

THE SECOND BRIEF · CHAPTER FOUR

A Forest in Generative Surplus

Chapter Four of The Second Brief

Ammanuel Santa Anna

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Chapter Four of The Second Brief. The whole book, with every chapter, is at business.hautelumiere.life/library/the-second-brief (DOI https://doi.org/10.5281/zenodo.23989141).

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

In 1997, two botanists at the University of Bonn, Wilhelm Barthlott and Christoph Neinhuis, published a paper on why the leaves of the sacred lotus stay clean in muddy water. The answer, seen under a scanning electron microscope, was a surface of tiny wax-covered bumps. Water does not spread across it; it beads, and as it rolls off it collects the dirt. The leaf does not spend energy cleaning itself. Its structure makes dirt leave with the rain. The paper became one of the founding examples of biomimicry, and it is worth starting with for a reason beyond its fame. It is specific. It is about one organism, one surface, one mechanism, measured. It does not say that nature is wise or that leaves are good. It says that a particular structure produces a particular result at no running cost. That is the ecologist's habit of attention, and it is the habit the living-systems reading of economics asks for.

CHAPTER FOUR

A Forest in Generative Surplus

A leaf that stays clean

In 1997, two botanists at the University of Bonn, Wilhelm Barthlott and Christoph Neinhuis, published a paper on why the leaves of the sacred lotus stay clean in muddy water.[27] The answer, seen under a scanning electron microscope, was a surface of tiny wax-covered bumps. Water does not spread across it; it beads, and as it rolls off it collects the dirt. The leaf does not spend energy cleaning itself. Its structure makes dirt leave with the rain.

The paper became one of the founding examples of biomimicry, and it is worth starting with for a reason beyond its fame. It is specific. It is about one organism, one surface, one mechanism, measured. It does not say that nature is wise or that leaves are good. It says that a particular structure produces a particular result at no running cost. That is the ecologist's habit of attention, and it is the habit the living-systems reading of economics asks for.

The third chapter in this book (chapter 3) opened with a warning from Santa Anna's own workbook: the leap from what nature does to what people should do is not always straightforward. This chapter makes the leap carefully. It reads the regenerative enterprise the way *Ecstatic Economics* and the Luminous 100 read it, as a metabolism rather than a machine, and then turns each part of that reading into a question a leader can answer about a real organisation.

Not balance, surplus

The most common picture of a healthy ecosystem is a balance: inputs equal outputs, populations steady, the whole in equilibrium. Santa Anna's book rejects that picture in a passage that is the centre of this book:

> *A healthy ecosystem is not in equilibrium. It is in generative surplus — continuously producing more life than it consumes.*[28]

The ecology behind the sentence is defensible. A maturing forest accumulates biomass, builds soil, increases the number of niches it supports and stores carbon. It is not static. Over the timescales that matter to a business, it is net productive of the conditions for more life. The book's point is that a firm modelled

on balance will aim for zero harm, the first brief described in the second chapter (chapter 2), while a firm modelled on surplus will aim for more life than it uses, the second.

The book also refuses to make the surplus an excuse for losing money:

> *Financial sustainability is necessary (you can't regenerate anything if you go bankrupt), but it is a means, not an end.*[29]

That is a careful position, and it is the one a leader needs. The surplus is not charity added to a business. It is the business, conducted so that the systems it depends on are in better condition at the end of the year than at the start, and paid for by the same operations that produce it.

Conveyor belt and circulation

Most of the tools managers learn were drawn as lines. Michael Porter's value chain, the house's own paper on it (hautelumiere.life) notes, runs left to right: inbound logistics, operations, outbound logistics, marketing, service, with support activities underneath. It is a superb instrument for finding cost and margin. It is also, structurally, a conveyor belt. Materials enter on the left and leave on the right as product, and whatever falls off the belt is outside the drawing.

Santa Anna's specification for the house's Luminous Value Chain Ecology begins by changing the picture:

> *it replaces the metaphor of the conveyor belt with the metaphor of the circulatory system.*[30]

In a circulation nothing moves in only one direction. Blood carries oxygen out and carbon dioxide back. The specification extends that to an organisation: customers return feedback and legitimacy as well as revenue; suppliers return reliability and invention when they are paid fairly and early; employees return skill when they are developed. And it names the measure that matters: "The system is not optimizing for a single output; it is maintaining the conditions for life."[30]

The same specification contains a sentence that every operations director should read twice:

> *A circulatory system can be technically patent — all the pipes open — while still being unhealthy.*[30]

A supply chain can be fully functioning, every order filled, every invoice paid, and still be depleting the farms, the workers or the towns it runs through. The conveyor-belt drawing cannot see that, because it measures whether things are moving, not what condition the things moving through it are in.

