

THE STANDING FOREST · CHAPTER FOUR

The Organism and Its Habitat

Chapter Four of The Standing Forest

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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

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.

CHAPTER FOUR

The Organism and Its Habitat



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One organism, seen properly

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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

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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

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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?

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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.

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