a difficult writer and his conclusions were darker than Daly's; he doubted that even a steady state could last indefinitely. What Daly took from him was the frame, not the gloom. If production is a metabolism, then the question for any economy is not only how fast its money circulates but how fast it is eating, what it is eating, and whether the meal grows back.

Here the house's reading and the ecological economists' reading meet most closely. When Santa Anna writes that the matter "is not a matter of opinion", he means what Georgescu-Roegen meant: that the argument about limits is, at bottom, an argument about physics, and that it can be had calmly, with figures, rather than as a quarrel between optimists and pessimists. The quarrel comes later, over which limits bind, how tightly and how soon. The frame is not in dispute among the people who have looked at it closely.

Four years after the metabolism paper, in "In Defense of a Steady-State Economy" in the *American Journal of Agricultural Economics*, Daly set out what a steady state actually means.[10] It is an economy with constant stocks of people and physical capital, maintained by the lowest feasible rate of throughput. It is explicitly not an economy where nothing changes. Knowledge, technique, culture, distribution and the quality of goods can all keep developing. Daly's shorthand for the difference became one of his best-known distinctions: growth is getting bigger, development is getting better.

Then, in 1990, in the second volume of the young journal *Ecological Economics*, Daly wrote a six-page paper that gave the idea working rules.[11] Two of them are the ones every later framework quietly borrows. Harvest rates of renewable resources should not exceed their regeneration rates. Waste emissions should not exceed the assimilative capacity of the environment that receives them. A forest can be cut at the rate it grows. A river can take what it can clean. Above those rates the economy is not earning an income from nature; it is spending the capital.

Santa Anna's book reaches the same place through another door, from the Indigenous principle Robin Wall Kimmerer calls the Honorable Harvest, and states it as a rule of exchange:

> *Every taking must be balanced by a giving. Every extraction must be matched by a restoration.*[12]

Daly's two rules are that sentence with numbers attached.



Raworth's ring, 2012 to 2017

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Raworth's ring, 2012 to 2017

The doughnut itself is younger than most people assume. Kate Raworth, then a senior researcher at Oxfam, published it in February 2012 as an Oxfam discussion paper, *A Safe and Just Space for Humanity: Can we live within the doughnut?*, written for the Rio+20 conference.[13] She took a picture Earth-system scientists had just drawn and added a second ring inside it.

The outer ring came from Johan Rockström and a large group of colleagues, who in 2009 proposed nine planetary boundaries, among them climate change, biodiversity loss, the nitrogen and phosphorus cycles,

land-system change and freshwater use, and estimated that three had already been crossed.[14] Raworth kept their ceiling and added a floor beneath it: a social foundation of human needs, drawn in the 2012 paper from the priorities governments had submitted for Rio+20. The space between floor and ceiling, which looks like a ring doughnut when you draw it, she called the safe and just space for humanity.

In 2017 she published the full argument as *Doughnut Economics: Seven Ways to Think Like a 21st-Century Economist*, and a two-page comment in *The Lancet Planetary Health* titled "A Doughnut for the Anthropocene: humanity's compass in the 21st century".[15] The book's foundation has twelve dimensions, from food, water and health through housing, energy, networks, political voice, social equity, gender equality, income and work, education, and peace and justice. The ceiling has the nine boundaries. Of the seven ways, the one that causes the most argument is the one asking economists to be agnostic about growth.

Santa Anna's book is generous to the doughnut and precise about what it adds. It calls the ring a framework that "elegantly captures what GDP misses", and then asks the question the diagram cannot answer by itself:

> *It's not enough to meet basic needs without exceeding planetary boundaries. The question is: How alive do people feel in the economy we're creating?*[16]

Chapter 4 takes that question up. It is enough here to see where it sits. Mill asked what happens inside the stationary room. Boulding asked about the condition of the crew. Daly separated getting bigger from getting better. The house adds a fourth measure: whether the people inside the ring are alive in it.



Three myths that travel with the idea

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Three myths that travel with the idea

Every good idea picks up passengers. Three travel with this one, and each is worth correcting gently, because each makes the idea easier to dismiss.

The steady state means stagnation

The most common objection to Daly is that a steady-state economy is a recession that never ends. Daly answered it in 1972 and kept answering it for fifty years. A recession is a growth economy that has failed to

grow: unemployment rises because the economy's institutions, its debts, its jobs and its public budgets were built on the assumption of expansion. A steady state is an economy designed not to need expansion. The difference is between a plane that stalls and a plane built to glide. Whether such an economy can be designed, and at what cost, is a fair argument, and Chapter 3 takes it seriously. But stagnation is not what Daly proposed.

The Limits to Growth predicted collapse by the year 2000

In 1972, the same year as Daly's defence of the steady state, Donella Meadows, Dennis Meadows, Jørgen Randers and William Behrens published *The Limits to Growth*, a computer study for the Club of Rome. It is often remembered as having forecast global collapse before the end of the century, and as having been proved wrong when the century ended without one. The book did not forecast that. Its scenarios were not predictions of dates; its standard run, the case in which nothing changed, showed industrial output and food per person turning down in the first half of the twenty-first century, not the twentieth. In 2008 the physicist Graham Turner of CSIRO compared thirty years of observed data with the scenarios and found that the record from 1970 to 2000 tracked the standard run more closely than any other.[17] That does not make the model right about what comes next. It does mean the most repeated criticism of it is aimed at a claim it did not make.

