

ECSTATIC ECONOMICS · VOLUME IV

The Standing Forest

Doughnut Economics for Leaders and Households, with the Figures You Already Hold

Ammanuel Santa Anna

Santa Anna, A. (2026). The Standing Forest: Doughnut Economics for Leaders and Households, with the Figures You Already Hold. Luminous Prosperity Inc. https://doi.org/10.5281/zenodo.23989542
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THE LICENCE

The Standing Forest
Doughnut Economics for Leaders and Households, with the Figures You Already Hold

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Published by Luminous Prosperity Inc. for Haute Lumière. Author ORCID 0009-0008-3244-0306.

DOI 10.5281/zenodo.23989542 · this record's page: business.hautelumiere.life/library/the-standing-forest/

Please cite as: Santa Anna, A. (2026). The Standing Forest: Doughnut Economics for Leaders and Households, with the Figures You Already Hold. Luminous Prosperity Inc. https://doi.org/10.5281/zenodo.23989542

A NOTE BEFORE YOU READ

This work is offered for education and leadership development. It is not legal, financial, accounting, investment, medical or psychological advice; take the advice of a qualified professional who knows your circumstances. Companies and events are described from the public record as the author understands it; characterisations are the author's analysis. Examples are illustrative, and no particular outcome is promised to any reader.

ABSTRACT

Every economy stands on a coastline: a floor of needs no one should fall beneath, a ceiling the living world can bear — and a firm or a household can learn to read both with the figures already in its drawer. Doughnut economics for leaders and households — the floor, the ceiling and the living world between, read with the figures you already hold.

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CHAPTER ONE

The Line on the Map



The Line on the Map

HAUTE LUMIÈRE · THE STANDING FOREST · CHAPTER ONE

Why this book, when the articles exist

The five essays at the centre of this book first appeared as a series in the Ecstatic Economics lineage at hautelumiere.life. They traced the idea of an economy inside the biosphere from John Stuart Mill to Raworth, stated its critics at their strongest, read it through the house's own living-systems lens, followed one city through it and set it beside its neighbours. They are here, revised into chapters, with the magazine furniture taken out and the repetition between them removed.

They were never the whole of what a leader needs. An essay can show that a firm is better seen as an organism in a habitat. It cannot hand a chief executive the twelve months of meetings that turn the seeing into a practice. An essay can say that measurement matters. It cannot sit with a board while the first honest number comes in worse than the one in last year's sustainability report. So seven chapters are new, and they are the reason this is a book.

Two are case chapters, both from the public record. One follows Wales and New Zealand, two governments that wrote into law and into a budget the proposition that the size of an economy is not its purpose. The other follows Costa Rica, which built a national programme to pay landowners for keeping forest standing, and which has been studied closely enough that its results can be stated with their error bars. One chapter is about measurement: what to count, in which unit, and how to read it honestly when it disappoints. One is a field manual, a year of work set out week by week, with the roles and the decisions named. One is about the hard conversations: the board member who thinks this is a fashion, the union representative who suspects it is a pay freeze in green clothing, the partner at home who would rather not talk about the car. It carries scripts. One brings the whole idea down to a single household's money and work. And the last is a workbook, which gathers every tool in the book onto its own pages, with a ninety-day plan at the end.

Who it is for

It is for a person who is responsible for something. A chief executive or a finance director, a head teacher, the chair of a housing association, the owner of a bakery, the treasurer of a congregation, a parent with a mortgage. The ideas in it were developed for nations and the planet, and they are at their most useful at the scale where one person can see the whole of the ledger.

It is not a book of investment advice and it offers none. It promises no return. It does not argue that growth is bad, or that every firm should stop growing, or that a household should give up its car. It argues something narrower and more useful: that any organisation can see the ground it stands on, with figures it already holds, and that seeing it changes what counts as a sensible decision on an ordinary Tuesday.

Why now

There are three reasons, and none of them is a deadline.

The first is that the science has matured. When Johan Rockström and his colleagues proposed nine planetary boundaries in 2009, three were estimated to have been crossed and several could not yet be quantified.[1] In 2023 Katherine Richardson and colleagues quantified all nine for the first time and reported that six were transgressed.[2] A framework that has been revised in the open for fourteen years, and has published its own uncertainties at every step, is no longer a manifesto. It is an instrument with known tolerances, and an instrument with known tolerances can be used.

The second is that the evidence on the social side has caught up. In 2018 Daniel O'Neill, Andrew Fanning, William Lamb and Julia Steinberger compared more than one hundred and fifty countries and found that no country met basic needs for its citizens at a globally sustainable level of resource use.[3] In 2022 Fanning, O'Neill, Jason Hickel and Nicolas Roux followed more than one hundred and forty countries from 1992 to 2015 and found that countries tend to transgress biophysical boundaries faster than they achieve social thresholds.[4] Those are sobering sentences. They are also exactly the kind of sentence a leader can work with, because they say where the problem is: in the way needs are met, not only in how much is produced.

The third reason is practical. The tools have come down to a usable size. Amsterdam drew a portrait of itself inside the ring in 2020, and the method it used is short enough to be run by a leadership team in two half-days. More than fifty local governments, by the account of the organisation that promotes the approach, have since taken it up. A method that has been run by cities can be run by a firm.



The house's reading

HAUTE LUMIÈRE · THE STANDING FOREST · CHAPTER ONE

The house's reading

This book belongs to a lineage whose root is Ammanuel Santa Anna's *Ecstatic Economics*, and it takes from that book a reading of the subject that ecological economists have mostly left to one side. The ecologists were right that an economy is a physical process. Santa Anna states the physics more bluntly than most of them:

> *Every economy exists within a biosphere. When the economy degrades the biosphere, it degrades the foundation of its own possibility. This is not a matter of opinion. It's thermodynamics.*[5]

What the book adds is a claim about people. It argues that knowing the figures has never been the difficulty:

> *The information hasn't been the bottleneck.*[6]

and that the difficulty sits somewhere less comfortable, in the body of a person who is frightened of not having enough. A frightened finance director at two in the morning does not open the second spreadsheet. A frightened board does not look at the gas bill beside the revenue line. The method in this book is designed with that in mind. It begins with what an organisation already does well, it uses figures already held, it sets no target in its first quarter, and it treats every objection as a line in a register rather than a threat to be managed. None of that is softness. It is the condition under which the second set of figures can be read at all.

The reading also adds a third ring to Raworth's two. Her floor and ceiling can be measured from outside. Santa Anna argues that an economy can meet the floor and respect the ceiling and still leave the people inside it exhausted, and that their aliveness is part of what an economy is for. That claim is harder to measure than carbon, and Chapter 4 and Chapter 8 are careful about how far it can be pushed. It is still the right question, and a book that left it out would be shorter and less true.

What the book will not do

Three things are left out on purpose, and a reader is owed the reasons.

The book does not try to settle the argument between ecological economics and the mainstream. That argument is fifty years old and conducted by serious people on both sides. Chapter 3 states the strongest objections to the doughnut and the steady state, says what the evidence supports, and turns each one into a question a household or firm can answer with its own figures. That is a smaller aim than settling the argument, and a more useful one for a reader with a business to run.

It does not offer a single score. There are indices that try to combine an economy's social and ecological performance into one number, and Chapter 8 discusses the most careful of them. Each hides its judgements inside its arithmetic. This book asks a reader to count each flow and each need in its own unit and to look at them side by side. It is less elegant, and it is harder to argue with.

And it does not tell anyone what to give up. The ring has a floor as well as a ceiling. For a firm whose people are paid below a living benchmark, the first move is upward. For a household that is short of something it needs, the first line of the ledger is that need. The book is agnostic about growth in the way Ra-

worth asks: where growth fills the floor, it is the point, and where it presses on the ceiling, development without further throughput is the point. Which of those a given organisation faces is something its own figures will show, and nobody else's.



How to read it

HAUTE LUMIÈRE · THE STANDING FOREST · CHAPTER ONE

How to read it

The chapters run in an order, and each stands alone. A reader who wants the history and the argument can read Chapters 2 to 5 as a short course. A leader who has already been persuaded and wants to begin can go

straight to Chapter 9, the field manual, and use the workbook beside it. A board member preparing for a difficult meeting can go to Chapter 10. A reader who wants to start at home can begin with Chapter 11.

Every chapter that teaches ends with a tool, written out in full and named at its foot. They are gathered again, with a ninety-day plan, in the workbook at the back. Every figure has a source, every source is in the notes, and every note says what its source cannot show. Where a case is a composite, built for teaching, it says so in the same paragraph. The book quotes Santa Anna's own writing where it says a thing better than a summary could, and every such quotation has been checked word for word against his manuscript.

Four neighbouring books in this lineage take up ideas this one only touches. Elinor Ostrom's work on governing a commons is the subject of *The Pasture Was Never Empty*. The economy as an evolving system, with its increasing returns and lock-in, is the subject of *The Economy That Keeps Becoming*. Regenerative and circular enterprise is the subject of regenerative economies. And the oldest question of all, whether scarcity is a fact of nature or a choice of design, is the subject of *Enough by Design*. The closing chapter of this book sets the ring beside each of them.

One image to carry in

Hold the finance director at two in the morning. Nothing in this book asks her to stop closing the year. It asks her to open the second spreadsheet beside the first, and to notice, before anyone tells her what to do about it, that the two have been describing the same building all along.

CHAPTER TWO

The Economy Has a Coastline



The Economy Has a Coastline

HAUTE LUMIÈRE · THE STANDING FOREST · CHAPTER TWO

A map with no edge

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.

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

HAUTE LUMIÈRE · THE STANDING FOREST · CHAPTER TWO

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

HAUTE LUMIÈRE · THE STANDING FOREST · CHAPTER TWO

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

HAUTE LUMIÈRE · THE STANDING FOREST · CHAPTER TWO

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?

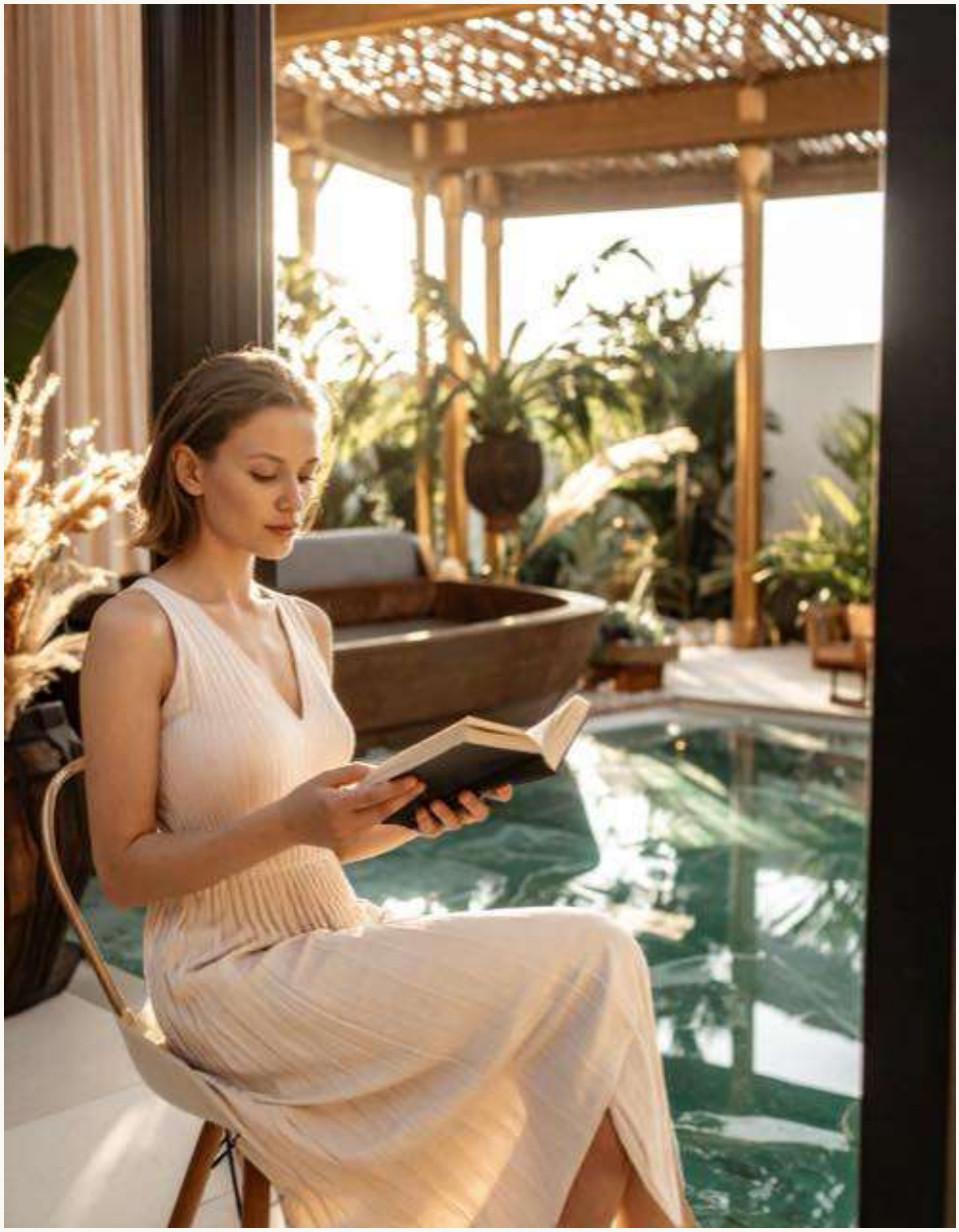
3 · Of the changes you are proudest of, which were growth and which were development?

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.

CHAPTER THREE

Where the Ring Leaks



Where the Ring Leaks

HAUTE LUMIÈRE · THE STANDING FOREST · CHAPTER THREE

The courtesy of a good objection

An idea that has never been argued with has not yet been used. The steady state and the doughnut have been argued with for half a century, by economists who were neither careless nor hostile, and the arguments are worth knowing in their best form. A leader who brings the doughnut into a boardroom will meet each of them within the first hour, usually from the most thoughtful person in the room. A household that tries to live by it will meet several of them at the kitchen table.

Chapter 2 traced the idea from Mill's stationary state to Kate Raworth's ring. This chapter takes six objections in turn. For each, it states the criticism as its strongest advocate would, says what the evidence supports, and then gives a way through that leaves the idea more useful than before the objection was raised. None of them is fatal. Several of them improve the idea considerably.

Santa Anna's *Ecstatic Economics* has a habit that suits this kind of chapter: it closes its chapters by naming the ways its own argument can be misread. In one of those passages it says something that ecological economists have been slow to say about their own field:

> *But here's where we must be honest about the limits of the argument: ecological awareness alone won't transform economic behavior.*[22]

That honesty is the right temperature for what follows.

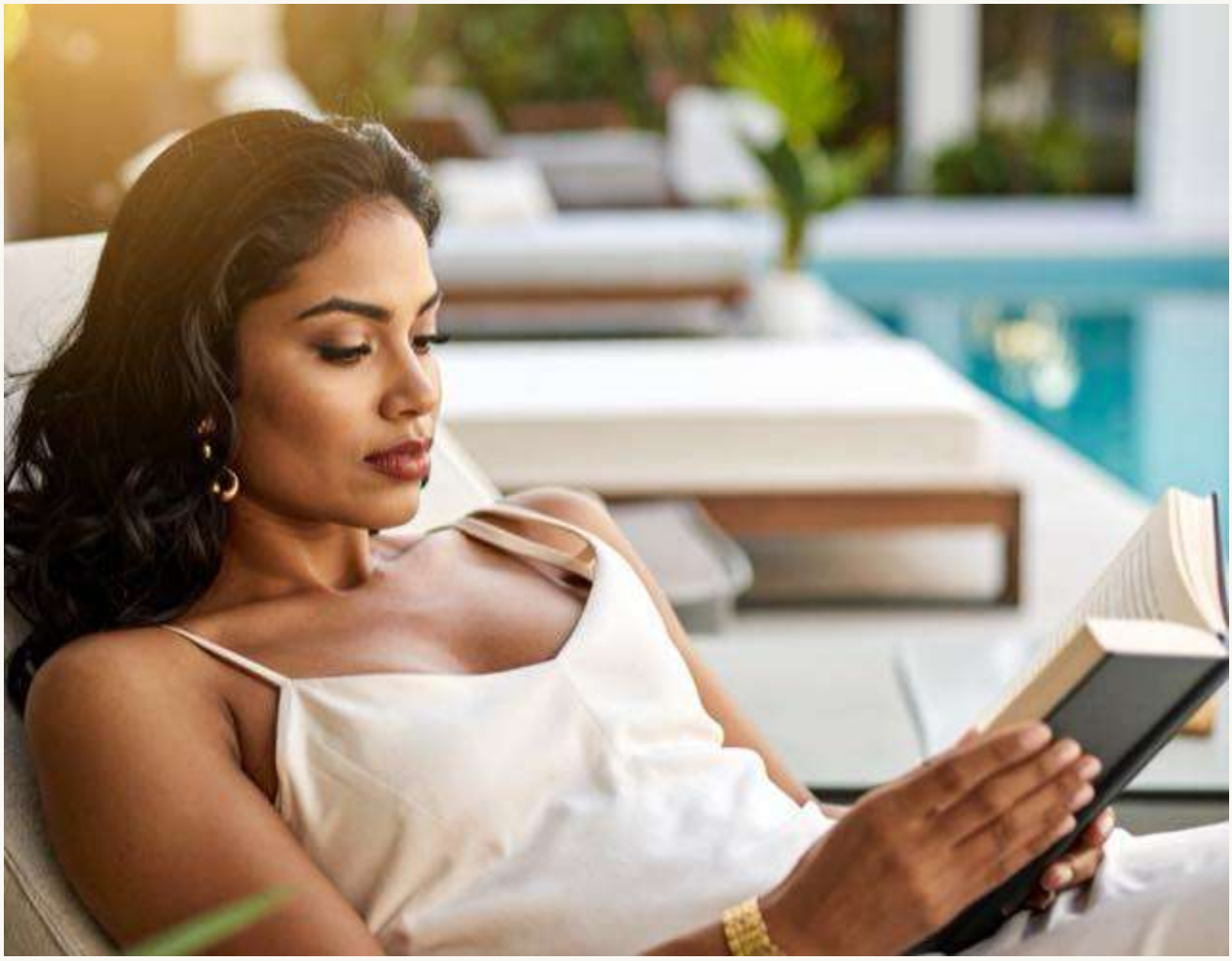
Objection one: substitution will carry us

The objection, at its strongest. Economies have met scarcity before by substituting one input for another: coal for wood, oil for whale fat, fibre optics for copper. Prices rise as a resource tightens, and rising prices call forth invention. The 1972 *Limits to Growth* models, the argument goes, left this mechanism out. William Nordhaus, who would later share the Nobel memorial prize for his work on climate economics, made the case most carefully in 1992, in a long paper in the *Brookings Papers on Economic Activity* titled "Lethal Model 2: The Limits to Growth Revisited". He found that the models' conclusions depended heavily on assumptions about technological change and substitution, and argued that a reasonable allowance for both pushed the limits far out.[23]

What the evidence supports. Substitution is real and has been enormous. But substitution has a direction. It works well between resources that are traded and priced, and poorly for the things nobody owns and nobody bills: a stable climate, the pollinators, the nitrogen balance of a river. Those are exactly the processes the planetary boundaries measure. Nordhaus himself spent the next three decades arguing that the climate needed a price precisely because the market would not supply one.

The way through. Treat substitution as a question to be answered flow by flow, not a faith to be held in general. For each major flow across your coastline, ask: is there a priced substitute, is it available at the

scale we need, and does it relieve the boundary or merely move the load to another one? A firm that swaps one packaging material for another may have relieved landfill and added energy. The question is useful precisely because it forces a specific answer.



Objection two: we can decouple

HAUTE LUMIÈRE · THE STANDING FOREST · CHAPTER THREE

Objection two: we can decouple

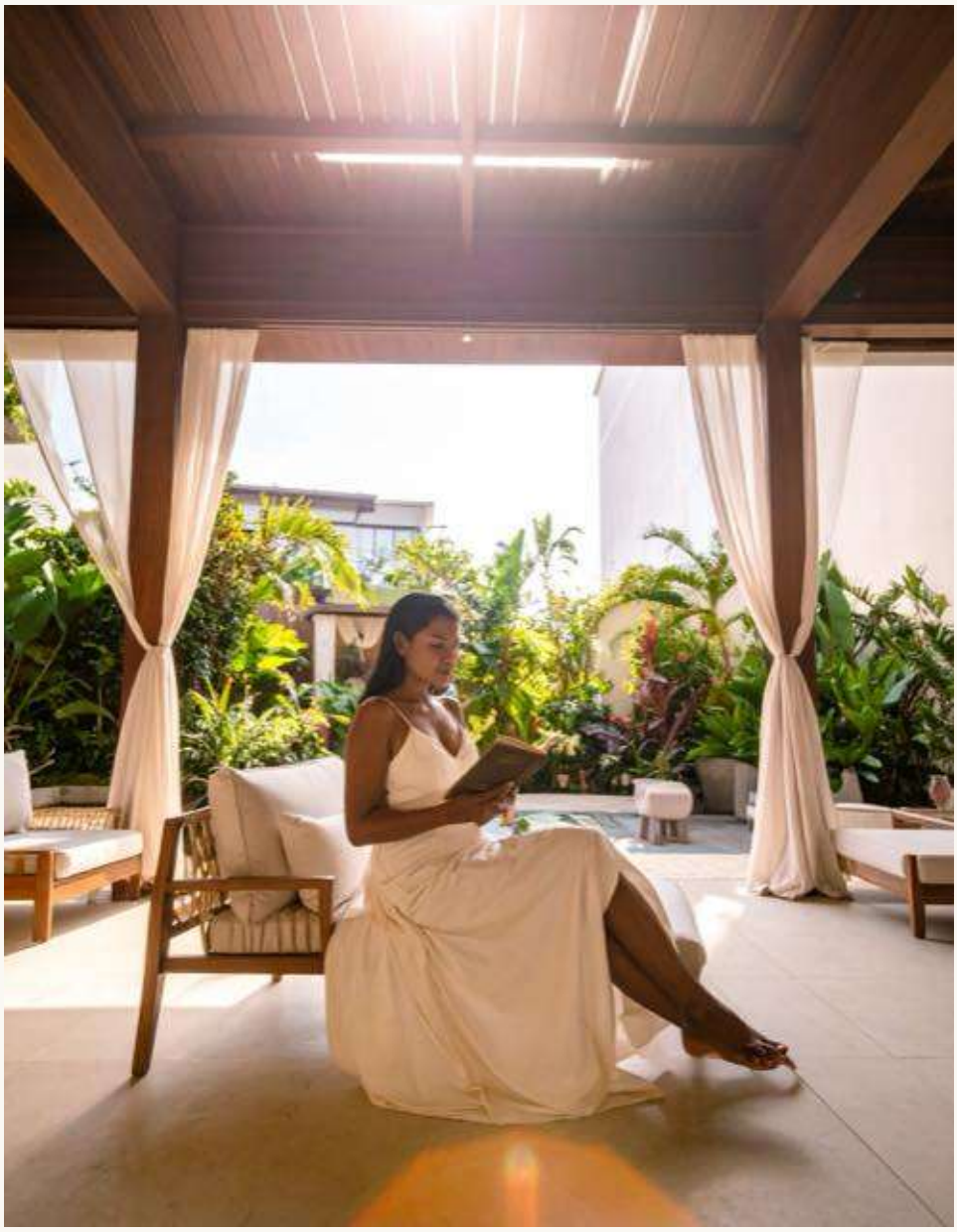
The objection, at its strongest. Growth in GDP is growth in value, not in tonnes. As economies shift towards services, software and design, the value added per unit of material and energy rises. Several rich countries have cut their territorial carbon emissions while their GDP grew. If that continues, the ring need not constrain growth at all; the economy can grow in money while shrinking in matter. This is the position usually called green growth, and it is the working assumption of most national strategies.

