Feeding is the primary principle that organizes life on Earth. As food becomes scarce, unreliable, or super-charged, it disrupts the basic organization of life, from the cellular level to human economies to the planetary food web. In Superstruct, food gets more attention than any other topic—with good reason. Superstructing our food system will be at the core of our next big evolutionary leap in the organization of living systems.

**FOOD AS A GAME**

The Appleseed ecology starts from a game: As founder Josh says, “Growing stuff is inherently a long-term proposition. Makes it hard to rapidly iterate on new ideas, and for too many folks, especially urban gardeners, the laboratory is also the pantry they depend upon. The Appleseed game aggregates the real-world data of participating gardeners/farmers/agriculturalists and uses it as the basis for simfarms.”

**PRIMITIVE MEETS URBAN COMMONS**

When the status quo starts to fall apart, people often retreat to the ideals of previous generations. So it is with many of our instincts for food: self-sufficiency, victory gardens, farmer’s markets. But real evolutionary movement always combines the best of the past with surprising new twists. Appleseed is certainly a twist on self-sufficient farming, but many other superstructures also rethink cultivation in the urban context, not only suggesting things like rooftop and vertical gardening, but also leveraging the new urban infrastructure of communication and commons to make it work. In fact, the Appleseed ecology is highly cosmopolitan. Will this cosmopolitan agriculture replace industrial agriculture in the next decade or even by 2050? Probably not. But it may be crucial to managing famine and starvation—and it may ultimately give us new models for managing the planetary food web.

**OPEN-SOURCE FOOD**

And then there are the Share Your Seeds and Seeds ATM superstructures. Their founder, JorgeGuberte says: “Food shouldn’t cost anything. Seeds also shouldn’t cost anything. That’s why this superstructure [has] been created: to build a Seed ATM network, so anyone who needs seeds can easily go to an ATM and get free seeds.” The idea of open-source food, played by a young man from São Paulo, Brazil, is not so easily dismissed, considering that Brazil has led a growing contingent of nations in the Global South to embrace open-source computing, then open-source pharmaceuticals, and increasingly open-source strategies for economic development. Open-source food may be the ultimate economic disruption.
This ecology map is a network diagram of superstructures that are linked by membership. Start from APPLESEED and its core ecology (highlighted in blue), and work out to the surrounding superstructures that are indirectly related. Size corresponds to the density of interconnection to all superstructures.

APPLESEED

FOOD AS DISRUPTIVE ECONOMY

JOSH | HOMESTEAD-IN-A-BOX & APPLESEED
josh is an IT consultant living in the Chicago area. He says that the loss of a family member due to an untreatable disease has made him who he is today.

JOSH’S | stories
• Caregiving in the 21st Century
• Two Kinds of Exiles

Jorgeguberte | SHARE YOUR SEEDS
jorgeguberte is creative director of a sustainable ad agency based in São Paulo. What matters most to him is doing everything he does with passion.

Jorgeguberte’s | stories
• Dude, Where’s My Water?
• Lil’ Devils Ruined Our Garden

Platonicjensen | THE EXCHANGE
platonicjensen is actively unemployed in St. Louis. His current income sources include home grown vegetables and architectural salvage.

Platonicjensen’s | stories
• Community Garden Defense Committee
• Guerilla Gardening

Platonicjensen’s | THE EXCHANGE
platonicjensen is actively unemployed in St. Louis. His current income sources include home grown vegetables and architectural salvage.

Platonicjensen’s | stories
• Community Garden Defense Committee
• Guerilla Gardening

Geekofriendly | CRADLE2CRADLE
geekofriendly works in Abu Dhabi as an urban planner who was convinced by the book Cradle to Cradle that sustainable design is the only way for humanity to survive.

Geekofriendly’s | stories
• Eco-cities - First Masdar, then New York

Platonicjensen’s | THE EXCHANGE
platonicjensen is actively unemployed in St. Louis. His current income sources include home grown vegetables and architectural salvage.

Platonicjensen’s | stories
• Community Garden Defense Committee
• Guerilla Gardening

Geekofriendly’s | stories
• Eco-cities - First Masdar, then New York
Many economists, energy experts, and environmentalists see the coming decade as a transition to a carbon economy in which the value of everything gets reframed around the ability to reduce the carbon impact on the atmosphere. Some envision a marketplace built around carbon credits, with new wealth going to nations that can help carbon overproducers reduce their carbon debt. Others see a more radical restructuring of the foundations of currency to reflect the value of the environment in general. In other words, healthy ecologies replace commodities as the basis of the currency system.