The famous lines about GDP

Two quotations about national accounts appear in almost every piece of writing on this subject, Santa Anna's book included, and both usually arrive tidier than they left.

Simon Kuznets, who designed the United States national income accounts, warned in his 1934 report to the Senate, *National Income, 1929–1932*, that the welfare of a nation could scarcely be inferred from a measurement of national income. The sentence comes, as the US Bureau of Economic Analysis has pointed out, directly after a sentence about the distribution of income.[18] Kuznets was warning about a particular measure, read without its distribution, not about measurement. Reproductions of his exact wording differ by a word or two, so it is paraphrased here rather than quoted.

Robert Kennedy's line, from a speech at the University of Kansas on 18 March 1968, is usually given as being about GDP and shortened to fit a slide. He was speaking about gross national product, the measure in use at the time, and the passage closes: "It measures everything, in short, except that which makes life worthwhile."[19] The common version, which Santa Anna's book also uses, keeps the sense and loses the speech. The distinction matters only to a careful reader. This book intends to be read by careful readers.

Santa Anna's book gives the sharpest modern form of the same point, in words neither Kuznets nor Kennedy used:

> *In standard economic accounting, a forest has value only when it's cut down.*[20]

The forest is the right image for this book, and it will come back at the end of it.

What the history cannot tell you

A history of ideas is not evidence that the ideas are right. Mill's stationary state was a hope, not a forecast. Boulding's spaceship is a metaphor. Daly's rules are principles; they say what sustainable use would be, not whether any particular economy can reach it. The doughnut is a picture; it does not, by itself, say which policies move a country into the ring, or how fast, or at whose cost.

What the history does show is that the idea is not a fashion. Four people in four generations arrived at the same correction: the economy has a coastline, and a measure of success that ignores the coastline will, sooner or later, reward the economy for eroding it. Every later chapter assumes that much and argues about the rest. The same correction runs beneath two neighbouring books in this lineage: Elinor Ostrom's work on how communities govern a shared resource without exhausting it, and the older question of whether scarcity is a fact of nature or a choice of design.

The finer points, for a household or a firm

The idea becomes useful the moment it is brought down from the planet to something you are responsible for. Three separations make the translation honest.

Separate the two flows. In your accounts, money circulates. In your building, stuff passes through. A household's budget can balance while its throughput, the energy, food, water and goods that come in and leave as waste, keeps rising. A firm can grow its margin while its throughput grows faster. Daly's first move was to count the second flow as carefully as the first. You can do the same with numbers you already hold: the energy bills, the waste invoices, the purchasing ledger, the mileage claims.

Separate the stock from the flow. Boulding's crew measured the condition of the ship, not the speed of its consumption. For a firm, the stock includes the soil of its suppliers' fields and the health and skill of its people. For a household, it includes the house, the garden, the bodies in it and the relationships that hold it together. When a decision raises the flow and lowers the stock, it is spending capital and calling it income.

Separate getting bigger from getting better. When someone in the room says *growth*, ask which one they mean. More customers, more square metres and more tonnes are growth. Better service, fewer defects, longer-lived products and more time at the table are development. Both can be good. Only one of them is bounded by the coastline.

Santa Anna's book is careful not to turn this into an argument against all growth, and the line is worth quoting in full, because it is often the first thing a sceptical board member wants to hear:

> *Growth that provides genuine value, that meets real needs, that creates vitality rather than extracting it—this is beautiful and necessary.*[21]

The Tool: The Two-Ring Ledger

A single page, completed once a quarter, for a household or a firm. It takes about an hour the first time and twenty minutes after that. It uses figures you already hold; nothing on it requires a consultant.

Part A · The floor (the inner ring). List the needs this household or firm exists to meet, for the people it is responsible for. For a household: food, shelter, health, rest, learning, connection, voice in decisions. For a firm: a living wage, safe work, time to learn, a say in how work is done, fair dealing with suppliers and customers. For each, one line:

NEED	WHO IT IS FOR	MET, PARTLY MET, OR SHORT	THE EVIDENCE (A FIGURE, A DATE, A NAME)

Part B · The ceiling (the outer ring). List the four or five flows that cross your coastline in the largest volumes. For most households: energy, food, water, travel, goods bought. For most firms: energy, materials, water, waste, transport. For each:

FLOW	THIS QUARTER (WITH ITS UNIT)	SAME QUARTER LAST YEAR	SOURCE OF THE FIGURE

Part C · The stock. Name three things you hold that this quarter's decisions could make better or worse: the soil of a supplier's farm, the condition of a building, the skill of a team, the health of a family member. For each, one sentence: better, worse or the same, and how you know.

Part D · The three separations. Answer three questions in a sentence each:

1 · Did money and throughput move in the same direction this quarter? If throughput rose faster than income, why?

2 · Did any decision raise a flow while lowering a stock?

3 · Of the changes you are proudest of, which were growth and which were development?

Part E · One move. Choose one line from Part A that is short, or one flow in Part B that is rising, and write the single change you will make before the next ledger. Name who will do it and by when.

Keep every quarter's page. After four quarters, lay them side by side. The first full chapter of a book about rings ends, appropriately, with a page you fill in four times a year.

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