What the evidence supports. This is the objection the research has examined most closely, and the findings are now fairly clear. In 2020 Helmut Haberl and colleagues published a systematic review in *Environmental*

Research Letters that synthesised 835 peer-reviewed studies of decoupling.[24] They found relative decoupling, where resource use or emissions grow more slowly than GDP, to be frequent. They found examples of absolute long-term decoupling, where GDP rises while resource use or emissions actually fall, to be rare, though some industrialised countries have recently decoupled GDP from production-based carbon emissions, and more weakly from consumption-based emissions. In the same year Jason Hickel and Giorgos Kallis, reviewing historical trends and model-based projections in *New Political Economy*, concluded that there was no empirical evidence that absolute decoupling from resource use could be achieved on a global scale against a background of continued growth, and that absolute decoupling from carbon was highly unlikely to happen fast enough to hold warming to 1.5 or 2 degrees.[25]

Both papers are careful about what they cannot show. A review of what has happened cannot rule out what has not yet been tried. Hickel and Kallis argue from projections, and projections depend on assumptions.

The way through. Stop arguing about decoupling in general and measure it in particular. The useful distinction is the one Haberl's team drew: relative or absolute, and on what basis, production or consumption. A business can report each of its major flows in absolute units alongside revenue, and say plainly which kind of decoupling it achieved this year. That is a more honest number than most sustainability reports carry, and it settles the argument in the only place where it can be settled: the firm's own ledger.



Objection three: the boundaries are not that precise

HAUTE LUMIÈRE · THE STANDING FOREST · CHAPTER THREE

Objection three: the boundaries are not that precise

The objection, at its strongest. The planetary boundaries are estimates set by a group of scientists, at the cautious end of wide ranges of uncertainty. Several have been redefined since 2009. Some, such as novel entities, were not quantified at all until recently. Others are global by nature and say nothing about a particular river or field. Building a business or a city plan on numbers this soft, the critic says, is building on sand.

What the evidence supports. The objection is accurate about the uncertainty and wrong about its consequence. The framework's authors say themselves that a boundary marks the start of a zone of increasing risk, not a cliff. The framework has been revised in the open: Will Steffen and colleagues updated it in *Science* in 2015, and in 2023 Katherine Richardson and colleagues quantified all nine boundaries for the first time and reported in *Science Advances* that six of them were transgressed, with ocean acidification close to its boundary and the transgression level increased for every boundary previously identified as overstepped.[26] A framework that publishes its own revisions is behaving like science.

The way through. Use the boundaries the way a ship's officer uses a chart marked with shoals: as zones of rising risk, not as lines of legality. For a firm, the practical step is downscaling: translating a global boundary into a fair share for a city, a sector or a company. Every method of downscaling rests on a choice about fairness, whether by population, by past emissions, by capacity to pay. The way through is not to avoid the choice but to write it down. A target that names the fairness rule it used can be argued with. A target that hides it cannot.

A short illustration shows why the rule matters more than the arithmetic. Suppose a regional food company wants to know its fair share of a carbon budget. Divided by its share of national employment, it gets one figure. Divided by its share of national value added, it gets another, usually larger, because food processing adds less value per worker than finance does. Divided by its share of the calories its region eats, it gets a third. None of the three is wrong. Each encodes a different belief about what the company is for. Writing the chosen rule at the top of the page, with the other two beside it, turns a hidden value judgement into a decision a board can own. It also makes the target harder to quietly revise when a difficult year arrives.

Objection four: who sets the floor?

The objection, at its strongest. The ceiling at least comes from Earth-system science. The floor, the social foundation, is a list of human needs drawn up by people. Raworth's 2017 dimensions were drawn largely from the Sustainable Development Goals. Another author, in another country or another decade, would draw a different list. A framework that puts a political choice beside a physical measurement, the critic says, borrows the authority of the second for the first.

What the evidence supports. The list is a political choice, and Raworth has never pretended otherwise. But it is not an arbitrary one. The needs on it, food, water, health, education, housing, energy, voice, equity, work, peace, recur in nearly every serious attempt to list what a decent life requires, from Manfred Max-Neef's human-scale development to Amartya Sen's capabilities, which another book in this lineage takes up.

The way through. Treat the floor as something a community sets for itself, in the open, with the people it is for. Elinor Ostrom's design principles for governing a commons, the subject of a neighbouring book, begin

with clearly defined boundaries and with collective-choice arrangements in which the people affected by the rules can take part in changing them. A firm's floor, written with its workers and suppliers rather than for them, carries more authority than one drawn from a textbook, because the people who hold it to account helped draw it.



Objection five: the economy is built to need growth

HAUTE LUMIÈRE · THE STANDING FOREST · CHAPTER THREE

Objection five: the economy is built to need growth

The objection, at its strongest. Even if a steady state were desirable, modern economies are wired to require growth. Pensions are invested on the assumption of returns. Public debt is sustainable only if the economy grows faster than the interest on it. Rising productivity means that, without growth, the same output needs fewer workers each year, and unemployment rises. Stop growing, the critic says, and you do not get Daly's glider; you get a stall.

What the evidence supports. The objection describes the present system correctly. Daly's answer, as Chapter 2 noted, was that a steady state has to be designed, not stumbled into, and that a recession is a growth economy failing, not a steady state succeeding. The more recent evidence has moved the argument forward. In 2021 Elena Vogel, Julia Steinberger, Daniel O'Neill and colleagues analysed 106 countries in *Global Environmental Change* to see which social and economic conditions let a country meet human needs with less energy.[27] Public service quality, income equality, democracy and electricity access were associated with higher need satisfaction at lower energy use. Extractivism and economic growth beyond moderate levels of affluence were associated with the opposite. The study is correlational, across countries, and cannot show what would happen if one country changed one factor. But it points to where the design work lies: in the systems of provision that turn energy and materials into a decent life.

The way through. For a nation, that is a matter for policy, and other books in this lineage take it further, notably the one on patient capital and short-termism. For a firm or a household, the same logic applies at small scale. Ask which of your commitments only work if you keep growing: a loan whose repayments assume rising sales, a cost base that only covers itself at higher volume, a family budget that depends on next year's raise. Each one is a place where your own structure, not the planet, is demanding growth. Each can be redesigned, slowly, so that a good year is welcome and a flat year is not a crisis.

Santa Anna's book names the general pattern in its chapter on money, observing that when money is created as debt bearing interest, "the system requires continuous growth simply to service existing debt".[28] Whether that claim holds for the monetary system as a whole is disputed among economists, and this book does not settle it. It holds without dispute for any single borrower.



Objection six: the poorest need growth

HAUTE LUMIÈRE · THE STANDING FOREST · CHAPTER THREE

Objection six: the poorest need growth

The objection, at its strongest. A steady state may suit a rich country that already has enough. For a country where a large share of people lack clean water, reliable electricity or a secondary school, a ceiling on growth is a ceiling on escape from poverty. To preach limits to the poor, the critic says, is to pull up the ladder.

What the evidence supports. This is the objection that the doughnut itself was built to answer, and the evidence supports its structure. In 2018 Daniel O'Neill, Andrew Fanning, William Lamb and Julia Stein-

berger, writing in *Nature Sustainability*, compared more than 150 countries on social thresholds and biophysical boundaries and reported that no country meets basic needs for its citizens at a globally sustainable level of resource use. Their finer finding is the more useful one: physical needs such as nutrition, sanitation, access to electricity and the elimination of extreme poverty could likely be met for all people without transgressing planetary boundaries, while the more qualitative goals, high life satisfaction among them, would on current relationships require two to six times the sustainable level of resource use.[29] In a follow-up across more than 140 countries from 1992 to 2015, using eleven social and six biophysical indicators, Fanning, O'Neill, Hickel and Nicolas Roux reported that countries tend to transgress biophysical boundaries faster than they achieve social thresholds. Over the period the share of countries overshooting biophysical boundaries rose from between 32 and 55 per cent to between 50 and 66 per cent, depending on the indicator; social thresholds were met by more countries on five indicators, by fewer on two, social support and equality, and showed little change on the other four.[30] The pattern is two-sided: the richest overshoot the ceiling, the poorest fall short of the floor. The doughnut asks different things of each.

The way through. Raworth's phrase is to be agnostic about growth, which is not the same as being against it. Where the floor is short, growth that fills it is the point. Where the ceiling is overshot, development without further throughput is the point. A firm with operations or suppliers in many countries can apply the same two-sided reading: grow wages and capability where the floor is short, cut throughput where the ceiling is overshot, and stop treating one policy as right for both.

The objection the critics miss

There is a seventh weakness, and it comes from inside the movement rather than from its critics. It is the belief that once people see the data, they will change. Santa Anna's book states it directly:

> *The information hasn't been the bottleneck.*[31]

And it gives a reason most ecological economists would not:

> *You cannot guilt or shame people into ecological behavior when their nervous systems are organized around survival.*[32]

That is a claim about people, not physics, and the book does not offer controlled evidence for it. But it matches what any leader has seen in a room where a frightening slide is shown. Fear narrows attention. A team that feels its own position is under threat will not take on a planetary one. The book's answer, which Chapter 4 takes up, is that structural change and inner change have to move together:

> *Consciousness transformation and structural transformation must proceed together. Neither can substitute for the other.*[33]

The way through, for a leader, is practical. Do not open with the boundary chart. Open with what the organisation already does well inside the ring, the flows it has already reduced, the needs it already meets, and then name the one flow that is overshooting. People who feel secure in what they have done can look at what they have not.

What this chapter cannot settle

Six objections and six ways through do not settle the debate between ecological and mainstream economics, and this chapter does not claim to. The decoupling evidence is strong on the past and silent on what has not been tried. The cross-country studies are correlational. The boundaries are honest estimates with honest error bars. What the review does support is narrower and more useful: every one of the objections can be turned into a question that a specific household or firm can answer with its own figures. That is the test this book applies throughout.

The Tool: The Objection Register

A standing document for any board, team or household that has decided to work inside the ring. Its purpose is to keep every objection on the table, answered and tested, rather than dismissed or allowed to stall the work. It takes ten minutes to add a line and is reviewed once a quarter, alongside the Two-Ring Ledger from Chapter 2.

Columns.

#	THE OBJECTION, IN THE WORDS OF THE PERSON WHO RAISED IT	RAISED BY, AND DATE	WHICH OF THE SIX IT BELONGS TO (OR NEW)	WHAT OUR OWN FIGURES SAY	THE TEST THAT WOULD SETTLE IT	OWNER	REVIEW DATE	STATUS

How to fill it.

1 · Record the objection in the raiser's own words. Do not tidy it. A tidied objection is easier to answer and less likely to be the real one.

2 · Classify it. Most objections are one of the six above: substitution, decoupling, precision, the floor, growth dependence, or the needs of the poorest. If it is none of these, mark it new; new objections are the most valuable lines in the register.

3 · Answer from your own figures first. Before reaching for a study, write what your own ledger shows. If the objection is about decoupling, the answer is your own absolute flows against your own revenue.

4 · Write the test. Every objection that cannot be answered from existing figures gets a test: a measurement, a trial, a comparison, with a date. A test with no date is not a test.

5 · Close it honestly. Status is one of four words: *answered* (our figures settle it), *testing* (a trial is running), *conceded* (the objection is right and we have changed the plan), or *open*. The register is healthy when it has at least one *conceded* line in a year. An organisation that has never conceded an objection has not been listening.

Two rules.

- Nobody may close their own objection. The person who raised it, or someone else in the room, marks it answered.
- Read the *conceded* lines aloud at the start of each annual plan. They are the best record you have of what the ring has taught you.

CHAPTER FOUR

The Organism and Its Habitat



The Organism and Its Habitat

HAUTE LUMIÈRE · THE STANDING FOREST · CHAPTER FOUR

One organism, seen properly

A field ecologist who wants to understand a wood does not begin with the wood. She begins with one creature in it, a particular badger, say, and asks four questions. What does it eat, and how much? What does it give back to the wood, in burrows turned, seeds carried, droppings left? Whom does it depend on, and who depends on it? And is it thriving, in the plain sense that a trained eye can see in its coat and its gait?

Chapters 2 and 3 treated the doughnut the way economists usually treat it: as a global framework, a ring of boundaries and needs drawn around the whole of humanity. This chapter reads it the way the ecologist reads the wood, through one organism. The organism is a firm, or a household, or a city. The ring is its habitat. The four questions are the same.

This is the house's own reading, and it rests on a sentence from Santa Anna's *Ecstatic Economics* that inverts the usual order of the subject:

> *The key insight of the Honorable Harvest — and of Indigenous economic wisdom more broadly — is that the economy is a subset of ecology, not the other way around.*[34]

The rest of this chapter takes that sentence literally and follows it into practice.

The first reading: nesting

Raworth's doughnut is usually printed as two rings. Her book also contains a second picture, less famous and in some ways more important, which she calls the embedded economy: the household, the market, the commons and the state drawn inside society, and society drawn inside the living world, with energy coming in from the sun and heat leaving.[35] Herman Daly drew a simpler version decades earlier, a small box called the economy inside a larger circle called the ecosystem, with arrows of matter and energy passing through.

Santa Anna takes the nesting further, and his framing in an essay from his *Developmental Canon* sets the scale:

> *The economy is a subsystem of the biosphere. The biosphere is a subsystem of the Earth.*[36]

The useful word, for a leader, is *subsystem*. A subsystem cannot outgrow the system that contains it; it can only reorganise itself inside it. Arthur Koestler gave the house its preferred word for the parts of such a structure, the holon, a thing that is whole in itself and part of something larger. A firm is a holon. It is whole, with its own purpose and its own accounts, and it is part of a town, a supply chain, a watershed. Its decisions are good only if they are good at both levels.

The Luminous 100, the house's corpus of upgraded management frameworks, makes the same move on a familiar tool. Ordinary PESTLE analysis treats political, economic, social, technological, legal and environmental forces as weather outside the firm. The house's version reads them as

> *nested living systems in which your organization participates, not merely endures.*[37]

Alpha PESTLE is the instrument in this house that puts that reading to work. The practical difference is in one verb. A firm that *endures* its environment plans defences. A firm that *participates* in it asks what it contributes to the systems that hold it, and what it takes from them.

The second reading: metabolism

Daly's 1968 paper argued that an economy is best understood as a metabolism.[38] Taken down to one organisation, the image is unusually practical. Every firm has a diet: the energy, materials, water and attention it takes in. It has a body: the buildings, machines, skills and relationships it maintains. It has wastes: the emissions, scrap, packaging and exhaustion it gives off. And it has an output, the goods and services it exists to provide.

Seen this way, three questions replace the usual one. The usual question is whether output is rising. The metabolic questions are these. How much does the organism eat for each unit of what it provides? How much of what it eats leaves as waste rather than as product? And is the body being maintained or consumed? A firm can raise output while its body wastes away, through skills not renewed, equipment not maintained, suppliers squeezed until they fail. In an animal, that is called starvation. In a firm, it is often reported as a record year.

Santa Anna's book names the accounting blindness behind this with a single image:

> *In standard economic accounting, a forest has value only when it's cut down.*[39]

The forest is the firm's body seen from the outside. The standing timber, the skilled team, the trusted supplier, the healthy soil in a grower's field: none of them appears as income until it is sold, and some of them never appear at all. The book's sentence on what follows is the most exact description of the problem this book has found:

> *everything that cannot be priced disappears from the ledger. And then, gradually, it disappears from reality.*[40]

The metabolic reading is a way of putting those things back on the ledger, not by pricing them all, which the next section argues against, but by counting them in their own units.



The third reading: feedback

HAUTE LUMIÈRE · THE STANDING FOREST · CHAPTER FOUR

The third reading: feedback

An organism in a habitat is held in place by feedback. When it eats too much, its food grows scarce; when it eats too little, it weakens. Ecologists call the stabilising kind balancing feedback and the amplifying kind reinforcing feedback, the vocabulary Peter Senge brought into management in *The Fifth Discipline* in 1990.

The trouble with an economy that cannot see its coastline is that it breaks the balancing loops. The signal that should come back from an overfished sea, an exhausted workforce or a depleted aquifer arrives late, or

arrives in someone else's accounts, or does not arrive at all. A doughnut, read this way, is a device for restoring feedback: it makes the overshoot visible to the organism causing it.

The Luminous 100's reading of systems thinking adds a turn the conventional discipline tends to miss. Conventional analysis hunts for vicious circles. The house's version asks a second question first:

> *Where are the virtuous cycles already alive in this system?*[41]

That question changes the work in a specific way. Every organisation inside the ring already has some balancing loops that work: a maintenance schedule that catches wear early, a supplier relationship honest enough to carry bad news, a team that stops when it is tired. The first job of a leader is to find those, name them and strengthen them, because a new loop built beside a working one is far easier to keep than a new loop built in a vacuum. The subject of how economies behave as evolving systems of such loops belongs to a neighbouring series in this lineage.

The fourth reading: relationship and reciprocity

The badger depends on the wood and the wood depends, in small ways, on the badger. The ecologist's fourth question, whom does it depend on and who depends on it, is the one that ordinary stakeholder analysis answers most poorly. The standard grid sorts people by power and interest and assigns each quadrant a strategy: manage closely, keep satisfied, keep informed, monitor. The Luminous 100's version of the tool asks a different opening question:

> *Who are the living beings and systems affected by this decision?*[42]

and then makes a substitution that any leader can make on Monday, "replacing "manage closely" with "deepen relationship" and "monitor" with "extend awareness and care."" The house instrument for this work is Alpha Stakeholder Map.

The ecological reason for the substitution is reciprocity. Santa Anna's book draws it from the Honorable Harvest and states it as the minimum condition for an economy on a finite planet: every taking balanced by a giving, every extraction matched by a restoration.[43] In a firm's metabolism, that means each major input has an answering contribution: the supplier whose soil the firm's purchases depend on is paid enough, and early enough, to keep the soil in heart; the town whose water the plant uses receives something back in kind. The neighbouring book on gift and reciprocity follows this principle into the experimental evidence.

The fifth reading: vitality, the third ring

The four readings so far would be recognised by any ecological economist. The fifth is the house's own addition, and it is the one Chapter 2 promised to return to.

Raworth's doughnut has a floor and a ceiling. Both can be measured from outside: a share of people with access to clean water, a concentration of carbon dioxide. Santa Anna's book argues that something lies inside the ring that neither measure can see:

> *What we add to Raworth's framework — and what the integral approach enables us to add — is the interior dimension. It is not enough to meet the social foundation and stay within the ecological ceiling.*[44]

The book calls it the vitality dimension: the felt aliveness of people inside the economy, and it makes a strong claim about its status: "It is a core indicator of economic health."[45] A society, it argues, can satisfy every material metric and still be full of exhausted and anxious people.

There is a reasonable objection to this, and it is worth stating. Felt aliveness is hard to measure, easy to fake in a survey and open to abuse by an employer who would rather improve morale than wages. The book anticipates part of it. In its chapter on policy it warns about what it calls measurement myopia, writing that "If a cooperative measures its success only in financial terms, it will gradually drift toward extractive behavior", and concedes that designing multi-dimensional measurement "is among the most important — and most difficult — practical challenges the movement faces."[46]

The way through, for a single organisation, is to treat vitality as the ecologist treats the badger's coat: as something observed carefully over time by people trained to see it, never as a single number. The questions are plain. Do people take their full leave? Do they stay? Do they bring problems forward early? Do they have time to learn? Each has an ordinary record behind it. None of them replaces the floor or the ceiling; all of them tell you whether the organism inside the ring is alive.



The five readings in one bakery

HAUTE LUMIÈRE · THE STANDING FOREST · CHAPTER FOUR

The five readings in one bakery

A short sketch shows how the readings work together. The bakery here is a composite, built for teaching; it is not a real business, and its figures were set by the writer.

A neighbourhood bakery employs eleven people and sells bread, pastries and coffee to about six hundred customers a day. Read conventionally, it had a good year: revenue up nine per cent, margin steady.

Read by nesting, the owner notices that the bakery sits inside three systems it had never named: the regional wheat it buys through a single miller, the street whose footfall it depends on, and the town's water and power. A rise in footfall from a new office block nearby accounts for most of the year's growth. The bakery did not earn it; the street gave it.

Read by metabolism, the diet is clear from the invoices: flour up eleven per cent, energy up fourteen per cent, against revenue up nine. The organism is eating more for each loaf than it did last year. The waste ledger, which nobody had kept, turns out on a week's count to be about one loaf in nine unsold at closing.

Read by feedback, there is already a virtuous cycle alive in the system. The two senior bakers adjust the next morning's quantities from the previous night's leftovers, and on the days they do it carefully, waste falls by half. Nobody had named this as a practice. Naming it, and giving the junior staff the same habit, is the year's cheapest improvement.