John Fullerton's seventh principle of regenerative capitalism, *Robust Circulatory Flow*, reaches the same image from economics: "economic health depend[s] on robust circulatory flows of money, information, resources, and goods and services to support exchange, flush toxins, and nourish every cell at every level of

our human networks."[31] Two writers, working separately, chose the body's circulation as the model. That convergence is not proof, but it is a sign that the image carries something the line does not.

From waste to signal

The Luminous 100, Santa Anna's upgrade of the hundred frameworks consultancies teach, applies the same move to Lean, the discipline of removing waste that grew out of the Toyota Production System. Lean's first principle asks of every step whether it adds value for the customer. The upgrade, entry 67, changes the question:

> *the question isn't just "does this step add value?" but "does this step add life*[32]

and completes it: "to the customer, the worker, the community, and the larger living systems this organization participates in?"[32]

The upgrade then does something more practical than it first appears. It treats the seven classic wastes of Lean (overproduction, waiting, transport, over-processing, inventory, motion and defects) not only as deficits to cut but as signals to read. Overproduction, in its reading, is a sign that an organisation has not learned what the system around it actually needs; waiting is a sign of a blockage where energy is pooling. For a leader, the consequence is a change in the first question asked when waste is found. Not only *how do we remove this?* but *what is this telling us about where the circulation is blocked?*

That is the living-systems reading at its most useful: it does not replace the existing instrument. It keeps Lean's discipline and widens what the discipline is for.

Five principles, five questions

The book closes its passage on generative surplus with a list. Human economic structures, it says, can emulate the forest:

> *not by copying nature literally, but by learning from its design principles: circularity, diversity, redundancy, reciprocity, and the distribution of intelligence to every node in the network.*[28]

Each of the five can be turned into a question about a real organisation. This is where the finer points of implementation live.

Circularity: where does each output go next? Not *is it recycled*, which is the narrowest meaning, but *is someone using it*. The test is the one the lotus passes: a structure that sends what is not needed somewhere useful without extra effort. In a firm, that is a by-product with a buyer, a returned product with a refur-

bishment line, a used pallet with a supplier who wants it back. The first question is simply to list every output that leaves, and against each, the name of whoever uses it next. Blanks are the agenda.

Diversity: how many ways can this fail? An ecosystem with many species survives a disease that wipes out one. An organisation with one supplier, one customer segment, one product or one skilled person on whom everything depends is a monoculture. The finer point is that diversity costs something in efficiency, which is why Fullerton's eighth principle asks for a balance between "efficiency and resilience" rather than the maximum of either.[31] A leader should know, for each critical input, how many independent sources exist.

Redundancy: what spare capacity do we keep on purpose? Biology is full of it: two kidneys, many paths through a forest's fungal networks. Management has spent forty years removing it in the name of lean operation. The living-systems reading asks for redundancy chosen, not accidental: a small stock of a critical part, a second person trained in a critical skill, an unused afternoon in a busy team's week. The test is whether the organisation could absorb the loss of any one element for a month.

Reciprocity: what does each party get back? In the circulatory reading, a supplier squeezed on price and paid late is a vein being narrowed. The finer point is that reciprocity is measured from the other side. Ask a supplier, an employee or a neighbouring business what the relationship returns to them, and write down their answer, not yours.

Distributed intelligence: who can act on what they see? A forest has no headquarters. Every root responds to the soil it is in. Organisations that require every decision to travel to the centre are slow to notice what the edges already know. The practical question is how far down the organisation someone can stop a process, change a supplier or redirect a waste stream without asking. The companion book on the commons (*The Pasture Was Never Empty*) takes this further, through Elinor Ostrom's evidence that shared resources are often best governed by the people closest to them.