**THE CURRENCY IS THE MESSAGE**
The Natural Currency ecology emerges from a very small superstructure with a focused goal: to link currencies to renewable energy capacity instead of gold, GDP, or other measures of national value. It finds affinities with other superstructures that use broader measures of ecological health as the basis for valuing currency, as well as the Community Currency proposal, to make ideas rather than material goods the basis of the economy. “Sweaters made in Indonesia are paid for in scholarships.” Underlying all these currency ideas is a new level knowledge about the environment and the ability to track that knowledge. Currency thus becomes a medium for communicating as much as a basis for trade.

**THE VALUE OF SOCIABILITY**
Cutting across all of these superstructures is an explicit or implicit value placed on sociability—on the capacity to extend our connectedness through the use of tools and protocols to create new kinds of value that sustain humans and the environment.

**TRANSLOCAL VALUE**
Many advocates for alternative currencies focus on local currencies as a way to preserve and build local value. But the Natural Currency ecology links the local to the translocal—whether it’s supporting national currencies based on aggregate values of local ecological health or redefining the meaning of family. For example, the Extended Family superstructure seeks to create new Family Groups: sets of at least three transnational families that “meet” once a month to share meals or ideas. Translocal even applies to generations:rorosoro, founder of Trans-Generational, says, “By addressing the subtleties and nuances that surround, perhaps define, each generation’s use of terminology, we hope to build channels of transparent communication between like-minded, if not like-aged, individuals.”

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Natural Currency

> Seeking to create a parallel system of international currencies that ties the relative value of currencies to the renewable energy production of each nation, Natural Currency challenges members to develop open source protocols for distributed documentation of renewable energy production capacity at the local level. [superstruct 293]

Valuing the Environment

> Tying the value of national currencies to the state of their ecologies, this superstructure proposes an alternative money structure that leverages current knowledge about how to measure the value of ecological resources. [superstruct 322]

Mobilizing Airilions

> Arguing that humans are the value in any system, this superstructure proposes Surge Waves, in which (billions of) members send one dollar or one pound or other unit of currency to six different individuals, organizations, or governments, along with brief statements of appreciation of their value, building a community of confidence. [superstruct 357]

Establishing the Floodplain Commons

> Seeking to appropriate the 500-year floodplains of all the world’s waters for public use, this superstructure calls on agricultural colleges to develop packages of small-scale integrated aquaculture/agriculture programs specifically designed for floodplain environments and to distribute them through technical extension programs to refugee groups who are given permits for production in the riparian zones. [superstruct 512]
This ecology map is a network diagram of superstructures that are linked by membership. Start from Natural Currency and its core ecology (highlighted in blue), and work out to the surrounding superstructures that are indirectly related. Size corresponds to the density of interconnection to all superstructures.

Natural Currency

Loving flora

Quantum governance

What you study grows

Community Currency

Outposts of one

Meme machine

Celebrate a year of jubilee

Oh, no

Extended family

Trans-generational

Everyday heroes

Bright green

Food webbies

OtterInwater

Establishing the Floodplains Commons

OtterInwater is a restoration ecologist, working primarily in the Catskills, the watersheds that feed the New York City water supply reservoirs. He also designs, builds, and sells furniture.

Xauriel

Valuing the Environment

Xauriel is an independent media producer and co-operator of an independent trading post. Says Xauriel: “The Great Dollar Crash tied me intensively to the local community and to my growing family. At the same time, it motivated me to begin sharing my views and experiences with the world.”

Xauriel’s stories
- Gaming the System
- Saskatoon Shines
- Fed Cracks Down on Great Plains Worker Credit

PlaNetWeaver

Mobilizing Airilions

PlaNetWeaver is an orchestrator of thresholds (births, deaths, all manner of life moments) who quotes the likes of William Irwin Thompson and Hildegaard von Bingen. PlaNetWeaver’s burning question is “What would it take to realize humanity’s full potential?”

PlaNetWeaver’s stories
- Of Crows and Ghost Dances
- House Guests
- Airilions Lything, November 1st, 2010
- Moral Matrix Vote of Confidence

Pamela Cash

Community Currency

Pamela Cash lives in Seoul, South Korea, where she works as a sports therapist and owner of a small indie publications bookstore. In her early 30s, she took a solo trip around the world and realized life could be full of a lot more adventure.

Pamela Cash’s stories
- Visiting Korea — my old playground, now a Red’s danger zone
- Spam, Kimchi, Borders, Grandmothers, and Bad Nicknames

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The Internet has defined a basic model for an emergent infrastructure that leverages openness, peer-to-peer structures, and social networks to provide a commons on top of which anyone can create new value. Over the next decades, we may well expect to see this same model applied to a variety of other infrastructures but most specifically to the global energy infrastructure. The result may be rapidly evolving “soft structures” that provide a foundation for society’s basic physical needs.