Read by reciprocity, the owner sees that the miller has been paid at sixty days for three years while the bakery's own customers pay at the till. A small business is financing a larger one's convenience. Moving the miller to thirty days costs the bakery a little cash and buys it a supplier who calls first when the harvest is short.

Read by vitality, the record shows that two of the eleven staff took less than half their leave, and both are the senior bakers whose judgement holds the waste loop together. The organism's most valuable balancing loop is running on two tired people.

None of these findings required a consultant or a new system. All of them were invisible in the year-end accounts, which reported a good year. The five readings did not contradict the accounts. They showed what the accounts were standing on.



Why not price everything?

HAUTE LUMIÈRE · THE STANDING FOREST · CHAPTER FOUR

Why not price everything?

A reader trained in mainstream environmental economics will ask why this chapter does not simply recommend putting a price on every ecological flow and letting the accounts do the rest. Pricing has real uses. A carbon price makes an invisible cost visible to every buyer at once.

The difficulty is the one Robert Costanza and colleagues met in 1997, when they estimated the value of the world's ecosystem services at about US$33 trillion a year, with a range of 16 to 54 trillion, larger than global gross national product at the time.[47] The study made a point that needed making: the services were enorm-

ous and absent from the accounts. Critics answered that a total value for the services without which there would be no economy at all is an odd figure, and that marginal values for a particular marsh or forest are far more useful than a planetary sum. The house's reading agrees with the critics on method and with Costanza on purpose. Count flows in their own units first, in tonnes, litres, hectares, hours, and price them where a price changes a decision. The price is a lens. It is never the thing.

What the living-systems reading cannot do

It cannot replace measurement. The image of a firm as an organism is a way of choosing what to measure, not a substitute for measuring it. It cannot settle the policy arguments of Chapter 3. And it can be misused, as any organic metaphor can, to make a hierarchy sound natural or a hardship sound inevitable. The book itself warns against the version of its argument that treats inner change as a substitute for structural change. The reading earns its place only when it leads to a better ledger and a better decision.

There is also a limit of scale. A single organisation's map shows its own metabolism with some precision and its habitat only roughly. The bakery can count its flour; it cannot count the soil carbon of the farms its miller buys from, or the share of the town's water stress that its ovens represent. Those questions need the larger organisms, the sector, the city, the region, to draw their own maps and share them. That is one reason the next chapter turns to a city.

The Tool: The Metabolism Map

One sheet, drawn by a small team in about ninety minutes, redrawn once a year. It turns the five readings into a picture a leader can hold. It works as well for a household as for a firm, and the household version is often the more revealing.

Draw three nested shapes. An outer circle labelled *the living world*. Inside it, a circle labelled *the people and places we depend on*. Inside that, a box labelled *us*.

1 · The diet (arrows in). Draw an arrow into the box for each of the five largest inputs: energy, materials, water, purchased services, and people's time. Label each with its annual quantity in its own unit, and its source: the utility, the supplier, the region.

2 · The wastes (arrows out to the outer circle). Draw an arrow out for each of the largest wastes: emissions, scrap, packaging, water discharged. Label each with its quantity and where it goes.

3 · The output (arrow out to the middle circle). One arrow for what you exist to provide, with its quantity.

4 · The body. Inside the box, list five things the organisation maintains: buildings, equipment, skills, records, relationships. Mark each *maintained*, *growing* or *being consumed*, with one piece of evidence.

5 · The loops. Draw any balancing loop you can already see: a signal that comes back from the outer circles and changes what you do. Mark them in a second colour. Then answer the Luminous question in one line: where is a virtuous cycle already alive here?

6 · The reciprocities. For each input arrow, write what you give back to its source, if anything. Leave the blank ones blank. They are the most useful marks on the page.

7 · The coat. In one corner, four observations of vitality, each with its record: leave taken, people staying, problems raised early, hours spent learning.

8 · One change. Circle the single place on the map where a small change would restore the most feedback, and write the change beneath it.

Pin the map where the team will see it. Next year, draw it again without looking at the old one, then lay them side by side. Chapter 5 shows a city doing something very like this at the scale of a capital, and Chapter 9 turns the map into a year of work.

A note on method

Koestler's holon is from Koestler, A. (1967), *The Ghost in the Machine*, Hutchinson. Senge's vocabulary is from Senge, P. M. (1990), *The Fifth Discipline*, Doubleday. Neither was re-read in this pass.

CHAPTER FIVE

A City Draws Its Ring



A City Draws Its Ring

HAUTE LUMIÈRE · THE STANDING FOREST · CHAPTER FIVE

A spring with the streets empty

In April 2020, with the streets of Amsterdam emptied by the first lockdown of the pandemic, the city's government presented a document that had been in preparation for more than a year. It was called the Amsterdam City Doughnut. It was, in the words of the Doughnut Economics Action Lab, which helped to make it, "the first public presentation of the City Portrait approach to downscaling the global Doughnut to the city scale".[48]

The timing gave the document a public life that its authors had not planned. A city facing the sharpest economic shock in living memory had chosen, as the frame for its recovery, a picture that put human needs and planetary limits on the same page. Reporters around the world wrote about it. The story most of them told was simpler than what had happened, and the simplification matters, because the real story is more useful to a leader than the legend.

This chapter sets out what Amsterdam did, using the published record; what the record can and cannot show about results; and how a single firm can draw the same kind of portrait of itself. Chapters 2 to 4 gave the idea, its critics and the house's living-systems reading. This one works it, and the two chapters after it follow two governments and a forest.

What actually happened

The record, as the Doughnut Economics Action Lab (DEAL) gives it, runs as follows.[48] Dutch officials and civic groups had been engaging with the doughnut since Kate Raworth's book was translated into Dutch in early 2018. In 2019 the city worked with Circle Economy, a consultancy and one of DEAL's local partners, in a series of workshops to design the Amsterdam Circular Strategy, whose stated aim is for the city to be fully circular by 2050. Building on that work, the city joined the Thriving Cities Initiative, a collaboration between Biomimicry 3.8, C40 Cities, Circle Economy and DEAL, and with them produced the first Amsterdam City Doughnut portrait. The city then included an updated version of the portrait's results in its biennial *State of the City 2020–2021* report, with plans to continue the monitoring in-house. The circular strategy carries the city's two published material targets: to halve its use of new, primary raw materials by 2030, and to be fully circular by 2050. Some summaries render the 2030 aim as fifty per cent circularity; the city's own monitor tracks the raw-material form.[54] Alongside the city's own work, a civic network, the Amsterdam Donut Coalition, took the idea up independently among residents, businesses and community groups.

Three corrections to the common story follow from that record.

It was not a sudden conversion. The doughnut did not arrive in a crisis and replace the city's economic policy overnight. It grew out of a circular-economy strategy that was already in preparation, and it was adopted as a lens for that strategy and for recovery planning.

It was not only a government project. The coalition of residents and organisations that formed around it is, on DEAL's account, as much a part of the story as the city's own documents.

It was a portrait, not a plan. The City Portrait is a description of where a city stands, inside and outside its rings. It does not, by itself, choose policies. The plans that followed drew on it, but the portrait's value lay in what it made visible.

Since then, DEAL reports that in 2025 more than fifty local governments around the world have brought doughnut economics into their policies and processes, with published portraits from cities and regions including Barcelona, Brussels, Geneva, Melbourne, Birmingham and London.[48] These are DEAL's own figures, reported by an organisation that promotes the approach, and they count adoption, not outcomes.

The four lenses

The method behind the portrait is the part a leader can borrow, and it is simpler than its reputation. The global doughnut has one floor and one ceiling. A city has two sets of each, because its people live in one place while its consumption reaches across the world. The City Portrait therefore looks through four lenses, built around a single guiding question which, in paraphrase, asks how the city can be home to thriving people in a thriving place, while respecting the wellbeing of all people and the health of the whole planet.[49]

- Local and social. What would it mean for the people of this city to thrive? Housing, health, income, education, voice, belonging.
- Local and ecological. What would it mean for the city to thrive in its own place, as generous as the wild ecosystem it replaced? Water, air, soil, shade, habitat.
- Global and social. What would it mean for the city to respect the wellbeing of people elsewhere? The workers in the supply chains for its clothes, phones and food.
- Global and ecological. What would it mean for the city to respect the health of the whole planet? Its consumption-based emissions and material footprint, measured where the goods are made, not only where they are used.

The second lens comes from Biomimicry 3.8's work on ecological performance standards, which asks how a built place compares with the wild ecosystem that would stand there without it. It is the most unusual of the four, and the one most likely to change how a leader sees a site.

The structure answers one of the objections from Chapter 3. It does not pretend that the city's local goals and global responsibilities are the same, or that meeting one meets the other. A city can be a good home for its own people while exporting the cost of its comfort, and a portrait drawn through only the local lenses would miss that entirely.

Santa Anna's *Ecstatic Economics* praises Raworth's picture for exactly this quality, describing it as "refusing the false choice between human development and ecological sustainability".[50] The four lenses are that refusal made into a method.



What the record can and cannot show

HAUTE LUMIÈRE · THE STANDING FOREST · CHAPTER FIVE

What the record can and cannot show

Here a careful reader has to slow down. The Amsterdam portrait is a widely admired document. It is not, on the evidence available to this book, a demonstrated success in the sense an economist would use. Three

things are missing from the public record, and their absence is not a criticism of the city; it is the honest state of the evidence.

There is no counterfactual. Nobody can know what Amsterdam's housing, emissions or material use would have been had the city not adopted the doughnut, because the city also faced a pandemic, an energy-price shock and a housing market shaped by national policy.

The time is short. A circular strategy aimed at 2030 and 2050 cannot be judged on five years of data. Material flows in a city change at the pace of building stock, which is measured in decades.

The portrait describes, it does not cause. A portrait can change what a council discusses. Whether it changes what a council decides is a different question, and answering it would require a study of the decisions themselves.

What the record does show is narrower and real. A major European city published a description of itself that put its social shortfalls and its ecological overshoot on one page, built a method others could copy, and kept monitoring. That is a change in what the city looks at. Santa Anna's book argues that this is where structural change starts, because what an economy measures, it gradually becomes. In its starkest form:

> *A forest standing contributes zero. Cut it down, and GDP increases.*[51]

A city that adds the standing forest to its portrait has not yet saved the forest. It has stopped counting the felling as pure gain.

The state's proper role

The Amsterdam case also says something about who does what. The city did not try to direct every business and household into the ring. It drew the portrait, set a circular strategy, and made room for a civic coalition to take the work into neighbourhoods and firms. That division of labour matches a principle Santa Anna sets out in his Developmental Canon, in a passage imagining a mature economy:

> *The role of the state is not to design the economy but to maintain the conditions from which the economy designs itself*[52]

Whether that is the right role for a city is a political judgement this book does not make. It is the role Amsterdam's published record describes, and it explains why the most portable part of the case is not a policy but a method that any organisation, of any size, can use on itself.



Working it: a firm draws its portrait

HAUTE LUMIÈRE · THE STANDING FOREST · CHAPTER FIVE

Working it: a firm draws its portrait

What follows is a composite, built for teaching. The firm is not real; its name and every figure in this section were set by the writer to show the method, and none is drawn from any company's accounts.

Harrow & Vale makes solid-wood furniture in a market town. It employs 140 people, buys most of its timber from three sawmills, and sells through its own showrooms and online. Revenue last year was £18.2 million. Its leadership team, having read about Amsterdam, spends two half-days drawing a portrait of the firm through the four lenses. They use only figures they already hold.

Lens one: local and social

The question: what would it mean for the people of this firm to thrive here? The team chooses six measures and finds a figure for each.

MEASURE	FIGURE	SOURCE
Staff paid at or above the local living-wage benchmark	128 of 140	Payroll, March
Staff who took their full annual leave	97 of 140	HR system
Voluntary leavers in the year	17	HR system
Hours of paid training per person	11	Training log
Reportable injuries	4	Health and safety register
Staff who sat on a working group that changed a process	9	Minutes

The finding they had not expected: twelve people, all in the finishing shop, sit below the living-wage benchmark, and the finishing shop also accounts for nine of the seventeen leavers.

Lens two: local and ecological

The question: what would it mean for the firm to be as generous to its site as the land it replaced? The site was water meadow before it was a factory.

MEASURE	FIGURE	SOURCE
Share of site area that is sealed surface	71 per cent	Site plan
Surface water discharged to drain in a wet month	not measured	—
Trees on site	14	Walk-round count
Wood waste sent off site	410 tonnes	Waste invoices
Of which burned for heat elsewhere	380 tonnes	Waste contractor's report

The finding: the firm does not know how much water leaves its roofs and yard in a storm, on a site that was a flood meadow. The blank line is the most important on the page.

Lens three: global and social

The question: does the firm respect the wellbeing of people in its supply chain? Timber comes from three sawmills; hardware and finishes from eleven other suppliers, two of them overseas.

MEASURE	FIGURE	SOURCE
Suppliers visited in person in the last three years	5 of 14	Purchasing records
Suppliers paid within 30 days	6 of 14	Accounts payable
Suppliers who could name a wage or safety standard they meet	4 of 14	Supplier questionnaire, sent this year

The finding: the firm pays its largest suppliers fastest and its smallest slowest, which is the reverse of what reciprocity would ask.

Lens four: global and ecological

The question: does the firm respect the health of the whole planet? Here the team works from purchased quantities.

MEASURE	FIGURE	SOURCE
Timber bought	2,300 cubic metres	Purchase ledger
Share from certified sustainably managed forest	64 per cent	Certificates held
Electricity used	1.9 GWh	Utility bills
Of which from the on-site solar array	0.3 GWh	Inverter log
Gas used	2.6 GWh	Utility bills
Delivery vehicle fuel	96,000 litres	Fuel cards

The finding: more than a third of the timber cannot be traced to a certified forest, and the firm buys it from the cheapest of the three sawmills.

Reading the portrait

The finished portrait, pinned on one wall, does what Amsterdam's did. It does not choose policies. It shows the team four things they had not seen together before: low pay and high turnover in one shop, an unmeasured flow of storm water from a flood meadow, slow payment of the smallest suppliers, and a third of the timber with no forest behind it on paper.

The team's response is instructive for what it does not do. It does not set a target on every line. It chooses one line in each lens, and for each it writes a question rather than a goal: what would it take to pay the finishing shop at the benchmark within a year; what does the site discharge in a storm; what would thirty-day terms for the four smallest suppliers cost; can the uncertified timber be traced, and if not, what would it cost to buy elsewhere. Those four questions become the work of the next quarter. The finishing-shop question turns out to be the cheapest: the cost of the pay rise is less than the firm's estimate of what the year's nine leavers cost to recruit and train. That comparison uses the firm's own figures, and it is the kind of finding a portrait makes visible and a profit-and-loss account hides.

The storm-water question produces the most interesting answer. A local engineering student, hired for a summer, fits a simple flow logger to the main drain and records three months of rain. In the heaviest storm the yard sends water to the town drain faster than the drain can take it, and the street below floods for an hour. The firm had never connected the two. Its cheapest response, replacing part of the sealed yard with

planted gravel and a soakaway, costs less than one year of the timber premium it was already paying for certified wood. It also returns a little of the meadow to the site. None of this appeared in any account the firm kept before the portrait; all of it was there to be seen once someone asked what the land had been.

Alpha Value Chain is the instrument in this house that takes the next step, tracing where each of those costs and gains sits in the firm's activities.

Seven generations, at the scale of a firm

Santa Anna's book takes from the Haudenosaunee the principle of considering the effect of decisions on the next seven generations, and is careful about what it does and does not claim for it:

> *Seven-generation thinking doesn't mean we can predict the future perfectly. It means we include the future in our moral horizon*[53]

A firm's portrait is the practical form of that principle at small scale. It does not forecast. It brings the people and places a firm's decisions will affect, including those not yet born, into the room where the decisions are made. The neighbouring books on regenerative economics and on patient capital take up what a firm can then build on it.

The Tool: The Four-Lens Portrait

For a firm, a school, a congregation, a household. Two half-days the first time; one half-day each year after.

Before you start. Write your guiding question in one sentence, adapted from the City Portrait: *How can we be a place where our people thrive, on a site that thrives, while respecting the wellbeing of the people who supply us and the health of the whole planet?*

Lens one · Our people (local, social). Choose five or six measures of whether the people you are responsible for can thrive: pay against a living benchmark, leave taken, turnover, training, safety, voice. One row each: measure, figure, source.

Lens two · Our place (local, ecological). Ask what the land was before you were on it, and choose four or five measures that compare your site with that: sealed surface, water leaving the site, trees and planting, waste leaving the gate. One row each.

Lens three · Their people (global, social). List your suppliers. For each: when someone last visited, how fast you pay them, and whether they can name a wage or safety standard they meet. One row per supplier.

Lens four · The planet (global, ecological). From your purchase ledger: the quantities of your three largest materials, your energy by source, your transport fuel. One row each, in its own unit, with the share that can be traced to a responsible source.

Rules for every row.

1 · Use a figure you already hold. If you do not hold one, write *not measured*. Never estimate to fill a blank.

2 · Name the source of every figure.

3 · Do not set a target yet.

Reading the portrait. Lay the four tables side by side. Mark, in each, the one row that surprised you most. For each marked row, write a question, not a goal, beginning *What would it take to…* Assign each question an owner and a date one quarter away.

The second year. Redraw the portrait from fresh figures before you look at last year's. Then compare. The rows that moved are your evidence. The rows still marked *not measured* are your next questions.

A note on method

Harrow & Vale is a composite built for teaching; it is not a real company, and every figure attributed to it was set by the writer. No peer-reviewed evaluation of the outcomes of the Amsterdam City Doughnut was found for this article; that absence is stated, not inferred.

CHAPTER SIX

A Government Changes What It Counts



A Government Changes What It Counts

HAUTE LUMIÈRE · THE STANDING FOREST · CHAPTER SIX

Two small countries and one large question

A city can draw a portrait of itself. A national government has a harder task, because it holds the purse, the statute book and the measures by which everyone else is judged. When a government changes what it counts, every ministry, council and contractor below it eventually changes what it reports, and a little later, what it does. That is the hope. The record is more interesting than the hope, and this chapter reads it from two places that tried: Wales, which wrote the future into law in 2015, and New Zealand, which organised a national budget around wellbeing in 2019.

Neither government used the word doughnut in its founding documents, and neither drew Raworth's ring. They belong in this book because they did the thing the ring asks of any organisation in its first year. They separated the size of the economy from its purpose, they named a floor of human needs and a ceiling of living limits in the same breath, and they built machinery to keep both in view after the speeches were over. A leader who wants to know what happens when an organisation changes its measures can learn more from their difficulties than from any manifesto.

Santa Anna's *Ecstatic Economics* discusses both cases in its chapter on policy, and states their significance in one sentence: "the purpose of economic policy is not the production of more stuff but the flourishing of human life." It is also unusually frank about their limits, and that frankness is the right temperature for what follows.

Wales: the future given a seat

The National Assembly for Wales passed the Well-being of Future Generations (Wales) Act in 2015. It received Royal Assent on 29 April that year, and its duties became binding on the public bodies it names from 1 April 2016.[55] The Act does three things that a leader can recognise from inside an organisation.

It names a purpose. Public bodies in Wales must pursue sustainable development, and the Act defines what that means through seven well-being goals: a prosperous Wales, a resilient Wales, a healthier Wales, a more equal Wales, a Wales of cohesive communities, a Wales of vibrant culture and thriving Welsh language, and a globally responsible Wales. The bodies must pursue all seven, not choose among them. Read beside Raworth's ring, the list is recognisable. Prosperity, health, equality, cohesion and culture sit on the floor. Resilience, defined in the Act in terms of a biodiverse natural environment with healthy functioning ecosystems, sits under the ceiling. And the seventh goal, a globally responsible Wales, is the city portrait's two global lenses written into statute: a small nation agreeing in law that its comfort must not be bought with someone else's.

It names a way of working. The Act's sustainable development principle is expressed as five ways of working that every decision must show: long-term thinking, prevention, integration, collaboration and involvement. They are not targets. They are a description of how a decision is made, and they can be checked

against the record of how it was made. For a firm, the transferable insight is that a change of purpose that does not change the meeting has not yet happened.

It names a keeper. The Act created an independent Future Generations Commissioner for Wales, whose role is to act as a guardian for the interests of people not yet born, to advise and challenge public bodies, and to publish a report on the state of things at regular intervals. Sophie Howe held the post from 2016 to 2023; Derek Walker holds it now.[55] The Commissioner cannot overrule a minister. The office's power is to ask, in public and on the record, whether a decision shows the five ways of working, and to keep asking.

Santa Anna's book reads the Act as "a legislative enactment of the Haudenosaunee seven-generation principle", which the book discusses in an earlier chapter and handles with care:

> *Seven-generation thinking doesn't mean we can predict the future perfectly.*[56]

That is exactly the Act's logic. It does not forecast the Wales of 2075. It requires that the Wales of 2075 be represented, by an office and a principle, in the room where the decisions of 2026 are made.

What the Act changed, and what it did not

The most widely reported test came over a road. For years the Welsh Government had planned a relief road for the M4 motorway around Newport, a large project to ease one of the most congested stretches of road in Wales. The Commissioner argued publicly that the scheme was inconsistent with the Act, on grounds of cost, carbon and the long-term pattern of travel it would lock in. In June 2019 the First Minister, Mark Drakeford, announced that the road would not be built, giving its cost and its effect on the environment, including a protected wetland on the route, as the reasons.[57]

It would be easy to tell that story as the Act stopping a motorway. The record does not support quite that much. The decision was the First Minister's, the reasons he gave were cost and environment, and a different government might have weighed the same arguments differently. What the record does show is narrower and, for a leader, more useful. The Act gave a long-term argument a standing office and a legal vocabulary, so that the case against the road arrived in the decision with the same formality as the case for it. In the language of Chapter 4, it restored a feedback loop that a short budget cycle had cut.

The Commissioner's own reports have been candid about the rest. The Act's duties are on process; it does not let a citizen sue a council for failing to make Wales more equal, and the Welsh experience shows how easily the five ways of working can become boxes ticked in a report rather than habits in a room. Public bodies have produced well-being objectives that read like their old corporate plans with new headings. The Act changed what every body must say about itself. It has changed, more slowly and more unevenly, what every body does. Anyone who has watched a firm adopt a new set of values will recognise the gap.