What the reading asks of a leader

Santa Anna's book states the purpose that sits behind all five questions:

> *a business exists to increase the vitality of the systems it participates in*[29]

It is easy to read that as a slogan. Read as a specification, it is demanding. It means that a leader has to know which systems the business participates in, what their condition is, and whether the business is making that condition better. Most leaders know their own balance sheet thoroughly and the condition of the systems they draw on hardly at all.

The book describes what unites the regenerative firms it surveys, from soil-building farms to energy-positive buildings, as "a shared metabolic orientation", and it defines the term in one line: "they are organized to

generate vitality rather than *consume* it."[33] A metabolism is something with inputs, transformations and outputs, all of which can be observed. That is why the tool below is a map rather than a mission statement. A team can draw it, look at it and disagree about it, which is where the useful work starts.

There is a practical consequence for how a leader spends a week. A conveyor-belt organisation is managed by watching throughput: orders, units, revenue, utilisation. A metabolism is managed by watching condition as well: the health of the suppliers, the skill of the staff, the trust of the neighbourhood, the state of the stocks the business draws on. The first set of measures is usually on the dashboard already. The second is usually nowhere, or in an annual report written by someone else. Moving even one condition measure onto the weekly dashboard changes what a management meeting talks about, and that is often the first visible sign that the reading has been taken seriously.

The limits of the reading should be stated as plainly as its strengths. A firm is not an organism. It can be split, merged, sold and closed in ways no forest can. The metaphor is a way of asking better questions, and the questions are what matter. Where the metaphor and the evidence part company, the evidence wins, and the third chapter's five critiques still apply. The companion book on complexity economics (*The Economy That Keeps Becoming*) offers the most rigorous version of the living-systems view, in W. Brian Arthur's account of the economy as an evolving system, and it is the right next reading for anyone who wants the metaphor held to a stricter standard.

A metabolism has seasons

There is one feature of living systems that the five questions do not ask about directly, and a leader who takes the reading seriously meets it within a year. Living things are not equally productive at every moment. A forest that is in generative surplus over a century is not in surplus every month. It has a season of growth and a season of rest, years of mast and years of scarcity, a fire every few decades that clears the understorey and lets the next generation in. The surplus is a property of the long run, held together by cycles that, taken one at a time, look like loss.

Organisations have seasons too, and most of their management instruments are built to deny it. The quarterly report treats every quarter as comparable to the last. The annual budget assumes the year is the natural unit of every decision. A regenerative commitment judged on those clocks will look like a cost in the quarter it is made and like a saving only in a year nobody is measuring. Soil takes years to rebuild. A second baker takes a season to train. A supplier who has been paid early for a year begins, in the second year, to bring the ideas a squeezed supplier keeps to itself.

The practical consequence is a fourth column on the leader's dashboard, beside throughput and condition: *time to show*. For every regenerative change, write down when its effect could first be visible and when it could be judged fairly. A change to packaging may show in a month. A change to how a supplier is paid may take two years. A change to the soil on a supplier's farms may take five. Writing the time down before

the change is made does two things. It protects the change from being judged too early, which is how most such changes die. And it protects the organisation from the opposite error, a change kept alive for years on hope because nobody said when it ought to have worked.

The second consequence is about rest. The book's line, quoted above, that financial sustainability is a means and not an end, has a corollary inside the organisation. A team pushed at full capacity every month is a field cropped every season with nothing returned to it. It may produce well for a while. It is drawing down a stock, the energy and judgement of the people in it, that the conveyor-belt dashboard does not show. The redundancy question asks whether the organisation could absorb the loss of one person for a month. The seasonal question asks whether anyone in it has had a month that was not at full stretch in the last year. The two are connected. An organisation without slack has no room to recover, and a team that never recovers eventually stops noticing what the edges of the map are telling it.

The third consequence is about disturbance. Ecologists have long observed that some disturbance keeps a system diverse: a meadow that is never grazed or cut fills with a few dominant plants, and a meadow grazed lightly holds many more. Organisations know the same pattern under other names: the product line that is never pruned, the committee that outlives its purpose, the supplier kept for twenty years because nobody asked whether it was still the right one. A regenerative leader is not one who protects everything. It is one who knows which disturbances renew the system and which only damage it, and who makes the first kind on purpose, at a time of the organisation's choosing, rather than waiting for a crisis to make them all at once.

None of this changes the five questions. It changes how often they are asked and how patiently the answers are read. The Metabolism Map at the end of this chapter is drawn twice, six months apart, for exactly this reason: a single drawing shows a structure, and two drawings begin to show a season.