New Zealand: a budget organised around wellbeing

HAUTE LUMIÈRE · THE STANDING FOREST · CHAPTER SIX

New Zealand: a budget organised around wellbeing

New Zealand came to the same question from the Treasury rather than the legislature. Its Treasury had been developing a Living Standards Framework since the early 2010s, a way of describing national well-being across several kinds of capital: natural, human, social and financial and physical. On 30 May 2019 the government of Jacinda Ardern presented what it called the Wellbeing Budget, the first national budget the government organised around priorities chosen from wellbeing evidence rather than around growth alone.[58]

The budget named five priorities. Santa Anna's book lists them as mental health, child wellbeing, supporting Māori and Pacific peoples' aspirations, building a productive economy, and transitioning to a sustainable and low-emissions economy. Each spending bid had to show how it served one of them, and ministries were asked to bid jointly where a problem crossed their boundaries. The following year Parliament amended the Public Finance Act so that every government must set out its wellbeing objectives alongside its budget, and so that the Treasury must report on the state of wellbeing in New Zealand at regular intervals.[58] As in Wales, the change of purpose was given machinery, so that it would outlast the government that made it.

The design has a feature a leader should notice. The Living Standards Framework places the natural environment among the capitals the country holds, as a stock whose condition matters in itself, not only as a flow of resources into production. That is Boulding's spaceship in a Treasury document: the measure of success includes the condition of what is held, not only the speed at which it passes through.

What the budget changed, and what it did not

Santa Anna's book is plain about the limits, and the plainness is worth quoting at length because it is the sentence most enthusiasts leave out:

> *The limitations must be named. Wellbeing budgets are still young. Their measurement frameworks are imperfect. They can be co-opted — used as public relations while the underlying fiscal priorities remain unchanged. New Zealand's Wellbeing Budget, while genuinely innovative, was not sufficient to prevent rising inequality or housing unaffordability. The framework is necessary but not sufficient.*[59]

That judgement is the book's, and it is consistent with what New Zealand's own commentators reported in the years that followed. House prices rose steeply in the period after 2019, child poverty measures improved on some counts and not others, and the share of the budget that changed direction because of the framework was a small fraction of the whole. The bulk of any national budget is committed long before a new framework arrives: pensions, schools, hospitals, debt service. A wellbeing lens can steer the new money. It moves the old money slowly.

None of that makes the budget a failure. It makes it a first year. The government changed the question each spending bid had to answer, and it wrote that question into the law that governs every future budget. A firm that changes the question its capital committee asks has done the same thing, and should expect the same pattern: the new question bites first on new spending, and only later on the commitments it inherited.

What the two cases share

Set side by side, Wales and New Zealand show four things that matter to a leader of any organisation.

A purpose that names both rings. Each named human needs and living limits in a single list, so that neither could be traded away quietly for the other. The Welsh goals put resilience and global responsibility beside prosperity. The New Zealand framework put natural capital beside financial capital.

Machinery that outlives its authors. Each wrote its change into law, with an office or a reporting duty attached. A purpose that depends on one minister, or one chief executive, ends when they leave.

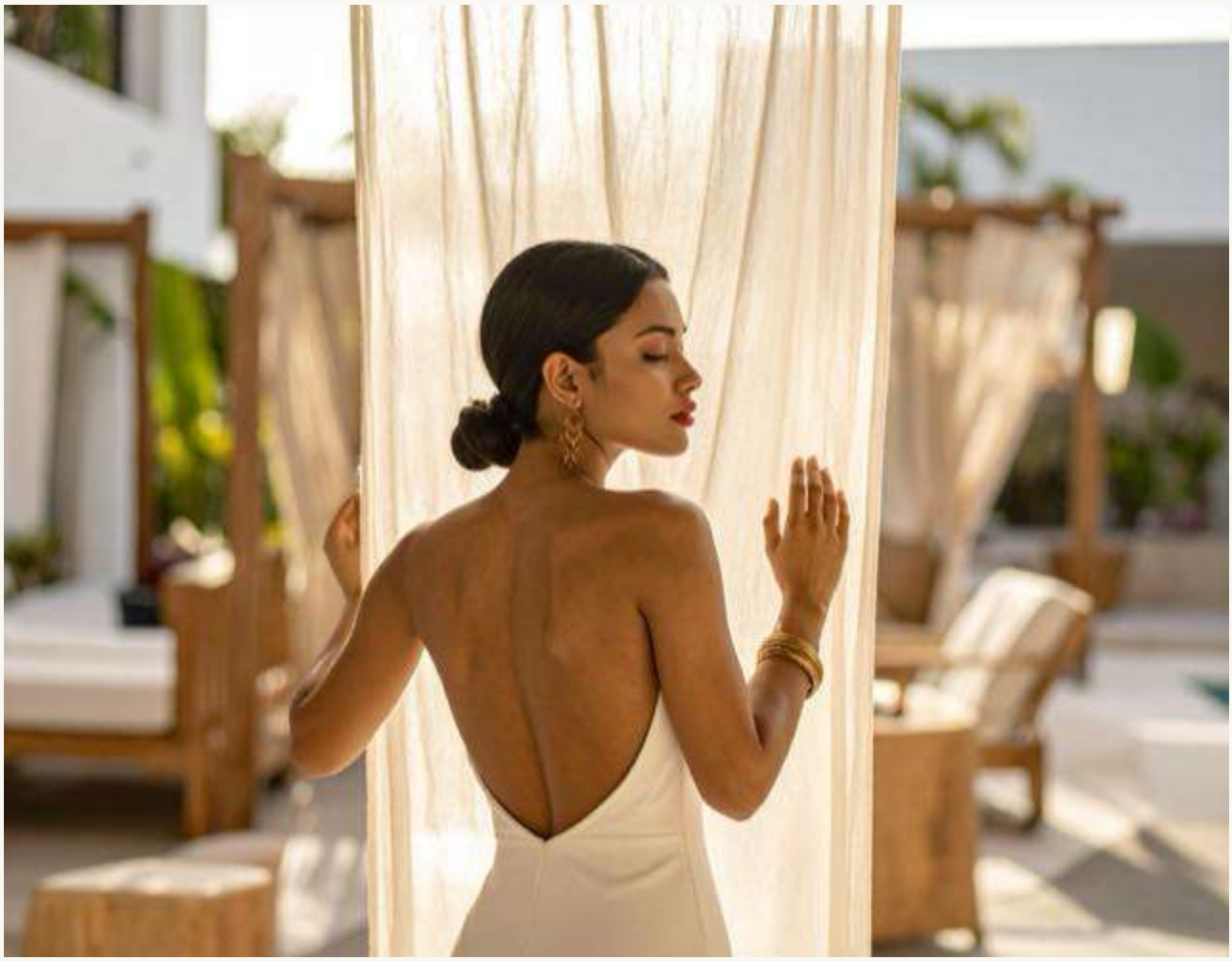
A keeper with a voice and no veto. The Welsh Commissioner and the New Zealand Treasury's wellbeing reports both work by making a long-term case visible at the moment of decision. Neither can force a result. That is a weakness and a strength. It means the change is real only when the people deciding take it up, and it means the keeper cannot be blamed for every hard trade-off, which is what lets the office survive changes of government.

A gap between saying and doing that closes slowly. In both places, what every body must say about itself changed within a year. What it does has changed over a decade, and unevenly. Anyone who expects a change of measures to change behaviour in a quarter will conclude, wrongly, that it has failed.

Santa Anna's book offers a reason the slow part matters, in its discussion of what such frameworks signal:

> *Trust, it turns out, is extraordinarily efficient. Suspicion is extraordinarily expensive.*[60]

The book's broader claim, that people who feel cared for by their governance produce more and trust more, is not shown by the evidence in this chapter, and the book does not offer controlled evidence for it. The narrower point stands on ordinary experience. A change of measures that is announced and then visibly ignored costs more trust than it earns. A change that is announced modestly and then kept, year after year, by an office that will not let it be forgotten, earns the kind of trust a later and harder decision can draw on.



The finer points, for a firm

HAUTE LUMIÈRE · THE STANDING FOREST · CHAPTER SIX

The finer points, for a firm

A board is a small government. It holds a purse, writes rules and chooses what to count. Five moves translate the two cases to an organisation of any size.

Write the purpose with both rings in it. One page. The needs the organisation exists to meet, for whom, and the living limits it will respect, in its own units. If the page could be read as a promise to grow sales, it has not yet named a floor or a ceiling.

Choose the ways of working before the targets. The Welsh five are a good starting list: long term, prevention, integration, collaboration, involvement. For each, write how a paper coming to the board will show it. A capital request might, for instance, have to state its effect on the organisation's largest flows over ten years, not just its payback in three.

Appoint a keeper. One non-executive, or one standing committee, whose job is to ask the long-term question at every meeting and to report once a year on whether the board kept its own purpose. Give the keeper a voice in the minutes and no veto. Chapter 10 has scripts for the hard conversations a keeper is likely to meet, beginning with the board member who calls the work a fashion.

Let the new question bite first on new money. Do not pretend the whole budget can be re-cut in a year. Apply the purpose to every new commitment, and set a date by which the largest inherited commitments will be reviewed against it.

Publish the gap. In the annual report, say plainly where the organisation's practice still falls short of its purpose. Wales and New Zealand earned credibility by letting their own offices report the shortfall. A firm that reports only its progress will be believed less, and it will learn less.

A keeper at work, in a firm

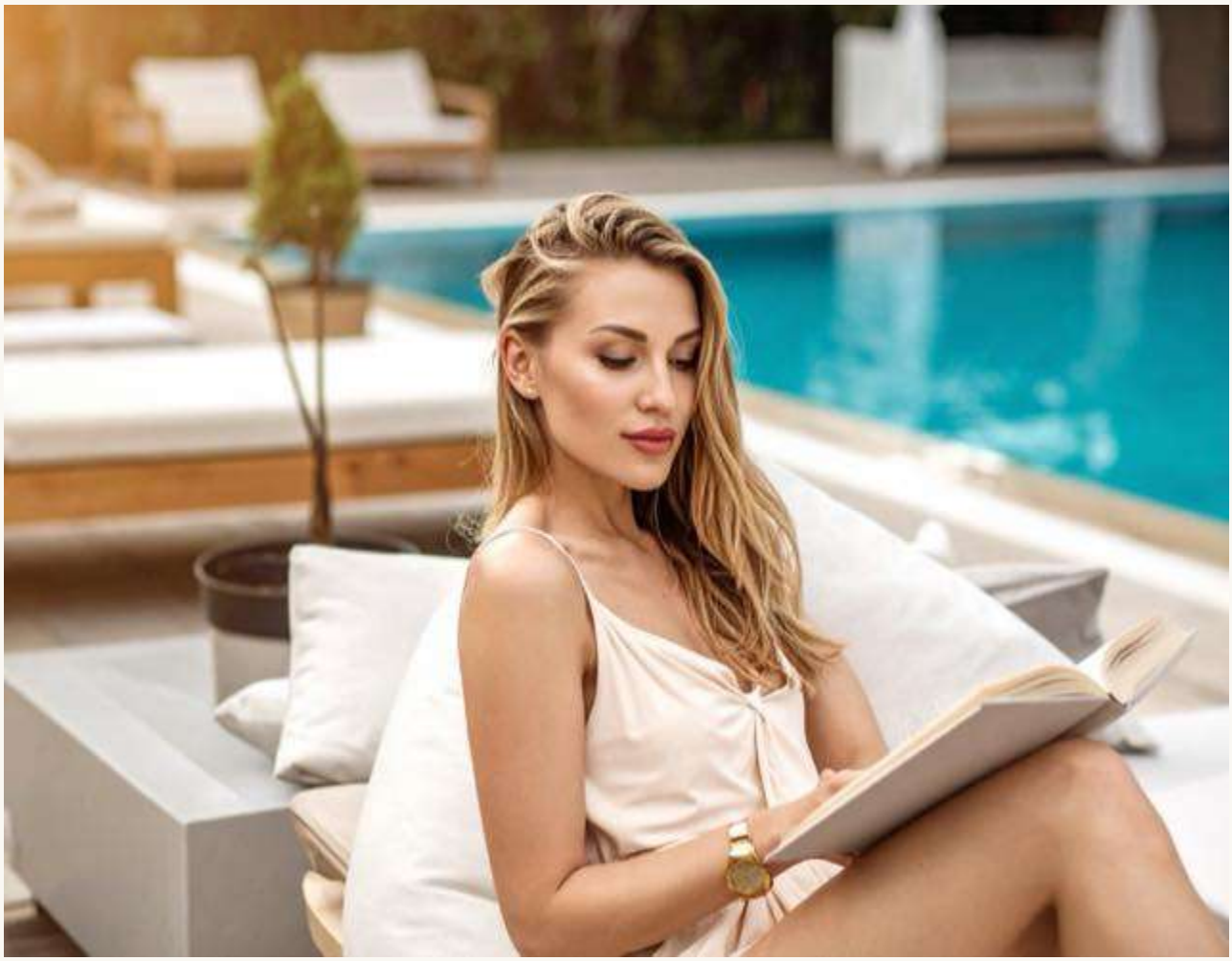
A short sketch shows what a keeper does in an organisation smaller than a country. The firm is a composite, built for teaching; its people and decisions were set by the writer.

A family-owned food manufacturer with three hundred staff adopts a Purpose Charter after a year of the work in Chapter 9. Its keeper is a non-executive director, a retired agronomist who joined the board for her knowledge of the firm's growers. At the first board meeting after the charter is adopted, the operations director brings a proposal to replace two ageing production lines with one larger, faster line, paid back in three years through lower labour costs.

The keeper does not oppose it. She asks the charter's question: what is its effect on both rings over ten years? The paper has no answer, because the template it was written on predates the charter. It comes back a month later with three new lines. The new line would use about a fifth less energy per tonne and somewhat more in total, because it is sized for growth the firm has not yet won. It would remove eleven jobs on the floor, all in the team the portrait had shown to be lowest paid. And it would lock the firm into one supplier of packaging film for the life of the line.

The board approves a smaller version: one replacement line sized to current volume, with the eleven people moved into the maintenance and quality roles the portrait had shown were understaffed. The payback is four years instead of three. The minutes record the keeper's question, the three new lines, and the board's reasons. A year later, the keeper's annual report names the decision as the one the charter changed most.

Nothing in the sketch required the keeper to know more about production lines than the operations director. It required her to ask, at the moment of decision, the question the charter had written down, and the board to have agreed in advance that the question would be answered before the vote. That is all the Welsh Commissioner does, at the scale of a nation.



What this chapter cannot show

HAUTE LUMIÈRE · THE STANDING FOREST · CHAPTER SIX

What this chapter cannot show

Two countries are not a sample. Neither case has a counterfactual, and both were shaped by events far larger than any framework: a pandemic, an energy-price shock, national housing markets. The Welsh motorway decision had several reasons, and the record does not let anyone say how much weight the Act carried. The New Zealand outcomes depend on which indicator is chosen and over which years. What the cases show is how a government behaved when it changed its measures, and what it built to keep the change. That is the part a leader can copy.

The Tool: The Purpose Charter

A two-page document for a board, a leadership team or a household council, drafted in one meeting and reviewed once a year. It is the organisational form of what Wales and New Zealand wrote into law.

Page one · The purpose.

1 · *We exist to meet these needs* (three to five lines, each naming a need and the people it is for).

2 · *We will respect these limits* (three to five lines, each naming a flow across the coastline, its unit, and the direction it must move).

3 · *We will not trade one ring for the other.* One sentence on what the organisation will do when a decision would improve one ring at the cost of the other. The usual answer is: the decision comes to the full board, with both effects stated.

Page two · The machinery.

1 · *Our ways of working.* Five lines, adapted from the Welsh five, each with one observable sign in a board paper.

2 · *Our keeper.* A name or a committee, the question they will ask at every meeting, and the date of their annual report.

3 · *New money first.* The threshold above which every new commitment must show its effect on both rings, and the date by which the five largest inherited commitments will be reviewed.

4 · *The gap, published.* Where the annual report will state the shortfall, and who writes that paragraph. It should not be the chief executive.

The annual review. Once a year, the keeper reads page one aloud, then reports three things: one decision the charter changed, one decision it should have changed and did not, and one line of the charter that needs rewriting. Record all three. They are the organisation's own evidence of whether a change of measures has become a change of practice.

CHAPTER SEVEN

The Forest That Was Paid to Stand



The Forest That Was Paid to Stand

HAUTE LUMIÈRE · THE STANDING FOREST · CHAPTER SEVEN

The sentence turned over

This book has quoted, more than once, a sentence from Santa Anna's *Ecstatic Economics* that states the accounting problem at the heart of the subject: "A forest standing contributes zero. Cut it down, and GDP increases." In the 1990s a small country in Central America tried to turn that sentence over. It built a national programme to pay landowners for keeping forest standing, and for planting it back. Costa Rica's payments for environmental services, known by their Spanish initials as PSA, became one of the most studied environmental programmes in the world.

They belong in this book for two reasons. The first is that they are the plainest public attempt to put the doughnut's ceiling into a ledger: to make the standing forest appear as income to the person who keeps it. The second is that they have been studied closely enough, by economists who were not their advocates, that the results can be stated with their error bars. The honest result is more modest than the legend and more instructive. A leader who wants to pay for something the market does not price will find in Costa Rica both the method and its limits.

The background

For much of the twentieth century Costa Rica cleared forest at a rapid rate, largely for cattle pasture. By the late 1980s the country's forest cover had fallen, on commonly cited estimates, to around a fifth of its land. It has since recovered to around half.[61] Those two figures travel together in almost every account of the programme, and they invite a conclusion the evidence does not support: that the payments caused the recovery. Hold the conclusion for a few pages. The order of events matters.

In 1996 Costa Rica passed a new Forestry Law. Among other things, it prohibited the conversion of mature forest to other land uses, and it recognised in law that forests provide services to society: the mitigation of greenhouse gas emissions, the protection of water for urban, rural and hydroelectric use, the protection of biodiversity, and natural scenic beauty. It created a national fund, the Fondo Nacional de Financiamiento Forestal, FONAFIFO, to pay landowners who agreed to protect or restore forest on their land. Payments began in 1997, financed at first largely from a share of a national tax on fuel, and later also from loans, grants and charges on water users.[62]

The structure is simple to describe. A landowner applies, a forestry professional draws up a plan, and the owner signs a contract, typically for five years, to keep existing forest intact, or to reforest, or to manage land under agroforestry. The fund pays a fixed amount per hectare per year. The contract is monitored, and payment stops if it is broken.

What the programme set out to do

Read in the language of this book, the programme did three things at once.

It named the services. The 1996 law did what Chapter 2's Two-Ring Ledger asks of a household in its first quarter: it wrote down, in a public document, the flows that a standing forest provides to the people downstream of it. Carbon held, water slowed and cleaned, habitat kept, a landscape that brings visitors. Until they were written down, they had no owner and no price.

It found the beneficiaries. A service has users, and users can be asked to pay. The fuel tax made road users, as emitters of carbon, pay for carbon held. The later water charges asked the people and firms who drink and use the water that forested catchments protect to pay for the protection. Stefano Pagiola, reviewing the programme for *Ecological Economics* in 2008, judged that it had made more progress in charging water users than in charging the users of biodiversity or carbon.[63] That is an important finding for any leader. The services whose beneficiaries are close, identifiable and dependent are the easiest to fund. The services whose beneficiaries are diffuse, distant or not yet born are the hardest.

It paid the steward. The person who kept the forest, and who bore the cost of not clearing it, received an income for doing so. In the house's terms, the programme restored a reciprocity: a giving for a taking, a payment answering the service.



What the evidence shows

HAUTE LUMIÈRE · THE STANDING FOREST · CHAPTER SEVEN

What the evidence shows

Here a careful reader has to slow down, because the evaluations tell a more complicated story than the forest-cover figures.

The difficulty is the counterfactual. To know what the payments achieved, one has to know what would have happened to the same land without them. By the time payments began in 1997, several other things had changed. The 1996 law had already prohibited clearing mature forest. Cattle prices had fallen, which

made pasture less profitable. Tourism had grown, which made standing forest more valuable to some landowners regardless of any payment. Deforestation had been slowing before the programme began.

Economists who compared enrolled land with similar land that was not enrolled have generally found that the programme's direct effect on deforestation was real but small. A World Bank evaluation by Erin Sills and colleagues, reported in 2008, concluded that the programme resulted in a small but statistically significant increase in the area of forest conserved.[64] Other studies, with different methods and periods, have reached broadly similar conclusions: much of the land enrolled in the early years would probably have stayed forested anyway, because it was steep, remote or otherwise unattractive to clear. Later rounds of the programme tried to target payments more carefully, towards land at higher risk of clearing or of higher value for water and habitat.

This is not a story of failure. It is a story about what a payment can and cannot do on its own. The forest recovered because a law, a market, a tourist economy and a payment scheme all pointed in the same direction at once. The payment's own marginal contribution was modest. Its contribution to the whole, by making stewardship a recognised and paid occupation, by building an institution that could later be targeted better, and by changing what the country counted, is harder to measure and probably larger.

Santa Anna's book, discussing a different case, uses a phrase that fits this one exactly: the framework is "necessary but not sufficient." A payment for a standing forest, without a law against clearing it and an economy that values it, would have bought little. A law without a payment would have asked landowners to bear the whole cost of a service everyone else enjoyed.

The house's reading

The Costa Rican programme is usually discussed as environmental economics: a way to correct a market failure by creating a market. The living-systems reading of Chapter 4 sees it slightly differently, and the difference changes what a leader would copy.

Santa Anna's book draws from regenerative agriculture an image of what happens when the economy and the ecology stop working against each other:

> *The farmer prospers because the soil prospers.*[65]

The PSA programme, at its best, made that sentence true for a forest owner. The owner's income came from the forest's health, so the owner's interest and the forest's interest pointed the same way. That is a feedback loop restored: the signal from the standing forest, which used to arrive nowhere, now arrives in a bank account once a year.

The book also distinguishes between doing less harm and doing more good:

> *Sustainability aims to do less damage. Regeneration aims to increase life.*[66]

The programme had both kinds of contract. Protection contracts paid owners not to clear: less damage. Reforestation and agroforestry contracts paid owners to plant: more life. The evaluations have concentrated on the first kind, because avoided deforestation can be compared with a control. The second kind, the slow thickening of a landscape over decades, is the part of the story that a five-year comparison is least able to see, and the part a regenerative enterprise would most want to copy. The neighbouring book in this lineage on regenerative and circular economics, regenerative economies, takes that distinction further.

The five readings, applied

Chapter 4 offered five ways of reading any organism in its habitat. Applied to the Costa Rican programme, they show where its strengths and its gaps lie more clearly than a single evaluation can.

Nesting. The programme sits inside the country's law, which sits inside its economy, which sits inside a set of watersheds and forests. Its designers understood this. The payment was never meant to work alone; it was one part of a nested arrangement whose outer layer was the 1996 prohibition on clearing mature forest. A firm that tries to copy the payment without the outer layer, without its own commitment not to buy from cleared land, will find the payment does less than it hoped.

Metabolism. The programme changed the diet of the national economy only slightly. Timber, beef and coffee still flowed out of the country; fuel still flowed in. What changed was the condition of one part of the body: the stock of standing forest. Boulding, in Chapter 2, said that on a closed ship the measure of success is the condition of what you hold. The programme is one of the few public policies anywhere whose explicit aim was the condition of a stock rather than the size of a flow.

Feedback. The payment restored a signal that had been lost: the value of a standing forest to the people downstream now reached the person upstream who decided whether to keep it. The weakness, which the evaluators found, is that the signal reached many people who would have kept the forest anyway. A feedback loop is only useful where it changes behaviour, and the later targeting of payments was an attempt to send the signal where it would be heard.

Reciprocity. The water charges are the programme's clearest reciprocity: the town that drinks from a forested catchment pays the people who keep it forested. Pagiola's finding that this was where the programme progressed furthest is, in the house's terms, unsurprising. Reciprocity is easiest between parties who can see each other.

Vitality. No evaluation cited in this chapter measured whether the people who held PSA contracts felt differently about their land, their work or their future. It is the question the house would most want answered, and the one the record cannot address. A five-year contract that turns a forest owner from a

person waiting to clear into a person paid to keep may change something in how that person lives on the land. Whether it does is an empirical question, and an open one.



The finer points, for a firm

HAUTE LUMIÈRE · THE STANDING FOREST · CHAPTER SEVEN

The finer points, for a firm

Most organisations will never run a national fund. Many depend on a forest, a watershed, a farm or a fishery they do not own, and some can do at small scale what Costa Rica did at national scale. Five lessons transfer.

Name the service before you price it. The 1996 law listed four services. A firm that buys timber, food, water or fibre can list, in a paragraph, what the land it depends on provides beyond the commodity: water held in a catchment above its plant, soil kept on a supplier's farm, habitat on the edge of a field. The list is the first step and costs nothing.

Find the beneficiaries who are close. The Costa Rican programme found water users easier to charge than carbon users. A firm will find the same. The service the firm itself depends on, the water its process needs, the soil its supplier's yield needs, is the one whose value it can see and is most willing to pay for. Start there.

Pay the steward, and pay on time. A payment that arrives late, or that the steward cannot rely on, buys little behaviour. Chapter 5's composite furniture maker found it was paying its smallest suppliers slowest. A firm that wants a supplier to keep soil in heart pays enough, early enough, for the supplier to afford to.

Target, then re-target. The programme's evaluators found that early payments went disproportionately to land that was not at risk. The same will happen to any firm's first scheme: the suppliers who sign up first are often those already doing the right thing. That is not wasted money; it rewards good practice and keeps it. But the second round should look for the places where the payment changes what happens.

Measure the counterfactual honestly. If a firm pays a grower to protect a hedgerow, the right question is not whether the hedgerow is still there in five years but whether it would have been there anyway. Often the honest answer is "probably", and that is worth knowing. The money may still be well spent, as a reward and a relationship. It should not be reported as a result it did not cause.



The finer points, for a household

HAUTE LUMIÈRE · THE STANDING FOREST · CHAPTER SEVEN

The finer points, for a household

A household cannot pay a forest. It can do three smaller things that follow the same logic. It can find the land its food, water and wood come from, at least in outline, and notice which of those places it has never thought about. It can, where it has a choice, pay a little more to a grower or a maker whose practice keeps the land in heart, and pay them promptly. And it can treat its own garden, window box or allotment as a stand of forest in miniature: a stock whose condition it keeps, not a flow it consumes. Chapter 11 takes these further.

What this chapter cannot show

The forest-cover figures are national estimates, made with different methods in different years, and they are reported here as they are commonly cited, not recalculated. The evaluations compare enrolled with unenrolled land, and their conclusions depend on how well the two were matched. None can isolate the programme's contribution to the country's broader change in what it valued. And the financing details changed over the programme's life; the description here is of its design, not of any particular year's budget.

What the case does show is that a country can write the services of a standing forest into law, find people willing to pay for some of them, and pay the people who keep them, for more than a quarter of a century. It also shows, through the patience of its evaluators, that a payment works best as one part of a system pointing in one direction, and that the honest measure of a programme is what it changed, not what happened beside it.

The Tool: The Stewardship Contract

A one-page agreement between an organisation and a steward it depends on: a grower, a landholder, a community that keeps a catchment, a supplier. It is drafted together, not handed over.

1 · The service, named. One paragraph, in plain words, describing what the steward's land or practice provides beyond the commodity sold: water held, soil kept, habitat, a landscape. Both parties sign the paragraph.

2 · The practice, agreed. Three to five specific practices the steward will keep or begin, each observable: a hedgerow kept, a cover crop sown, a riverbank left unploughed for five metres, a stand of trees not felled.

3 · The payment. A fixed amount per year, or per hectare, or per unit bought, stated in money. Paid within thirty days of each agreed date. Not conditional on the steward's yield.

4 · The term. Five years, matching the Costa Rican contracts and long enough for a practice to become habit. Renewable by agreement.

5 · The counterfactual question. One sentence, written by both parties at the start: *What do we think would happen to this land without this agreement?* Re-read it at renewal, and answer it again honestly.

6 · The record. One visit a year, by someone from the organisation who is not in purchasing, with one photograph from the same spot each time and a short note on each practice. Keep the photographs together. After five years, lay them side by side.

7 · The reciprocity line. One sentence on what the steward receives besides money: early warning of changes in demand, a place at the annual supplier meeting, help with certification. The payment buys a practice. The line keeps a relationship.

A NOTE FROM THE HOUSE

A firm that pays a steward to keep what it depends on is buying a gain it has not yet counted: water held, soil kept, a supplier still farming when the contract is renewed. Luminous Prosperity Inc. counts and opens that kind of gain inside organisations as a gainshare, paid as a share of what is found.

REQUEST A CONVERSATION

CHAPTER EIGHT

How to Know It Worked



How to Know It Worked

HAUTE LUMIÈRE · THE STANDING FOREST · CHAPTER EIGHT

The first honest number

Every organisation that takes the ring seriously meets the same afternoon. The first honest number comes in, and it is worse than the one in last year's report. The energy use that the sustainability page described as falling turns out to have fallen per pound of revenue and risen in kilowatt-hours. The share of suppliers paid on time, which nobody had counted, turns out to be under half. The staff survey that reported high engagement turns out to have been answered by a third of the staff, mostly the happiest third.

That afternoon decides whether the work continues. A team that reads the first honest number as a failure will, within a quarter, find a way to make the number look better without changing what it measures. A team that reads it as the first accurate picture it has ever had will keep going. This chapter is about the difference: what to count, in which units, and how to read the result honestly when it disappoints. It is the chapter most books on this subject leave out, and it is the one a leader most needs.

Santa Anna's *Ecstatic Economics* names the risk exactly, in a passage about co-operatives that applies to any organisation:

> *If a cooperative measures its success only in financial terms, it will gradually drift toward extractive behavior.*[67]

and it is candid about how hard the remedy is, calling the design of multi-dimensional measurement "among the most important — and most difficult — practical challenges the movement faces." The rest of this chapter takes that difficulty seriously.

Why a single number misleads

The case against GDP as a measure of welfare is the oldest in this subject, and Chapter 2 traced it to Kuznets in 1934. The most careful modern attempt to replace it is instructive, both for what it found and for what it could not do.

The Genuine Progress Indicator starts from personal consumption, adjusts it for the inequality of income, adds the value of household and volunteer work, and subtracts the costs of crime, pollution, the loss of farmland and forest, and other things GDP counts as gains or ignores. In 2013 Ida Kubiszewski, Robert Costanza and colleagues gathered GPI estimates for seventeen countries holding about half the world's population and reported, in *Ecological Economics*, that while global GDP had more than tripled since 1950, economic welfare as estimated by the GPI had decreased since 1978. They found that GPI per person peaked in 1978, at about the time humanity's ecological footprint first exceeded the planet's biocapacity, and that GPI per person did not increase beyond a GDP of around seven thousand dollars a person. They were also plain that the GPI is not a perfect welfare measure, only a far better approximation than GDP.[68]

The finding is striking, and it is fragile in a way a leader should understand. Every number in a GPI depends on a choice: how to value an hour of housework, what a lost hectare of wetland costs, how much to adjust for inequality. Change the choices and the curve moves. That is not a reason to dismiss the indicator. It is a reason to see that any single number which combines unlike things has hidden its judgements inside its arithmetic. The more a number aggregates, the more it asks you to trust whoever built it.

The lesson for an organisation is simple. Do not build a single index. Count each flow and each need in its own unit, and show them side by side. A board can hold six numbers in view. It cannot argue with a composite score whose weights it never chose.



What to count

HAUTE LUMIÈRE · THE STANDING FOREST · CHAPTER EIGHT

What to count

Three families of measure cover almost everything this book asks of an organisation. Each has a common way of going wrong.

The ceiling: flows in absolute units

Count each of your largest flows in its physical unit: kilowatt-hours, cubic metres, tonnes, litres, kilometres. Count it in total, not per unit of revenue.

The reason is the distinction Helmut Haberl and colleagues drew in their 2020 review of the decoupling evidence, discussed in Chapter 3. Relative decoupling, where a flow grows more slowly than revenue, is common. Absolute decoupling, where revenue grows and the flow actually falls, is rare.[69] An intensity figure, energy per pound, carbon per unit sold, can improve every year while the total rises every year. Intensity is a useful measure of efficiency. It is not a measure of where you stand against the ceiling. Report both, and lead with the absolute.

The common error is the moving boundary. A firm sells a subsidiary, or outsources a process, and its flows fall. Nothing has changed on the planet; the flows have moved to someone else's ledger. Count the flows you buy as well as the flows you make, at least for your largest materials, and say plainly when the boundary of what you count has changed.

The floor: needs met, by name

Count the needs the organisation exists to meet in terms of the people who have them. Not average pay, but the number of people paid below a living benchmark. Not a training budget, but hours of training received, by team. Not a supplier policy, but the number of suppliers paid within thirty days.

The reason is that averages hide the floor. A firm's average pay can rise while the lowest-paid team falls further behind. A floor is breached by people, one at a time, and it should be counted that way.

The common error is the convenient denominator. The share of staff paid a living wage looks better if contractors are left out. The share of suppliers paid on time looks better if it is weighted by value, because large suppliers are often paid fastest. Choose the denominator that would show the problem if there were one.

The third ring: signs of aliveness, read over time

Chapter 4 argued that an organisation can meet its floor and respect its ceiling and still be running on exhausted people, and that this matters. It also warned that felt aliveness is hard to measure, easy to fake and open to misuse. The way through is to count ordinary behaviour that has an ordinary record, and to read it over time rather than as a score.

Four signs serve most organisations: the share of annual leave actually taken; voluntary turnover, by team; the time between a problem appearing and someone raising it; and hours spent learning. None of them is a measure of happiness. Each is something a tired or frightened organisation does less of, and each has a record that nobody has to fill in a survey to produce.

The common error is to turn the signs into targets. A team told it must take all its leave will take it and answer emails from the beach. A team told to raise problems faster will raise trivial ones. Read the signs. Do not reward them.



How to read a number honestly

HAUTE LUMIÈRE · THE STANDING FOREST · CHAPTER EIGHT

How to read a number honestly

Collecting the figures is the easier half. Reading them is where most organisations go wrong, and five habits protect against it.

State the baseline before the first reading. Write down what you expect each number to be before you see it. When it comes in, the difference between expectation and reality is the most informative figure on the page, because it shows where the organisation's picture of itself was wrong.

Keep the boundary fixed, or say when it moves. A number that is compared with last year's must be counted the same way as last year's. When the boundary changes, an acquisition, a new site, a different way of counting contractors, recalculate last year on the new basis, or show both.

Separate what you did from what happened. Chapter 7's evaluators of the Costa Rican forest programme spent years separating the programme's effect from everything else that was happening at the same time. An organisation cannot run a controlled trial on itself, but it can ask, of every improvement: what else changed this year that might explain this? A mild winter lowers gas use. A recession lowers material throughput. Neither is an achievement.

Read the direction before the level. For most measures, whether the number is moving the right way matters more in the first two years than where it stands. A flow that is falling slowly from a high level is in a better place than one that is rising slowly from a low level.

Keep the bad line. When a number disappoints, keep it in the report for at least a year, with a sentence on what the organisation has learned from it. The temptation is to drop an awkward measure and replace it with a better-looking one. Charles Goodhart observed, in a 1975 paper on monetary policy, that a statistical regularity tends to collapse once pressure is placed on it for control purposes, and the anthropologist Marilyn Strathern later put the general point in the form most people now quote: when a measure becomes a target, it ceases to be a good measure.[70] The protection is to keep the measures stable, to read them rather than reward them, and to let the bad lines stand where everyone can see them.

The report a board should see

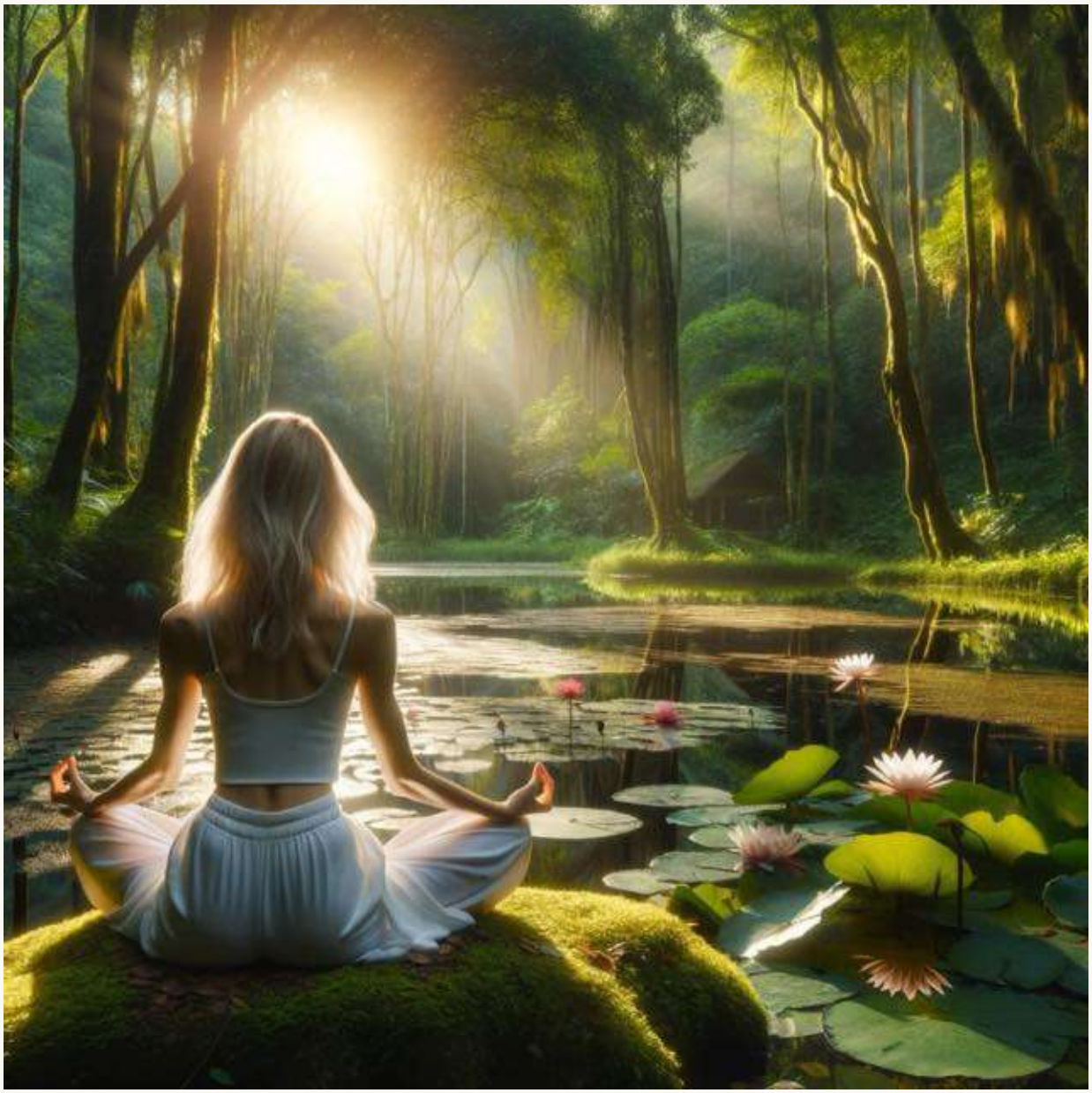
All of this fits on two pages, and the shape of those pages matters as much as their content.

Page one is the portrait. Four tables, one for each of the city portrait's lenses from Chapter 5: our people, our place, the people who supply us, and the planet. Each row is a measure in its own unit, this year's figure, last year's figure on the same basis, and the source. No index, no colours that suggest a target has been met, no arrows chosen by the person who wrote the report.

Page two is the reading. Three short paragraphs. The first says what moved and what the organisation thinks it did to move it, and what else might explain it. The second says which number disappointed, what

was expected and what was found. The third names the one or two measures the organisation still cannot produce, and what it would take to produce them. A report with no third paragraph is either very unusual or not yet honest.

Wales, in Chapter 6, required its public bodies to publish their shortfall, and gave an independent office the job of reading it. A board can do the same with its keeper. The person who reads page two aloud at the annual meeting should not be the person whose performance it describes.



A dashboard, read

HAUTE LUMIÈRE · THE STANDING FOREST · CHAPTER EIGHT

A dashboard, read

Return to Harrow & Vale, the composite furniture maker of Chapter 5, built for teaching; its figures are the writer's, not any company's. A year after drawing its first portrait, its ring lead produces the first Honest Dashboard. Three readings on page two show how the habits above work in practice.

What moved. Gas use fell from 2.6 gigawatt-hours to 2.3. The ring lead's first draft credited the new kiln controls installed in the spring. The keeper asked what else had changed, and the answer was the weather: the winter had been mild, and the firm's own heating-degree figures, available free from its energy supplier, showed about a tenth less heating demand than the year before. Corrected for the weather, the kiln controls accounted for perhaps a third of the fall. The paragraph on page two says so. It is a smaller claim and a believable one.

What disappointed. Timber bought rose from 2,300 cubic metres to 2,450 while revenue rose four per cent. The intensity figure, timber per pound of revenue, barely moved, which the old sustainability page would have reported as stable. In absolute terms, the firm took more wood from forests this year than last. The certified share rose from sixty-four to seventy-one per cent, which is real progress, and the paragraph reports both figures together, because either alone would mislead.

What we still cannot measure. Storm water leaving the site is now measured, thanks to the summer student's logger; that blank has been filled. Two remain: the wages paid by the two overseas hardware suppliers, who have not answered, and the condition of the soil in the forests the uncertified timber comes from, which nobody can see. The paragraph names both and says what it would take: a visit to one supplier, and a decision to stop buying untraceable wood. The second is a board decision, and the dashboard puts it on the board's agenda without making it.

Nothing on these two pages is a composite index, and nothing is coloured green. A board member reading them can see in five minutes where the firm stands, where it has moved, and what it does not know. That is the whole purpose.

Measurement for a household

A household needs less of all of this, and the principles are the same. Count one or two flows in their own units: kilowatt-hours from the meter, litres from the water bill, kilometres from the odometer, the weight of a week's food waste in the bin. Write the number down once a week on a sheet by the kettle. Count the household's floor by name: who in the house has a need that is short this month. And notice the signs of aliveness the way a family already does, without scoring them: who is sleeping, who is laughing, who has gone quiet.

The household's equivalent of the board report is a conversation once a month at a meal. What moved, what surprised us, what is short. Chapter 11 sets it out.

What this chapter cannot settle

There is no agreed standard for measuring an organisation's place in the ring, and this chapter does not offer one. The measures suggested here are deliberately ordinary, chosen because their records already exist and because they are hard to fake. They will miss things. An organisation's share of a planetary boundary depends on a fairness rule, as Chapter 3 showed, and no measure settles that rule. Felt aliveness will never be captured by four behaviours. What the chapter does claim is that a small set of honest, stable, unaggregated measures, read carefully over several years, will tell an organisation more about whether the work is working than any index, and that the habit of reading them honestly is itself the change.

The Tool: The Honest Dashboard

Two pages, produced once a year and reviewed at the board or household meeting. A shorter version, page one only, can be produced each quarter.

Before the first year. For each measure, write one line: the measure, its unit, its source, the denominator, and what you expect the first figure to be. Seal the expectations in an envelope, or a dated file, until the first figures come in.

Page one · The portrait.

LENS	MEASURE	UNIT	THIS YEAR	LAST YEAR (SAME BASIS)	SOURCE	BOUNDARY CHANGED?
Our people						
Our place						
Their people						
The planet						
Signs of aliveness						

Six to twelve rows in all. Absolute units first; add an intensity figure beside a flow only if the reader also sees the absolute.

Page two · The reading.

1 · *What moved.* Up to five sentences: the largest change, what we think caused it, and what else might have.

2 · *What disappointed.* Up to five sentences: the measure furthest from our sealed expectation, and what it teaches.

3 · *What we still cannot measure.* Up to three sentences: the blank rows, and what it would take to fill them.

Four rules.

1 · No composite score.

2 · No measure is dropped in the year it disappoints.

3 · No measure becomes a target for an individual's pay.

4 · Page two is read aloud by someone other than the person whose work it describes.