The same questions at home

The reading is not only for firms. A household is a metabolism too, and the five questions work at its scale with almost no translation, which is a useful check on whether they mean anything.

Circularity, at home, is the question of where things go when they leave: the clothes that no longer fit, the food that is not eaten, the furniture that is replaced. Most households can name the bin and not much else. The finer point is that the most valuable loop is usually the first one, use for longer, and the least valuable is the bin marked for recycling. A household that mends one thing a month has done more for its material circulation than one that sorts its waste perfectly and replaces everything early.

Diversity, at home, is the number of ways the household earns, eats and gets help. A family with one income, one route to work and one person who knows how the finances work is a monoculture in exactly the

sense a farm can be. Nothing here argues for complication. It argues for knowing where the single points of failure are.

Redundancy is the oldest household wisdom there is: the larder, the savings held for a bad month, the neighbour with a spare key. It is also the first thing removed when money is tight, which is the moment it is most needed. The third chapter in this book (chapter 3) described how circular projects are cut in bad years; household reserves follow the same pattern for the same reason.

Reciprocity, at home, is the question of what the people and places a household depends on get back from it: the local shop, the school, the friend who looks after the children on Thursdays. It is measured, as in the firm, from their side.

Distributed intelligence is whether everyone in the household can act on what they notice. A teenager who sees the heating left on in an empty room and is expected to turn it off is a node with intelligence. One who is expected to tell someone else is not.

None of this needs a new budget. It needs an afternoon with the map below and the willingness to write down the blanks.

The leaf, again

Barthlott and Neinhuis did not set out to design a self-cleaning paint, though one followed. They set out to understand a leaf. The reading in this chapter asks a leader to do something similar with an organisation: to look at it closely enough to see where its structure sends things, where it is fragile, where it keeps a reserve, what it returns and who can act. The design comes after the looking.

The lotus does not try to be clean. It is built so that the rain does the work.

The Tool: The Metabolism Map

A one-sheet map, drawn by a team of three to six people in about two hours, on a large sheet of paper or a whiteboard. It replaces the conveyor belt with a circulation and asks the five questions of it. Draw it once now and once in six months.

Step 1 · The centre (15 minutes). In the middle of the sheet write the organisation, team or household, and one sentence: *the systems we depend on and do not own are* __, _, ___. Choose three: for example, the farms that supply us, the town our staff live in, the river we discharge to, the trade that trains our people.

Step 2 · What comes in (20 minutes). Around the left side, list every significant input: materials, energy, water, money, people's time and skill, information, goodwill. For each, write where it comes from by name.

Step 3 · What goes out (20 minutes). Around the right side, list every output: products, services, wages, taxes, by-products, waste, emissions, information, reputation. For each, write where it goes next by name. Leave a blank where you do not know.

Step 4 · What comes back (20 minutes). Draw arrows from right to left for every flow that returns: repeat custom, feedback, returned products, materials a supplier takes back, people who come back to work, referrals. Count them. A map with few return arrows is a conveyor belt.

Step 5 · The five questions (40 minutes). Answer each in writing on the sheet.

PRINCIPLE	QUESTION	ANSWER FOR THIS ORGANISATION	ONE CHANGE WORTH TRYING
Circularity	For every output, who uses it next? How many blanks in step 3?		
Diversity	For each critical input, how many independent sources? Where is there only one?		
Redundancy	Could we absorb the loss of any one supplier, person or system for a month? Which one could we not?		
Reciprocity	For our three largest relationships, what do *they* say the relationship returns to them? (Ask, then write their answer.)		
Distributed intelligence	Who below the leadership can stop a process, change a supplier or redirect a waste stream without asking?		

Step 6 · Patent but unhealthy (5 minutes). Mark with a circle any flow that is working (on time, paid, delivered) while depleting the system it runs through. These are the places the conveyor belt could not see.

Step 7 · One change (5 minutes). Choose one change from the last column, name its owner and its date. Only one.

How to read it in six months. Compare the number of blanks in step 3, the number of return arrows in step 4, and the circles in step 6. Fewer blanks, more arrows and fewer circles mean the metabolism is moving towards surplus. If the numbers have not moved, the change chosen in step 7 was the wrong one, or was never made, and the map will usually show which.

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