CHAPTER NINE

The Field Manual



The Field Manual

HAUTE LUMIÈRE · THE STANDING FOREST · CHAPTER NINE

A year, not a programme

This chapter sets out one year of work, week by week, for an organisation that has decided to see the ground it stands on and to act on what it sees. It is written for the person who will run it: a chief executive, an operations director, the head of a school or a housing association, the owner of a business with forty people in it. It names the roles, the meetings, the decisions and the documents, and it says at each stage what can go wrong and what to do about it.

The year has four quarters, and each has a single job. The first quarter is for seeing, and sets no targets at all. The second is for drawing the whole portrait and opening the argument. The third is for trying things. The fourth is for writing down what has been learned so that it outlasts the people who learned it. An organisation that skips the first quarter, which most are tempted to do, will spend the rest of the year defending targets it set before it knew where it stood.

The pace is deliberate. Santa Anna's *Ecstatic Economics* asks the reader, at the end of one chapter, for something small:

> *Not a grand transformation, but a seed — something small enough to start this week.*[71]

The year below is built from seeds. Each quarter's work is small enough for the organisation to do alongside its ordinary business, and each depends on the one before it. The book's other insistence is that the inner work and the structural work go together:

> *Consciousness transformation and structural transformation must proceed together. Neither can substitute for the other.*[72]

In a year of organisational work, that sentence has a plain meaning. The ledgers, portraits and charters are the structure. The way the meetings are held, the way objections are received and the way the first disappointing number is read are the other half. A manual that gave only the documents would produce documents.



The roles

HAUTE LUMIÈRE · THE STANDING FOREST · CHAPTER NINE

The roles

Six roles carry the year. In a small organisation one person may hold two of them. No one person should hold all six.

The sponsor. The most senior person who will be accountable for the work: the chief executive, the head, the owner. The sponsor opens each quarter, decides the questions that need a decision, and protects the time. The sponsor does not run the work.

The ring lead. The person who runs the year: convenes the meetings, keeps the documents, chases the figures. Usually someone in operations or finance, because they know where the figures live. The role takes perhaps a day a week in the first quarter and half a day a week after that.

The keeper. A non-executive director, a governor, a trustee, or in a firm without a board a respected senior person outside the line of management. The keeper's job, adapted from the Welsh Future Generations

Commissioner in Chapter 6, is to ask the long-term question at every meeting and to read the shortfall aloud once a year. The keeper has a voice and no veto.

The recorders. One person for each flow or need being counted, who records the figure on the agreed day each week or month. Recorders should be people close to the flow: the facilities manager for energy, the warehouse lead for waste, the payroll administrator for pay against the benchmark.

The working group. Six to ten people from across the organisation, chosen to include the shop floor, the front line and at least one sceptic. The group draws the portrait, runs the Objection Register and designs the trials. Membership changes after six months.

The steward liaison. One person who holds the relationship with the suppliers, growers or landholders the organisation depends on most, and who will visit them. In a small firm this is often the owner.

Before the year begins: two weeks of preparation

Week minus two · The sponsor decides. The sponsor writes one paragraph saying why the organisation is doing this, what it is not doing, and how long it will take. The paragraph should say plainly that the first quarter sets no targets. It should not mention any outcome. The sponsor appoints the ring lead and asks the keeper.

Week minus one · The ring lead finds the figures. Before anyone meets, the ring lead makes a list of every figure the organisation already holds that bears on its flows, its people and its suppliers: utility bills, waste invoices, the purchase ledger, payroll, the leave record, the accounts payable ageing, the training log, the accident book. Next to each, the ring lead notes where it lives and who can produce it. This list is the most useful document of the first month. It nearly always shows that the organisation holds far more than it thought.

Decision for the sponsor: the membership of the working group. Include a sceptic on purpose. A group without one will be ambushed later by objections it never heard.

Quarter one · Seeing (weeks 1 to 13)

The only job of the first quarter is to see accurately. No targets, no policies, no announcements beyond the sponsor's paragraph.

Week 1 · The opening meeting. The sponsor opens, reads the paragraph, and leaves. The ring lead takes the working group through the idea in forty minutes: the coastline, the two rings, the organism in its habitat. Chapters 2 and 4 are enough. Then one question, in the Luminous wording from Chapter 4: where is a virtuous cycle already alive here? Write every answer on the wall. Choose one to name publicly before the meeting ends.

The reason for starting with what works is practical, and Chapter 3 gave it: a team that feels secure in what it has done can look at what it has not. A team that opens with a chart of overshoot will spend the meeting defending itself.

Week 2 · Choose the flows. The working group chooses three to five flows across the coastline to count, in their own units. For most organisations: energy, the largest material, water, waste, transport. The ring lead assigns a recorder to each. Each recorder writes down, before seeing any figure, what they expect it to be.

Weeks 3 and 4 · First readings. The recorders produce the last twelve months of each flow from existing records, in absolute units, month by month, with revenue beside them. The ring lead produces the floor measures for the organisation's own people: pay against the living benchmark, leave taken, turnover, training, injuries, by team.

Week 5 · The first honest number. The working group meets to see the figures for the first time. Chapter 8 described this afternoon. The ring lead opens by reading out the sealed expectations beside the actual figures. The difference is the subject of the meeting.

What can go wrong: the group reads a bad figure as an accusation, and the person responsible for that area defends it. The ring lead should say, before the first figure is shown, that nothing found in the first quarter is anybody's fault, because nobody was asked to count it before.

Weeks 6 to 9 · The Two-Ring Ledger. The ring lead completes the Two-Ring Ledger from Chapter 2 for the most recent quarter, with the working group's help. Recorders begin recording their flows weekly or monthly from now on, on the agreed day, in the same unit.

Weeks 10 and 11 · The Metabolism Map. The working group draws the Metabolism Map from Chapter 4 in a ninety-minute session: the diet, the wastes, the output, the body, the loops, the reciprocities, the coat. The blank reciprocities are the most important marks on it.

Week 12 · The sponsor sees it. The ring lead presents the ledger and the map to the sponsor and the keeper, in one hour. The presentation has three parts: what we already do well, what we found that surprised us, and what we still cannot measure.

Week 13 · Quarter review. The keeper asks one question: what did we learn about ourselves this quarter that we did not know? The answer is minuted.

Decision for the sponsor at the end of quarter one: whether to continue. In practice the answer is almost always yes, because the figures are now visible and cannot be unseen. But the sponsor should make the decision explicitly, because a continuation that was never decided can be quietly abandoned.



Quarter two · The whole portrait (weeks 14 to 26)

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Quarter two · The whole portrait (weeks 14 to 26)

The second quarter widens the view from the organisation's own body to its whole habitat, and opens the argument.

Weeks 14 and 15 · Lens one and lens two. The working group completes the first two lenses of the Four-Lens Portrait from Chapter 5: our people, and our place. For lens two, someone finds out what the site was before the organisation was on it. This usually requires a phone call to the local authority or a visit to the library, and it is nearly always worth it.

Weeks 16 and 17 · Open the register. The ring lead opens the Objection Register from Chapter 3 and sends a short note to everyone in the organisation: the work so far, the figures found, and an invitation to raise any objection, in their own words. Every objection goes in the register, untidied.

What can go wrong: very few objections come in, and the group concludes everyone agrees. More often, people do not yet trust that an objection will be received well. The keeper should raise one themselves, publicly, in the first week, and the ring lead should answer it in writing.

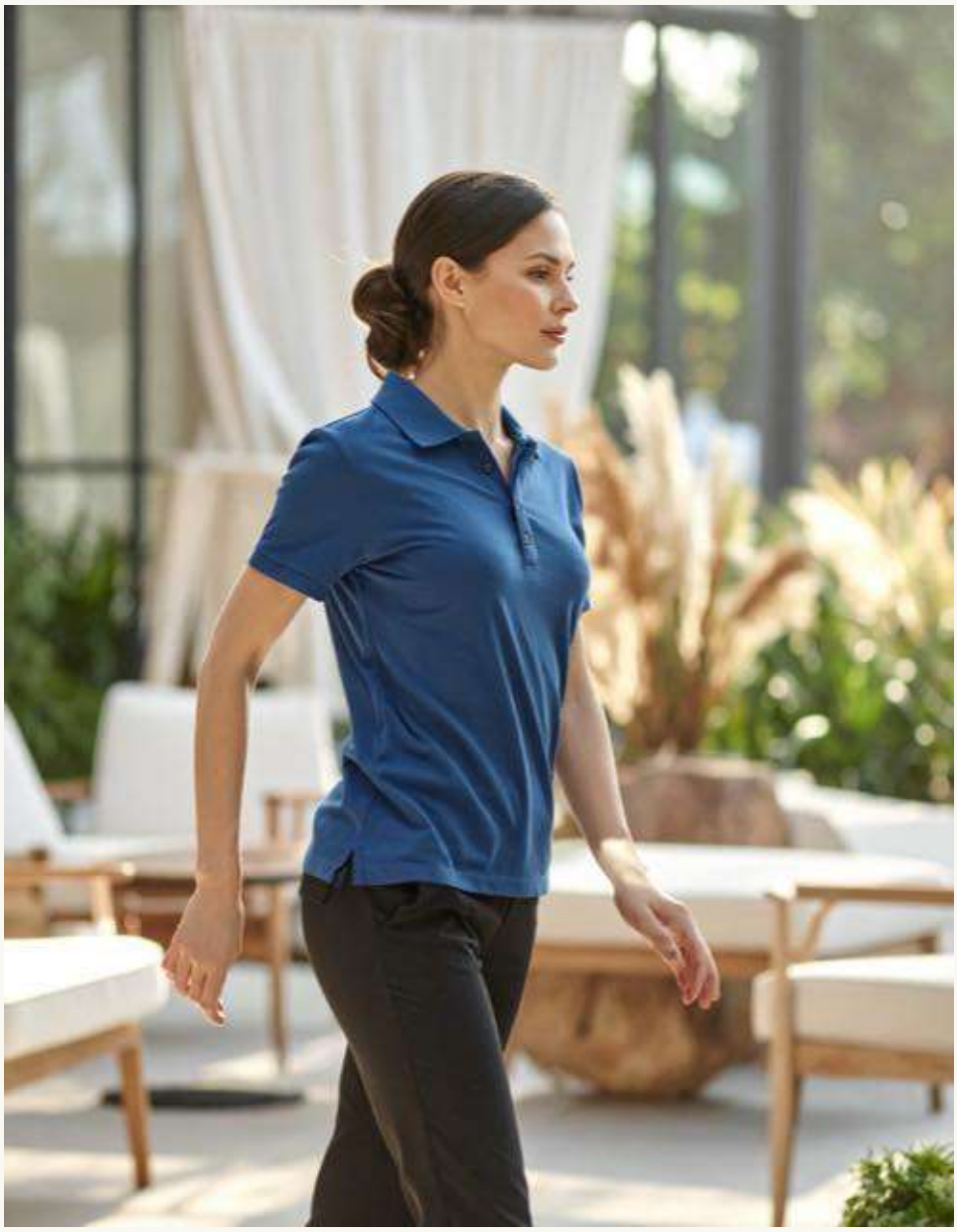
Weeks 18 to 21 · Lens three and lens four. The steward liaison and the working group complete the two global lenses: the people who supply us, and the planet. Lens three requires the supplier questions from Chapter 5: when we last visited, how fast we pay, whether they can name a standard they meet. Lens four requires the purchase ledger in physical units. For many organisations these are the hardest lenses, because the figures belong partly to someone else. Write *not measured* where a figure does not exist. Do not estimate to fill a blank.

Week 22 · Read the portrait. The working group lays the four lenses side by side and marks, in each, the row that surprised it most. For each marked row, it writes a question beginning *What would it take to…*. Four questions in all.

Weeks 23 to 25 · Cost the four questions. For each question, the ring lead and the relevant manager produce a rough cost and a rough benefit, using the organisation's own figures. Chapter 5's composite furniture maker found its finishing-shop pay rise cost less than the year's recruitment of leavers. Comparisons of that kind are the purpose of this step. The costs need not be precise. They need to be honest about their imprecision.

Week 26 · Quarter review. The keeper reads the register's open lines aloud, and the working group reports the four questions and their rough costs to the sponsor.

Decision for the sponsor at the end of quarter two: which of the four questions to try first. The usual answer is the cheapest, because a cheap success builds the trust a harder trial will need. Sometimes the right answer is the most important, if it concerns safety, pay below a living benchmark, or a legal exposure the portrait has revealed. The sponsor writes down which, and why.



Quarter three · Trying (weeks 27 to 39)

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Quarter three · Trying (weeks 27 to 39)

The third quarter tries one or two things and measures what happens.

Week 27 · Design the trial. For each chosen question, the working group writes a one-page trial: what will change, where, for how long, what will be measured before and after, in which units, and what else might explain any change. The last line matters most. Chapter 7's Costa Rican evaluators spent years separating a programme's effect from everything happening around it. An organisation's trial cannot be that rigorous, but it can name the obvious confounders: the weather, a new contract, a change of staff.

Weeks 28 to 37 · Run it. The trial runs for ten weeks. Recorders continue their ordinary flows. The ring lead keeps a short weekly note of anything unexpected. Nobody changes the trial's design halfway through unless it is causing harm.

What can go wrong: the trial produces an early good result and the organisation rolls it out everywhere before it has finished. Hold the line. A result that holds for ten weeks is worth more than one that held for three.

Weeks 32 and 33 · The first stewardship conversation. In the middle of the trial, the steward liaison visits the organisation's most important supplier or steward and drafts, together with them, the Stewardship Contract from Chapter 7. It need not be signed this quarter. The conversation is the point.

Week 38 · Read the trial. The working group compares before and after, names what else might explain the difference, and writes a one-page result. The result has three possible headings: *it worked*, *it did not work*, *we cannot tell*. All three are useful. The third is common, and the honest response is usually to run the trial for longer, or on a second site.

Week 39 · Quarter review. The keeper asks: what did we try, what did we learn, and did anything we learned contradict what we expected? The register is updated: objections the trial answered are marked, and any objection the trial proved right is marked *conceded*.

Decision for the sponsor at the end of quarter three: whether to adopt the trial's change permanently, extend it, or stop it. The sponsor writes down the reason.

Quarter four · Writing it down (weeks 40 to 52)

The fourth quarter turns a year of work into documents that will outlast the people who did it.

Weeks 40 to 42 · Draft the Purpose Charter. The sponsor, the keeper and the working group draft the Purpose Charter from Chapter 6: the needs the organisation exists to meet, the limits it will respect, what happens when a decision would trade one ring for the other, the ways of working, the keeper, the threshold for new commitments, and where the shortfall will be published. The draft goes to everyone in the organisation for comment, with two weeks to reply.

Weeks 43 and 44 · First targets, if any. Only now, with a year of figures, does the organisation consider targets, and only for measures whose figures it trusts. A target should be set as a direction and a range for the next year, not a point, and it should name the fairness rule behind it, as Chapter 3 showed in the example of the regional food company. Many organisations will set targets for one or two flows and leave the rest as measures to be read.

Weeks 45 to 47 · The Honest Dashboard. The ring lead produces the first annual Honest Dashboard from Chapter 8: the portrait on page one, the reading on page two. Last year's figures, where they exist, are on

the same basis. The third paragraph of page two, what we still cannot measure, is written by the working group.

Week 48 · The board meeting. The board, or the leadership team, adopts the Purpose Charter and receives the Dashboard. The keeper reads page two aloud. The ring lead reads aloud every *conceded* line in the Objection Register. Chapter 10 has the scripts for the questions that will come.

Weeks 49 to 51 · Tell people. A short note to everyone in the organisation and to the stewards it depends on: what was found, what was tried, what has been adopted, what is still unknown. The note should include the most disappointing figure, and should not include any word that promises an outcome.

Week 52 · Rest and redraw. The working group redraws the Metabolism Map from scratch, without looking at the first one, and then lays the two side by side. The membership of the working group changes. The ring lead takes a week off.



The second year

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The second year

The second year has the same shape and goes faster. The first quarter takes four weeks instead of thirteen, because the figures are already being recorded. The portrait is redrawn from fresh figures before last year's is consulted. The register carries over. The trials are larger, or run on more sites. The charter is reviewed, not rewritten, and the keeper's annual report names one decision it changed, one it should have changed and did not, and one line that needs rewriting.

By the third year, if it is working, the ring lead's role has shrunk, because the recorders, the working group and the keeper have absorbed it into ordinary work. That is the sign the year has become a practice. If the role has grown instead, the organisation has built a department, and should ask why.

The year at small scale

A business with twelve people has no board, no working group and no non-executive. The year still works, compressed. The owner is the sponsor and the ring lead. The keeper is someone outside the business whose judgement the owner trusts: an accountant, a former colleague, a customer of long standing, met for an hour once a quarter. The working group is everyone, at a monthly staff meeting with one item on the agenda. The recorders are whoever pays each bill.

The figures are fewer and easier to find, because the owner usually signs every invoice. The four lenses can be drawn in an afternoon. The trial is one change in one corner of the business, and its result is visible within weeks. The charter is a single page pinned in the back office.

What does not compress is the first quarter's rule: no targets until the figures have been seen. A small business is more tempted than a large one to announce a goal, because its owner is closer to its customers and wants to tell them something. The temptation is worth resisting for thirteen weeks. A small business that announces a target it later misses loses more trust, in a smaller town, than a large firm ever does.

The bakery in Chapter 4 is a composite of exactly this scale. Its owner found, by reading one year five ways, a waste loop held together by two tired bakers, a miller whose convenience the bakery was financing, and a year of growth the street had given and the bakery had not earned. Nothing in the year above would have been needed to find those things except the decision to look.

Seven ways the year goes wrong

Every organisation that runs this year will meet at least two of these. None is fatal.

The sponsor delegates and disappears. The ring lead runs the year alone, and the board hears about it once, in week 48. Remedy: the sponsor attends the four quarter reviews, and the keeper asks at each board meeting what the sponsor has decided.

Targets arrive in week three. Someone senior wants a number to announce. Remedy: the sponsor's paragraph said no targets in the first quarter. Read it aloud. Offer instead to announce the first honest figures at the end of quarter one.

The figures become a weapon. A manager's area shows badly, and the manager is blamed. Remedy: the rule that nothing found in the first year is anybody's fault. The ring lead says it at every meeting until it is believed.

Every objection is answered and none conceded. The register becomes a list of rebuttals. Remedy: the keeper reads the register at each quarter review and asks which objection the organisation has been wrong about. If none, the register is not being used honestly.

The global lenses are left blank. Lenses three and four are hard, and the working group quietly fills only lenses one and two. Remedy: *not measured* is an acceptable entry; an empty lens is not. Every lens must have at least one measured row by the end of the year.

The trial is too big. The organisation tries to change everything at once and cannot tell what worked. Remedy: one change, one place, ten weeks.

The vitality signs are turned into targets. Someone proposes rewarding teams for taking their leave. Remedy: Chapter 8's rule. Read the signs. Do not reward them.

What this chapter cannot promise

A year of this work does not guarantee that an organisation's flows will fall, that its people will thrive or that its suppliers will be better off. It guarantees that the organisation will know, more accurately than before, where it stands on each, and that it will have built the habits and documents to keep knowing. Whether it then acts is a decision for its leaders, made with better information than they had. The manual is a way of seeing and of deciding. It is not a promise of results.

The Tool: The Year Plan

One page, kept on the wall of the room where the working group meets.

QUARTER	WEEKS	THE JOB	DOCUMENTS	THE SPONSOR'S DECISION
Before	−2 to 0	Decide and find the figures	Sponsor's paragraph; list of figures held	Working group membership
One · Seeing	1–13	Count, without targets	Two-Ring Ledger; Metabolism Map	Continue or stop
Two · Portrait	14–26	Draw all four lenses; open the argument	Four-Lens Portrait; Objection Register; four questions, costed	Which question to try
Three · Trying	27–39	One or two trials, ten weeks each	Trial designs and results; first Stewardship Contract draft	Adopt, extend or stop
Four · Writing	40–52	Charter, dashboard, board	Purpose Charter; Honest Dashboard	Adopt the charter

Under the table, four lines:

- *The sponsor's paragraph* (copied here, word for word).
- *The keeper* (name, and the question they will ask at every meeting).
- *The one rule:* nothing found in the first year is anybody's fault.
- *The virtuous cycle we named in week one* (written here, so it is not forgotten).

A note on method

The roles, timings and failure modes in this chapter are a practitioner's design, built from the tools of the preceding chapters; they are not drawn from a published evaluation of any organisation, and the durations are guides, not findings.

CHAPTER TEN

The Hard Conversations



The Hard Conversations

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Where the work actually stops

Most organisations that begin this work do not stop because the figures are hard to find. They stop in a room. A board member says, quietly and reasonably, that this is a fashion and the shareholders did not sign up for it. A union representative says that every time management talks about sustainability, somebody's overtime is cut. A supplier says the firm cannot ask questions about wages it is not prepared to pay for. A partner at home says they would rather not discuss the car. Each of these is a good objection, made by someone who is not careless and not hostile, and each can end the work if it is answered badly.

This chapter is about answering them well. It takes six conversations in turn, gives the objection at its strongest, describes what is usually going on underneath it, and offers a script: words a leader can say, adapted to their own voice. The scripts are not meant to win. They are meant to keep the person in the room, which is a different aim and a more useful one.

Santa Anna's *Ecstatic Economics* gives the principle the scripts are built on:

> *You cannot guilt or shame people into ecological behavior when their nervous systems are organized around survival.*[73]

A board member worried about the share price, a shop steward worried about jobs, a partner worried about the mortgage: each is, in the book's language, organised around survival, and each is right to be. The book also refuses to make villains of the people it disagrees with. Of the chief executive and the protester outside the building, it writes:

> *The CEO hoards because fear tells them there's never enough. The activist fights because fear tells them everything will be taken. Neither is wrong about the real dynamics at play.*[74]

A leader who walks into a hard conversation believing the other person is the problem has already lost it. A leader who walks in believing the other person is right about something, and is curious about what, has a chance.



Five habits for every conversation

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Five habits for every conversation

Lead with what is already working. Chapter 3 gave the reason: people who feel secure in what they have done can look at what they have not. Open every hard conversation with one specific thing the other person or their part of the organisation already does well inside the ring, with its figure.

Write the objection down in their words. The Objection Register from Chapter 3 exists for this moment. Saying "I'd like to put that in the register exactly as you said it" tells the person their concern will not be tidied away.

Answer from your own figures first. A study from another country persuades nobody who is worried about this country, this plant, this household. Your own ledger does.

Concede what is true. Every objection in this chapter is partly right. Say which part, aloud. A concession is not a defeat; it is the evidence that you are listening, and it makes the rest of what you say believable.

Ask for one small next step, not agreement. Nobody changes their mind in a meeting. They agree to look at a figure, to sit on a working group, to come back in a quarter. That is enough.

The board member: "This is a fashion"

The objection at its strongest. Boards have seen sustainability programmes come and go. Many produced glossy reports and little else. Some cost money that was never recovered. The board's duty is to the organisation's long-term health, and a framework drawn by an economist at Oxfam is not obviously part of that duty. If the chief executive wants to spend time on it, the board would like to see the business case.

What is usually underneath. A real fear of being made to look foolish, either by backing something that fails or by being seen to block something that later succeeds. And a reasonable impatience with programmes that have no figures.

The script.

> *"You're right that a lot of these programmes have produced reports and not much else, and I don't want to do that. So I'm not asking the board to adopt a framework. I'm asking for one quarter in which we count five things we already pay for, in their own units, alongside revenue, and bring you the figures with no targets attached. Our gas bill rose faster than our sales last year. I'd like to know why. If after one quarter the figures tell us nothing we didn't know, I'll say so and we'll stop."*

What makes it work. It concedes the history, names a figure the board already holds, removes the targets that would make the board feel committed, and offers a clear point at which to stop. It turns a question of belief into a question of evidence, which is the kind of question a board is designed to answer.

If the board member says "show me the business case." Do not invent one. Say:

> *"I can't give you an honest business case before we've counted. What I can give you is the cost of counting, which is about a day a week of one person's time for a quarter, and a date when you'll see what we found. After that, if there's a case, you'll see it in our own figures."*

The investor: "Our returns depend on growth"

The objection at its strongest. The organisation has borrowed, or raised equity, on the expectation of growing sales. Its lenders and owners are entitled to that growth. Talk of steady states and being agnostic about growth sounds, to a provider of capital, like a warning that the promise will not be kept.

What is usually underneath. Chapter 3's fifth objection, at the scale of one firm. The investor is correctly describing a structure in which the organisation's own commitments demand growth. The investor may also fear, wrongly, that ecological economics means deliberately shrinking.

The script.

> *"I want to be clear about what we're not doing. We're not planning to shrink and we're not abandoning growth. We're separating two things: growing in revenue and value, which we intend to keep doing, and growing in tonnes and kilowatt-hours, which we'd like to stop. Where we can grow the first without the second, everyone is better off, including you, because our costs fall. I'll report both, side by side, every quarter, so you can see whether we're managing it."*

What makes it work. It uses Daly's distinction from Chapter 2, growth and development, in the investor's own terms. It promises transparency, not outcomes. And it is honest: Chapter 3 showed that absolute decoupling is rare, and the script commits only to reporting whether it happens.

If the investor asks about the risk of not growing. Say what Chapter 3 suggested a firm should do:

> *"We're also looking at which of our own commitments only work if we keep growing, so that a flat year isn't a crisis. That should make us a safer borrower, not a riskier one."*



The union representative: "This is a pay freeze in green clothing"

HAUTE LUMIÈRE · THE STANDING FOREST · CHAPTER TEN

The union representative: "This is a pay freeze in green clothing"

The objection at its strongest. Workers have learned to be wary when management introduces a new framework. Efficiency programmes have meant redundancies. Cost-cutting has been described as sustainability. Wellbeing initiatives have meant mindfulness sessions instead of more staff. The union's job is to protect pay, jobs and conditions, and it has seen enough to be suspicious.

What is usually underneath. Experience, and a reasonable suspicion that the floor of the ring, the needs of the organisation's own people, will be talked about and the ceiling acted on, because cutting energy saves money and raising pay costs it.

The script.

> *"I understand why you'd be suspicious, and I'd be suspicious in your place. So here's what's different. The first thing we're counting is our own floor: how many of our people are paid below the living benchmark, how many take their leave, how many leave each year, by team. Those figures go on the same page as our energy and our waste, with the same weight. I'd like you, or someone you choose, on the working group that draws that page. And I'll put this in writing: nothing we find will be used to justify a redundancy without coming back to you first."*

What makes it work. It concedes the history, puts the floor first rather than last, offers a place in the work rather than a briefing about it, and makes a specific written commitment. It is only honest if the leader can keep the commitment. A leader who cannot should not make it, and should say instead what they can commit to.

If the representative asks for the vitality measures to be dropped. Take it seriously. Chapter 4 warned that felt aliveness can be misused by an employer who would rather improve morale than wages. Say:

> *"That's a fair worry. The signs we're counting are things like leave taken and turnover, not a happiness survey. They'll never be used to judge an individual, and they'll never be reported without the pay figures beside them. If you think any of them could be misused, put it in the register and we'll talk about it at the next review."*

The supplier: "You can't ask about wages you won't pay for"

The objection at its strongest. A small supplier receives a questionnaire about wages, safety and environmental practice from a customer that pays at sixty days and negotiates hard on price. The supplier's margin is thin. The questions feel like a compliance burden imposed by a larger firm that wants credit for its supply chain without paying for it.

What is usually underneath. The supplier is right. Chapter 5's composite furniture maker found it was paying its smallest suppliers slowest, the reverse of what reciprocity would ask. Chapter 7 showed that a stewardship payment works only if it arrives on time and can be relied on.

The script.

> *"You're right, and we've looked at our own figures. We've been paying you at sixty days while we pay our largest suppliers at thirty. That's the wrong way round, and we're changing it from next month. The questions aren't a test. We'd like to understand what it costs you to keep the standards we'd both like to keep, and whether there's anything we can do, in price, terms or timing, to make that easier. Could we visit, and talk it through?"*

What makes it work. It concedes the specific point with a figure, acts on it before asking for anything, and reframes the questions as a conversation about shared cost. It is the opening of a Stewardship Contract from Chapter 7.

The sceptic in the working group: "The science is too uncertain"

The objection at its strongest. Chapter 3's third objection. The planetary boundaries are estimates with wide error bars, several have been redefined, and a global figure says nothing about this factory. Building plans on such numbers is building on sand.

What is usually underneath. Often a person with technical training who has seen bad science used to justify bad decisions, and who is protecting the organisation from being made foolish.

The script.

> *"You're right that the boundaries are uncertain, and the scientists who drew them say so; they describe them as zones of rising risk, not cliff edges. That's why we're not starting from them. We're starting from our own figures, which aren't uncertain at all: what we burn, what we buy, what we throw away, measured from our own bills. Where we do use a global figure, I'd like you to be the person who checks how we've used it and writes down the assumptions. Would you?"*

What makes it work. It agrees with the sceptic on the science, moves the conversation to figures that are not in dispute, and gives the sceptic a role that uses their scepticism. A sceptic who is asked to check the work becomes its most valuable member.



The partner at home: "I'd rather not talk about the car"

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The partner at home: "I'd rather not talk about the car"

The objection at its strongest. A household's money and habits are bound up with work, health, children, ageing parents and a great deal of tiredness. A partner who has read a book about the doughnut and comes home wanting to measure the family's energy, review its spending and talk about what enough means can feel, to the other person, like a new form of judgement in the one place they hoped to be free of it.

What is usually underneath. Tiredness, and a fear that the conversation is really about who has been doing something wrong. Sometimes a real constraint: the car is the only way to reach a parent, the job is the only one available, the heating is on because someone is ill.

The script.

> *"I'm not trying to change anything yet, and I'm not saying we're doing anything wrong. I'd just like to write down one number a week for a month, how much electricity we use, and look at it together at the end. And I'd like to start by saying what I think we already do well, because I think there's quite a lot. If after a month it doesn't feel useful, we'll stop."*

What makes it work. It removes judgement, starts with what works, chooses a flow that is unlikely to be the sore point, and offers a clear end. It leaves the car alone. If the car matters, it will come up by itself, in its own time, from the person who knows why it matters.

Santa Anna's book draws a boundary here that the script respects. It says plainly that the inner work it describes is for people who already have enough material security to examine their relationship with scarcity, and is not a substitute for food, shelter, healthcare or safety.[75] A household under real material strain needs material relief before it needs a ledger. Chapter 11 takes this up.



The family business: "My father built this"

HAUTE LUMIÈRE · THE STANDING FOREST · CHAPTER TEN

The family business: "My father built this"

The objection at its strongest. In a family firm, the person who built the business is often still in it, and often on the board. Every practice the portrait questions, the timber bought from the cheapest mill, the supplier paid at sixty days, the yard paved over in 1987, was a decision somebody made, frequently the founder, for reasons that were good at the time. A daughter or son who brings the doughnut into that room can be heard as saying that the founder did it wrong.

What is usually underneath. Pride, which is earned, and a fear that the next generation will spend what the last one saved. Sometimes also a real knowledge the newcomers lack: why the yard was paved, which mill once saved the firm by extending credit in a bad year.

The script.

> *"Most of what this portrait shows is things the business has done well for forty years, and I'd like to start there: we've kept every one of the people who started with you, and we've never missed a payroll. What I'd like to understand is the history behind three rows I don't know the story of. Why the yard was paved. Why we buy from the mill we do. Why the small suppliers are on sixty days. You'll know, and I'd rather hear it from you than guess."*

What makes it work. It starts with the founder's achievement, with figures, and turns the questionable rows into questions of history the founder is best placed to answer. Often the answers change the plan: the mill may deserve loyalty, and the yard may have been paved for a reason that still holds. Where they do not, the founder has been part of seeing it, and a change the founder helped to see is a change the founder can approve.

When the conversation goes badly

Some conversations will go badly however they are handled. The board member will not be persuaded; the union will decline the place on the working group; the partner will say no. Three things help.

Record it. Put the objection in the register, in the person's words, marked *open*. It has not been lost and it has not been won.

Do not escalate. The pull, after a bad meeting, is to find a stronger argument or a more senior ally. Usually the better move is to go on counting, quietly, and come back with figures. An objection that was about belief often softens when it meets evidence it helped to shape.

Look for the part that was right. Nearly every hard conversation contains a concession the leader did not make. Find it afterwards, and make it next time.



What this chapter cannot do

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What this chapter cannot do

Scripts are scaffolding. Said without meaning, they sound like what they are, and an experienced board member or union representative will hear the difference at once. The words above work only if the leader believes the other person is right about something, has looked at the figures, and can keep the commitments the scripts contain. Where a commitment cannot be kept, the honest move is to say so and offer a smaller one. No script in this chapter has been tested in a controlled study. Each is built on the principles of the preceding chapters, and each should be rewritten in the voice of the person who will say it.

The Tool: The Conversation Card

One card, prepared before any hard conversation, and kept afterwards in the Objection Register.

Before.

1 · *Who, and what they are responsible for.* One line.

2 · *What they already do well inside the ring, with its figure.* One line. This is how you open.

3 · *Their objection at its strongest, in words they would recognise.* Two or three lines. Write it as their best advocate would.

4 · *What is probably underneath it.* One line. Name the fear without judging it.

5 · *What part of it is true.* One line. You will say this aloud.

6 · *The figure from our own ledger that bears on it.* One line, with its source.

7 · *The one small next step I will ask for.* One line. Not agreement: a step.

8 · *The commitment I can keep.* One line. If you cannot keep it, do not write it.

After.

1 · *Their words, exactly, for the register.*

2 · *What I conceded.*

3 · *What they agreed to.*

4 · *What I said I would do, and by when.* Do it.

CHAPTER ELEVEN

The Household Ring



The Household Ring

HAUTE LUMIÈRE · THE STANDING FOREST · CHAPTER ELEVEN

The oldest economy

The word economy comes from the Greek *oikonomia*, the management of a household. Before it described nations and markets it described a house: its stores, its fields, its people, the work of keeping them. It is fitting that the most useful scale for the ideas in this book turns out, in the end, to be the oldest one. A household can see the whole of its own ledger. It knows where its water comes from, who in it is tired, what it throws away on a Thursday. No national accountant has that view of anything.

This chapter brings the ring home. It is written for one person, or two, or a family, deciding how to live inside the coastline with the money and the work they have. It does not ask anyone to give anything up. It asks them to see the floor and the ceiling of their own household, to find what is already working, and to ask the question that Santa Anna's *Ecstatic Economics* places at the centre of its practice: what would be enough.

A boundary, first

Before anything else, the boundary the book itself draws, because a chapter about households that ignored it would do harm:

> *This chapter is not saying that material poverty is a mindset problem. People living in genuine material deprivation need material resources, not consciousness shifts.*[76]

A household that cannot pay its rent, heat its rooms or feed its children does not need a ledger of its throughput. It needs income, housing and support, and the floor of Raworth's ring is drawn precisely to say so. The fourth objection in Chapter 3, and the sixth, turn on this point: the poorest need the floor raised, and growth that raises it is the purpose. Everything below is written for a household that has enough security to look at its own relationship with enough. If that is not yet your household, the first line of your ledger is a need that is short, and the first move is to meet it.

The household's two rings

The Two-Ring Ledger from Chapter 2 works for a household with very little change.

The floor. The needs the household exists to meet, for each person in it: food, shelter, warmth, health, rest, learning, connection, a say in decisions, time. Write each person's name beside each need and mark it met, partly met or short. A household's floor is breached by individuals, as an organisation's is. The average can look fine while one person is not sleeping.

The ceiling. The four or five flows that cross the household's coastline in the largest volumes. For most households in rich countries these are home energy, travel, food, goods bought, and water. Each has a

meter, a bill, an odometer or a receipt, and each can be written down in its own unit: kilowatt-hours, litres, kilometres, kilograms of food waste, the number of things bought and not used.

The stock. The things the household holds whose condition its decisions make better or worse: the house itself, a garden or allotment, the bodies of the people in it, its savings, its friendships, the skills of its members. Boulding's crew, in Chapter 2, measured the condition of the ship rather than the speed of its consumption. A household that spends its health to earn its income is doing what a firm does when it consumes its own body and reports a record year.

Separating getting bigger from getting better

Daly's distinction between growth and development, from Chapter 2, is at its clearest in a household. Getting bigger is a larger house, a second car, a longer commute for a higher salary, more things. Getting better is a warmer house with the same floor area, a meal cooked together, a skill learned, an evening with nothing in it. Both can be good. A household that has a choice between them, and many have more choice than they think, can ask which it is choosing.

The most useful single question is the one Chapter 3 asked of a firm or a household: which of our commitments only work if we keep growing? For a household, that is usually a mortgage or loan whose repayments assume next year's pay rise, a pattern of spending that only balances at a higher income, or a working arrangement that only pays if someone works longer hours each year. Each is a place where the household's own structure, not its wants, is demanding growth. Each can be redesigned slowly, so that a good year is welcome and a flat year is not a crisis. This is not financial advice, and a household making a large financial decision should take advice from someone qualified to give it. It is a way of seeing which of the household's pressures are built into its structure.



The question of enough

HAUTE LUMIÈRE · THE STANDING FOREST · CHAPTER ELEVEN

The question of enough

Santa Anna's book offers a practice that is simple to describe and harder to do. Sit quietly, take three slow breaths, and bring to mind a phrase:

> *Now bring to mind the phrase: I have enough.*[77]

Notice what happens in the body: whether something opens or tightens, whether part of you agrees and another part objects. Then a second phrase:

> *Now try: There is enough for everyone.*[78]

The book does not claim that noticing the difference changes the world. It suggests that a person who has noticed it makes slightly different decisions, and it gives a reason drawn from the Buddhist economics it discusses:

> *The monk who owns a robe, a bowl, and nothing else can experience profound sufficiency. The billionaire who owns everything can experience profound deprivation.*[79]

That sentence is easy to misread as a claim that material circumstances do not matter, and the book is explicit that it means nothing of the kind. Its point is narrower. Past the floor, the feeling of having enough is not set by the amount held. A household that can name what enough feels like has a ceiling of its own, chosen rather than imposed, and usually more room inside it than it thought.

The book asks a second question, at the end of one of its chapters, that is worth asking aloud at a household table:

> *What did you learn about money, wealth, and "enough" from your family of origin?*[80]

Most adults carry an answer to that question they have never said aloud, and most households contain two or more different answers, which explains a good many of their arguments about money. Saying them aloud, once, without trying to settle anything, is often the most useful conversation a household has about its economy.

Work, and the third ring

For most households the largest flow is not energy or goods. It is the hours of work its members sell, and the condition in which they come home. Chapter 4's third ring, vitality, is easiest to see here. A household can meet every material need and respect every limit while one of its members is exhausted by a job that consumes more than it pays.

The signs of aliveness from Chapter 8 work at home without any scoring. Is everyone taking their leave? Is anyone working in the evenings as a habit rather than an exception? Does anyone dread Sunday night? Has anyone learned anything this year? None of these is a target. Each is an observation a household can make about itself, gently, and each can lead to a conversation about whether the hours being sold are buying what the household needs, or buying more than it needs at a cost it has not counted.

Santa Anna's book frames regenerative work in a sentence that applies to a job as well as an enterprise:

> *A regenerative workplace produces employees who leave each day with more energy, skill, and sense of purpose than they arrived with.*[81]

Few jobs meet that standard every day, and the book does not pretend they do. But it is a useful measure for a household deciding between two jobs, or deciding what to ask of the one it has. A job that consistently sends someone home with less than they brought is drawing down a stock, and the household is paying for it whether or not the payslip shows it.

The household's reciprocities

Chapter 4 asked an organisation, for each of its inputs, what it gives back to the source. A household can ask the same. Its food comes from farms; does it buy, where it has the choice, from growers who keep their land in heart, and does it pay them promptly? Its water comes from a catchment; does it know which one? Its care comes, often, from people outside it: grandparents, neighbours, a childminder, a friend who takes the children on a Tuesday. What does it give back to them?

Chapter 7's Stewardship Contract has a household form: a standing arrangement with a local grower, a weekly box of vegetables paid for in advance, a neighbour whose garden is watered in exchange for eggs. These are small. They are also exactly the kind of reciprocity the Honorable Harvest describes, and that Chapter 2 found in Daly's rules with numbers attached.



The household's commons

HAUTE LUMIÈRE · THE STANDING FOREST · CHAPTER ELEVEN

The household's commons

Many of the things a household depends on are not its own: the park, the library, the bus route, the river at the end of the road, the school. These are commons, in Elinor Ostrom's sense, and the neighbouring book in this lineage, *The Pasture Was Never Empty*, takes them up at length. A household's part in them is small and real. It can use the library, so that the library stays open. It can join the friends of the park. It can turn up to the meeting about the bus route. Santa Anna's book suggests, in its chapter on governance, identifying "one concrete, feasible act of governance participation" and taking it. For a household, that is often the most effective single move it can make on the ceiling, because a commons kept in good order lowers everyone's flows at once.

A household year

The organisation's year in Chapter 9 has a household version, much shorter, set out in full in the workbook. Its shape is this.

One month of seeing. One flow, written down weekly in its own unit on a sheet by the kettle. Each person names one need of theirs that is met and one that is short. Nothing is changed.

One conversation. At the end of the month, at a meal: what surprised us, what do we already do well, what would enough look like.

One quarter of trying. One small change to the flow, and one to a need that was short. Keep writing the flow down.

One look back. Lay the weeks side by side. Say what changed and what did not.

That is all. A household that does it once will have a clearer picture of its own economy than most households ever have. A household that does it every year will have built, without much effort, a practice of seeing its own coastline.

One household, worked

What follows is a composite, built for teaching. The household is not real; its names and every figure in this section were set by the writer to show the method.

Ruth and Daniel live with their two children, eleven and fourteen, and Ruth's mother, who moved in two years ago, in a semi-detached house on the edge of a market town. Ruth teaches; Daniel manages a builders' merchant twenty-six kilometres away. Their combined income covers the mortgage, the bills and a modest holiday. They are not short of anything the floor of Raworth's ring would name, and they are tired.

They begin, as the chapter suggests, with one sheet by the kettle. They choose electricity, because the smart meter makes it easy and because nobody feels guilty about it. On the first day each person writes one need met and one need short. The fourteen-year-old writes *met: food* and *short: a room to myself*. Ruth's mother writes *met: company* and *short: getting out of the house*. Ruth writes *short: sleep*. Daniel writes *short: time with the kids that isn't driving them somewhere*. Nobody discusses the lines for a month.

The electricity figures hold one surprise. The household uses about a fifth more on weekdays than at weekends, though everyone is out on weekdays. The fourteen-year-old finds the reason in an afternoon: a tumble dryer that runs every evening, and a games console left on standby that draws more than the fridge. Neither is a moral failing. Both are small, and the household changes them in a week.

The conversation at the end of the month is the part that matters. Read aloud, the needs that are short turn out to share a cause. Daniel's fifty-two kilometres a day, and the children's activities spread across

three villages, mean the car is the household's largest flow and its largest drain on time. Ruth's mother cannot drive and depends on lifts. Ruth's lost sleep is partly the hour after the children are in bed, when she marks books because the evening before was spent driving.

The household does not sell the car. It makes two smaller changes. The children's activities are consolidated, by their choice, into two villages instead of three, which removes one evening of driving a week. And Daniel asks his employer whether he can work from the branch nearer home one day a week, which he had assumed would be refused and is not. Ruth's mother joins a lunch club that has its own minibus, which she had heard of and never asked about.

In the language of this book, nothing here was a sacrifice. Throughput fell, a little, and the floor rose, a little, for three of the five people in the house. The flow they measured, electricity, was not the one that mattered most; it was the one that started the conversation. The question *what would enough look like?*, asked over a meal in the fourth week, produced the answer that changed the most, from Daniel: *enough would be being home by six twice a week.* None of their accounts had a line for that.



What this chapter cannot do

HAUTE LUMIÈRE · THE STANDING FOREST · CHAPTER ELEVEN

What this chapter cannot do

It cannot raise a household's income, lower its rent or cure its tiredness. It offers no financial advice, and a household with debts, investments or a large decision to make should take advice from someone qualified to give it. It cannot make one household's choices settle a planetary question; a household's flows are small, and most of the ceiling will be kept or breached by firms and governments. What it can do is help a household see its own ground, find what already works, notice the difference between getting bigger and getting

better, and make its next decision with that in view. That is a modest claim, and the household is where it is easiest to test.

The Tool: The Kitchen-Table Ring

One sheet of paper, kept by the kettle, for one month at a time.

Across the top. The household's names.

Section 1 · Our floor. Under each name, two lines: *one need of mine that is met*, *one need of mine that is short*. Written on the first day of the month, not discussed until the last.

Section 2 · Our flow. One flow, chosen together: electricity, gas, food waste, car kilometres, or things bought and not used. Its unit. A row for each week, with the figure and the date.

Section 3 · What already works. Three things the household does well without trying, written on the first day by whoever is first to the kettle.

Section 4 · Enough. One sentence from each person, written during the month whenever it comes to them: *I felt I had enough when…*

Section 5 · The last day. At a meal, read the sheet aloud and answer three questions:

1 · What surprised us?

2 · What would enough look like, for this flow and for the needs that were short?

3 · What one small change would we like to try next month?

Write the change at the bottom. Start a fresh sheet. Keep the old ones in a drawer. After twelve, lay them side by side.

CHAPTER TWELVE

The Standing Forest



The Standing Forest

HAUTE LUMIÈRE · THE STANDING FOREST · CHAPTER TWELVE

One picture is not enough

A picture that explains everything explains too little. The doughnut has been so successful as an image that it is sometimes asked to carry more than any image can: to be a theory of value, a policy programme and a moral compass at once. Kate Raworth never claimed that much for it. She called it a compass, not a map, in the title of her 2017 comment in *The Lancet Planetary Health*, and a compass tells you which way is north without telling you how to cross the river in front of you.[82]

The chapters before this one took the doughnut on its own terms: its history, its critics, the house's living-systems reading, a city, two governments and a forest, and then the year of work, the measures, the conversations and the household. This last chapter sets the ring beside four neighbouring ideas, each the subject of its own book in this lineage. Each adds something the doughnut lacks. Each is corrected, in turn, by something the doughnut supplies. Then it returns to the forest.

Santa Anna's *Ecstatic Economics* warns against the temptation this kind of chapter invites, what the book calls premature synthesis: blending every tradition into a single feel-good framework and erasing the differences between them. The book prefers "productive tensions", and asks for polyphony rather than unison.[83] What follows tries to keep the tensions audible.

Beside the commons: who keeps the ring

The doughnut tells you where the safe and just space lies. It does not tell you who keeps a community inside it. That question belongs to Elinor Ostrom, whose work on governing common-pool resources is the subject of a neighbouring book, which ends on [a commons on Monday]({{E:ee-commons-5}}).

Ostrom spent her career studying fisheries, forests, irrigation systems and grazing lands that communities had governed sustainably, sometimes for centuries, without either private ownership or central control. From hundreds of cases she drew a set of design principles that the long-lived institutions shared: clear boundaries, rules fitted to local conditions, collective choice by the people affected, monitoring by people accountable to the community, graduated sanctions, cheap ways to resolve conflict, and recognition of the community's right to organise. In 2009, the year she was awarded the Nobel memorial prize, she published in *Science* a general framework for analysing the sustainability of what she called social-ecological systems: resource systems, the resource units they produce, the users who draw on them and the governance that holds them together, all set within wider social and ecological settings.[84]

What Ostrom adds. A ring with no keeper is a wish. Her principles describe how real communities have stayed inside limits without being forced. The ceiling of the doughnut is, for any particular watershed or fishery, a commons problem, and her research is the best evidence anyone has on how such problems are solved in practice.

What the doughnut adds back. Ostrom's cases are mostly local and mostly about one resource. The doughnut insists on the global lenses: a well-governed local fishery can still sit inside a city whose consumption overshoots the planet. Chapter 5's four-lens portrait is, in effect, a way of asking an Ostrom question at every scale at once.

Beside complexity: an economy that evolves

The doughnut is a static picture: a ring, drawn at a moment. Real economies move. The neighbouring book on complexity economics, which closes on [the path across the lawn]({{E:ee-complexity-5}}), follows the work of Brian Arthur and others who treat the economy as an evolving system, in which small early advantages can lock in, increasing returns make some technologies dominant for reasons that have little to do with their merit, and the future is shaped by the path taken to reach it.

What complexity adds. It explains why an economy that knows it is overshooting does not simply turn back. Coal plants, road networks and suburban housing are not only physical stock; they are commitments around which jobs, skills, tax bases and habits have grown. Lock-in is the reason the fifth objection in Chapter 3, that economies are built to need growth, is so stubborn. It also suggests the way out: lock-in works in both directions. A city that builds a good tram network, or a firm that trains its people in repair, creates its own increasing returns.

What the doughnut adds back. Complexity economics is often silent about where the system should evolve to. A theory of how economies change is not the same as a view of which changes are good. The doughnut supplies a direction: towards the ring, from whichever side a given economy is on.

The Luminous 100's reading of systems thinking puts the two together in a single question, which Chapter 4 quoted and which bears repeating here, because it is the question an evolving system most needs to be asked: "Where are the virtuous cycles already alive in this system?"[85]



Beside regeneration: more than less harm

HAUTE LUMIÈRE · THE STANDING FOREST · CHAPTER TWELVE

Beside regeneration: more than less harm

The doughnut defines a space between overshoot and shortfall. It is possible to read it as a list of things not to do: do not exceed this boundary, do not fall below that floor. The neighbouring book on regenerative and circular economics, as far as [life at the edges]({{E:ee-regenerative-5}}), takes up a more ambitious question, associated with John Fullerton's regenerative capitalism and with the circular economy: not only how a business can do less harm, but how it can leave the systems it touches healthier than it found them.

What regeneration adds. Raworth herself made "create to regenerate" one of her seven ways, and the regenerative literature gives it working detail: designing products to be repaired and remade, farming to rebuild soil, sourcing to restore the forests timber comes from. In the language of Chapter 4, it asks a firm not only to manage its metabolism but to strengthen its habitat.

What the doughnut adds back. Regeneration is easy to claim and hard to measure. A firm that calls itself regenerative because one product line uses recycled material, while its total throughput rises, has mistaken a gesture for a direction. The doughnut's ceiling is the check: regeneration that does not show up as falling absolute flows or recovering stocks has not yet happened.

Santa Anna's book frames the same check in its own terms, as reciprocity: "Every taking must be balanced by a giving. Every extraction must be matched by a restoration."[86] A regenerative claim can be tested against that sentence, flow by flow.

Beside enough: the question under all of them

The last neighbour is the deepest. The neighbouring book on scarcity as a design choice, which ends on [the art of life itself]({{E:ee-abundance-5}}), begins with John Maynard Keynes's 1930 essay "Economic Possibilities for our Grandchildren", in which he predicted that within a century the economic problem, the struggle for subsistence, might be solved in the progressive countries, and that people would then face the harder problem of how to live wisely and well with what they had. It continues through Amartya Sen's argument that development should be measured by what people are able to do and be, not by what they own.

What the question of enough adds. Every framework in this book assumes that, past a point, more is not better. None of them says where that point is for a particular person or household. That is not a question an economist can answer from outside. Santa Anna's book asks it from inside, in a reflective question at the end of one of its chapters:

> *When was the last time you experienced genuine sufficiency — the bodily sense of having what you need, wanting nothing more?*[87]

The book is careful about whom this question is for. It states plainly that people in real material deprivation need material resources, not a change of mind, and that its inner work is for those who already have enough security to examine their relationship with scarcity.[88] With that boundary drawn, the question becomes practical. A household that can name what enough feels like has a ceiling of its own, chosen rather than imposed, and a good deal more room inside it than it thought.

What the doughnut adds back. Enough, without the floor, can become a comfortable person's reason to ignore someone else's shortfall. The doughnut's inner ring keeps the question honest: one person's sufficiency is good news only if the people they depend on have theirs.

The book offers a second reflection, from an earlier chapter, that sits exactly on this boundary:

> *Now try: There is enough for everyone.*[89]

It is an invitation to notice what happens in the body when the sentence is read, and the book does not claim that noticing it changes the world. It does suggest that a person who can say it without flinching makes different decisions at work on Monday.

Where the neighbours disagree

Set side by side, the five ideas do not agree on everything, and the disagreements are useful. Three are worth naming.

Scale. Ostrom's evidence is strongest for resources a community can see and walk: a fishery, a pasture, an irrigation canal. The doughnut's ceiling is drawn for the whole planet. Between the two lies a gap that neither fills by itself. A village can govern its forest; nobody governs the atmosphere in Ostrom's sense, and her own later work on what she called polycentric governance was an attempt to describe how many overlapping centres of decision might do together what no single one can. For a leader, the practical lesson is that the global boundaries will not be kept by any one actor, and that the actors who keep them will be many and partial. A firm's portrait is one of those centres.

Direction. Complexity economics is wary of any picture that tells an evolving system where to go. Arthur's work shows how outcomes depend on paths, accidents and timing, and a complexity economist may regard a fixed ring as too tidy for a world that keeps changing its own rules. The doughnut's defenders answer that the ceiling is set by physics, not by preference, and that a system free to evolve is still not free to evolve beyond its biosphere. Both are right about something. The ring is a constraint on the space; the path through the space is still open, and still shaped by small decisions taken early.

Ambition. The regenerative literature asks more of a business than the doughnut does: not only to stay within the ring but to enlarge the living capacity inside it. The question of enough asks less in material terms and more in inner ones. A regenerative firm may want to grow, if its growth restores; a household that has found its enough may want to shrink its flows, whatever they restore. The doughnut sits between them and is agnostic, which is its strength and, for some readers, its frustration.

Santa Anna's book would not resolve these tensions, and on its own account should not. Its phrase for the alternative is "premature synthesis", and the cost of it is a framework that sounds complete and helps nobody decide anything. The useful practice is to carry all five ideas into a decision and ask each one its own question: who keeps this, which path does it lock in, does it restore, is it enough, and does it stay inside the ring. A decision that passes all five has been examined from five directions. A decision that fails one has at least been seen clearly.

There is one further point on which all five agree, and it is the reason they belong in one lineage. Each treats the economy as something that sits inside a larger living world and answers to it. Each refuses the textbook picture of a loop with no coastline. Santa Anna's book states the shared premise in its most compressed form, and it is the sentence this book has returned to most often: "the economy is a subset of ecology, not the other way around."[91]



Two further neighbours

HAUTE LUMIÈRE · THE STANDING FOREST · CHAPTER TWELVE

Two further neighbours

Two more books in this lineage sit just beyond the edge of this one, and a reader who has come this far will meet both.

The first is on gift, reciprocity and trust. This book has leaned throughout on the principle Santa Anna's book takes from the Honorable Harvest, that every taking is balanced by a giving. The neighbouring book follows that principle into the experimental evidence on how people actually reciprocate, and why a pay-

ment that arrives on time buys more than a larger one that arrives late. The Stewardship Contract in Chapter 7 is, in that book's terms, a gift relationship given a written form.

The second is on purpose and patient capital. Chapter 3's fifth objection, that economies are built to need growth, is at its sharpest in the expectations of the people who provide capital. The neighbouring book takes up what ownership and governance look like when they are designed for the long term, which is the condition under which a firm can afford to read its ring honestly in a year when the reading is poor.

What the book asks

Everything in this book comes down, finally, to what one leader or one household does next, and the answer is smaller than the subject. Santa Anna's book asks for "a seed — something small enough to start this week."[90] For a leader, the seed is a single observation: one flow across the coastline, measured for one month in its own unit, beside revenue, with nothing else done with it yet. For a household, it is the same in miniature, one flow on a sheet by the kettle. The field manual in Chapter 9 and the workbook that follows this chapter turn those seeds into a year.

The book has tried to keep its claims to the size of its evidence. The decoupling evidence is strong on the past and silent on what has not been tried. The cross-country studies are correlational. Amsterdam, Wales, New Zealand and Costa Rica each changed what they counted, and each shows a gap between saying and doing that closes slowly. What the book does claim is that any organisation or household can draw its own ring with figures it already holds, and that the drawing changes what it notices. The rest is a decision, and it belongs to the person who has drawn the ring.

Some readers will want to work through what the ring means for a particular organisation with someone who has done it before. Ammanuel Santa Anna works with a small number of leaders one to one, and that work is described at hautelumiere.life. The lineage this book belongs to, with its sibling books and the essays they grew from, is kept at hautelumiere.life.

The forest

The first chapters of this book began with a map that had no coastline and quoted a sentence from Santa Anna's book about a forest that has value only when it is cut down. It is right to end with the same forest, standing.

Picture it as an ecologist would: one particular stand of beech on a slope above a town. In the national accounts it contributes nothing until it is felled. In the doughnut it is part of the ceiling: carbon held, water slowed, soil kept. In Ostrom's terms it is a commons, kept by the people who agree how much wood each household may take. In the language of complexity it is a path that can still be chosen. In the language of

regeneration it is a stock that a good business could thicken. In the language of enough, it is the thing a household notices on a Sunday walk and realises it would not trade for anything the felling would buy.

Nothing in that picture requires the forest to be priced. It requires only that someone, in a firm or at a kitchen table, has learned to see it standing.

A note on method

Keynes's essay is Keynes, J. M. (1930), "Economic Possibilities for our Grandchildren", first published in *The Nation and Athenaeum* and reprinted in *Essays in Persuasion* (1931); it was not re-read in this pass and is described here only in outline.

CHAPTER THIRTEEN

The Workbook



The Workbook

HAUTE LUMIÈRE · THE STANDING FOREST · CHAPTER THIRTEEN

1 · The Two-Ring Ledger · from Chapter 2

Quarterly. One page. About an hour the first time.

A · The floor. For each need the household or organisation exists to meet:

NEED	WHO IT IS FOR	MET / PARTLY / SHORT	EVIDENCE (FIGURE, DATE, NAME)

B · The ceiling. For each of the four or five largest flows across the coastline:

FLOW	THIS QUARTER (UNIT)	SAME QUARTER LAST YEAR	SOURCE

C · The stock. Three things held whose condition this quarter's decisions affect. For each: better, worse or the same, and how you know.

D · The three separations.

1 · Did money and throughput move the same way? If throughput rose faster, why?

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

3 · Which of this quarter's changes were growth, and which development?

E · One move. One short need or one rising flow; the single change; who, and by when.

---

2 · The Objection Register · from Chapter 3

A standing document. Ten minutes to add a line; reviewed quarterly.

#	OBJECTION, IN THE RAISER'S WORDS	RAISED BY, DATE	TYPE	WHAT OUR FIGURES SAY	THE TEST THAT WOULD SETTLE IT	OWNER	REVIEW DATE	STATUS

Types: substitution · decoupling · precision · the floor · growth dependence · the needs of the poorest · new.
Status: *answered · testing · conceded · open*.

Two rules. Nobody closes their own objection. Read the *conceded* lines aloud at the start of each annual plan.

---

3 · The Metabolism Map · from Chapter 4

One sheet, drawn by a small team in about ninety minutes, redrawn yearly without looking at the last.

Three nested shapes: *the living world · the people and places we depend on · us.*

1 · The diet. Five arrows in: energy, materials, water, purchased services, people's time. Quantity, unit, source.

2 · The wastes. Arrows out to the outer circle: emissions, scrap, packaging, water discharged. Quantity, destination.

3 · The output. One arrow to the middle circle.

4 · The body. Five things maintained, each marked *maintained*, *growing* or *being consumed*, with evidence.

5 · The loops. Every balancing loop already visible, in a second colour. Then: *where is a virtuous cycle already alive here?*

6 · The reciprocities. For each input, what is given back to its source. Leave blanks blank.

7 · The coat. Four signs of vitality, each with its record.

8 · One change. Circle the place where a small change would restore the most feedback.

---

4 · The Four-Lens Portrait · from Chapter 5

Two half-days the first time; one half-day each year after.

Guiding question. *How can we be a place where our people thrive, on a site that thrives, while respecting the well-being of the people who supply us and the health of the whole planet?*

LENS	FIVE OR SIX ROWS OF	TYPICAL MEASURES
Our people (local, social)	measure · figure · source	pay against a living benchmark, leave taken, turnover, training, safety, voice

LENS	FIVE OR SIX ROWS OF	TYPICAL MEASURES
Our place (local, ecological)	measure · figure · source	what the land was; sealed surface, water leaving site, planting, waste leaving the gate
Their people (global, social)	one row per supplier	last visited, days to pay, a named wage or safety standard
The planet (global, ecological)	measure · figure · source	three largest materials, energy by source, transport fuel, traceable share

Reading. Mark the most surprising row in each lens. Write one *What would it take to…* question for each. Owner, and a date one quarter away. No targets yet.

---

5 · The Purpose Charter · from Chapter 6

Two pages, drafted in one meeting, reviewed annually.

Page one. We exist to meet these needs (three to five lines) · We will respect these limits (three to five flows, units, direction) · We will not trade one ring for the other (what happens when a decision would).

Page two. Our ways of working (long term, prevention, integration, collaboration, involvement, each with a sign in a board paper) · Our keeper (name, question, report date) · New money first (threshold; date to review the five largest inherited commitments) · The gap, published (where, and by whom; not the chief executive).

Annual review. The keeper reads page one aloud, then names: one decision the charter changed, one it should have changed and did not, one line to rewrite.

---

6 · The Stewardship Contract · from Chapter 7

One page, drafted with the steward.

1 · The service, named. One paragraph, signed by both.

2 · The practice, agreed. Three to five observable practices.

3 · The payment. Fixed, in money; paid within thirty days; not conditional on yield.

4 · The term. Five years, renewable.

5 · The counterfactual question. *What would happen to this land without this agreement?* Answered at the start and at renewal.

6 · The record. One visit a year by someone outside purchasing; one photograph from the same spot.

7 · The reciprocity line. What the steward receives besides money.

---

7 · The Honest Dashboard · from Chapter 8

Annual, two pages; page one quarterly.

Before the first year: for each measure, write its unit, source, denominator and your expected figure. Seal the expectations.

Page one · The portrait.

LENS	MEASURE	UNIT	THIS YEAR	LAST YEAR (SAME BASIS)	SOURCE	BOUNDARY CHANGED?

Page two · The reading. What moved (and what else might explain it) · What disappointed (against the sealed expectation) · What we still cannot measure.

Rules. No composite score · no measure dropped in the year it disappoints · no measure tied to an individual's pay · page two read aloud by someone other than the person it describes.

---

8 · The Year Plan · from Chapter 9

QUARTER	WEEKS	THE JOB	DOCUMENTS	THE SPONSOR'S DECISION
Before	−2 to 0	Decide; find the figures held	Sponsor's paragraph; list of figures	Working group membership
One · Seeing	1–13	Count, without targets	Two-Ring Ledger; Metabolism Map	Continue or stop
Two · Portrait	14–26	All four lenses; open the argument	Portrait; Register; four questions, costed	Which question to try
	27–39	One or two ten-week trials		Adopt, extend or stop

QUARTER	WEEKS	THE JOB	DOCUMENTS	THE SPONSOR'S DECISION
Three · Trying			Trial designs and results; Stewardship draft	
Four · Writing	40–52	Charter, dashboard, board	Purpose Charter; Honest Dashboard	Adopt the charter

Roles: sponsor · ring lead · keeper · recorders · working group (with one sceptic) · steward liaison.

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9 · The Conversation Card · from Chapter 10

Before: who, and what they hold · what they already do well, with its figure · their objection at its strongest · what is probably underneath · what part is true · our own figure that bears on it · the one small step I will ask for · the commitment I can keep.

After: their words, exactly · what I conceded · what they agreed to · what I said I would do, and by when.

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10 · The Kitchen-Table Ring · from Chapter 11

One sheet by the kettle, one month at a time.

1 · Our floor. Under each name: one need met, one need short.

2 · Our flow. One flow, its unit, a row per week.

3 · What already works. Three things, written on the first day.

4 · Enough. *I felt I had enough when…*, one sentence each, whenever it comes.

5 · The last day. At a meal: what surprised us · what would enough look like · one small change for next month.

The ninety-day plan, for a leader

Week 1 · Choose and measure. Choose one flow across your coastline. Name its unit, its source and the person who will record it weekly. Record revenue weekly beside it. Write down what you expect the first figure to be.

Week 2 · Find the living loop. Ask your team one question: where is a virtuous cycle already alive here? Write down every answer. Name one publicly and strengthen it.

Weeks 3 and 4 · Draw the first lens. Complete lens one of the Four-Lens Portrait: five or six measures of whether your own people can thrive, each with its figure and source.

Weeks 5 and 6 · Open the register. Start the Objection Register. Invite every objection to the work so far, in the raiser's own words. Raise one yourself.

Weeks 7 and 8 · Draw the other three lenses. Complete the portrait. Write *not measured* where you must. Mark the most surprising row in each lens and write one *What would it take to…* question for each.

Weeks 9 to 11 · Try one thing. Choose the cheapest of the four questions and run a trial. Record what it cost and what changed, in the portrait's units, and what else might explain the change.

Week 12 · Read it aloud. Present the flow, the portrait, the register and the trial to your board or team in one meeting. Include at least one objection you have conceded, and the figure that most disappointed you.

Week 13 · Decide the next ninety days. Choose the next flow and the next question. If the work is to become a year, turn to the Year Plan.

The ninety-day plan, for a household

Week 1 · Choose and measure. One flow: electricity, gas, food waste, car kilometres, or things bought and not used. Write it down each week on the sheet by the kettle.

Week 2 · Find what already works. Ask everyone at the table: what do we already do well, without trying? Name it and keep it.

Weeks 3 and 4 · The inner ring. Each person names one need of theirs that is met and one that is short. Write them down without discussion.

Weeks 5 to 8 · The question of enough. Once a week, at a meal, ask: when was the last time you felt you had enough? Listen. Do not solve anything.

Weeks 9 to 12 · One change. Choose one small change to the flow you measured, and one to a need that was short. Keep measuring.

Week 13 · Look back. Lay the thirteen weeks side by side. Say what changed, what did not, and what you would like to try next.

Keep every page. The worth of a workbook like this is not in any one sheet. It is in the drawer of sheets, laid side by side after a year, showing an organisation or a household what it has learned to see.

Between your floor and your ceiling

Every economy stands on a coastline, and a firm can learn to read both its floor and its ceiling with the figures already in its drawer.

Luminous Prosperity Inc. takes this work into organisations as a gainshare. The flow is opened from the inside, with the people who already hold what the firm knows. The gain is counted from records the firm already keeps, against a measure both sides sign before anyone knows the answer, and the house is paid as a share of what is found: between thirty and ten per cent of it.

This book reads the ring. Where your own organisation leaks between floor and ceiling, and what closing it would return, is read from your records. That begins with a conversation.

REQUEST A CONVERSATION

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