### THE QUESTION OF SCALE

The Community Works Program sets the tone for an ecology that is specifically concerned not only with issues of carbon, energy, and infrastructure—but also of scale. Says founder Brian Petro: “We need to create self-sustaining, smaller groups to support collapsing larger infrastructure. As we develop ideas to sustain a community, we can expand and move those ideas into sustaining a state, then a nation, then the world.” Dark Optimism, founder of Common-Purpose Engine, adds: “Large-scale problems do not require large-scale solutions. They require small-scale solutions within a large-scale framework.”

### SOCIAL ACTION SOFT INFRASTRUCTURE

EmergentNRG hopes to provide just such a framework, not with technological solutions as much as with patterns of human behaviors and actions that add up to energy-generating rather than energy-consuming structures. Founder Fantong2019 encourages members to: “Generate simple rules that we can follow that will promote and foster these actions and behaviors.” The result is a kind of self-organizing “soft” infrastructure of sustainability.

### A NOMADIC MARKUP LANGUAGE

While most of the superstructures in this ecology bank on stable local communities to provide the basic units of a global infrastructure, the landscape of 2019—in Superstruct and in the real world—is likely to have much higher rates of mobility as climate refugees and economically displaced persons grow in number. The Distributed Educational Network tries to address the impacts of such global mobility on public education by creating a global peer-to-peer learning network. And one of the most popular superstructures was Nomadic Markup Language: it engaged the community in thinking about ways to use the old idea of warcarking to create “nocharking” signals for informal access to food, shelter, and services. A form of nocharking could, in fact, prove to be essential for emergent self-organizing infrastructures.
This ecology map is a network diagram of superstructures that are linked by membership. Start from Community Works and its core ecology (highlighted in blue), and work out to the surrounding superstructures that are indirectly related. Size corresponds to the density of interconnection to all superstructures.

**BRIAN PETRO | COMMUNITY WORKS PROGRAM**
Brian Petro works at Ohio State University, but moonlighted as a bartender during the economic downturn and eventually started his own brewery. He lives in a collective outside of the city with minimal dependence on the grid.

**J.C. SACKETT | DISTRIBUTED EDUCATIONAL NETWORK (DEN)**
J.c.sackett is a freelance software engineer who works from home or from a coworking group down the road. His work identity was shaped by the realization that “working in a company that was continuing to believe the technology of the last century was adequate was a non-starter.”

**FANTONG2019 | EMERGENTNRG**
Fantong2019 lives with his wife and two daughters, who were adopted from China. He works as an engineer for an energy efficiency non-profit organization. He says that what really counts to him is “making the world a harmonious place where my daughters can live and flourish.”

**DARKOPTIMISM | COMMON-PURPOSE ENGINE**
With a "portfolio" career, DarkOptimism spends about four days a week working on communal permaculture farms or teaching local children; he spends evenings online working as a climates energy analyst to institutions and individuals around the world. He also operates as a local trader. What matters to him most: “Seeing the human adventure continue.”

**COMMUNITY WORKS**
Building Emergent Local and Global Infrastructures

**POLISH MAFIA EXTRACTING BANNED COAL**

**TRADEABLE ENERGY QUOTAS (ENERGY RATIONING) IN THE UNITED KINGDOM**

**CLIMATE CHANGE HOLDOUTS MIGHT FACE PROSECUTION**
C. K. Prahalad has argued that today's developing nations operate in an “innovation sandbox” due to a climate of scarcity. As a result, they are more likely to find solutions to the problems that confront the world as a whole over the next decade—from new energy solutions to new ways of manufacturing. Into this innovation sandbox will come a host of new fabbing devices for manufacturing on very small scales, including nanoscales. The result may be a very different way of making our material world.

### THE NEW LOCAL ECONOMY
The Open Fab Initiative is the starting node for a densely interconnected ecology of superstructures that span the major ideas and innovations in Superstruct. Like its close affiliates, Screaming 3D Bootstrappers and Mobifab, the Open Fab Initiative explicitly links new very small-scale fabbing tools and practices to solving the problems of local distressed communities—creating new local material and economic realities.

### OPEN SOURCE AS A LOCAL DEVELOPMENT STRATEGY
Mirroring some of the patterns emerging from today’s Global South, the superstructures in this ecology explicitly embrace open-source strategies as a means not only to provide for pressing local needs, but also to redistribute wealth, knowledge, and power. Open Source Scientists, for example, seeks to develop science and engineering methods that redistribute knowledge more equitably. In this ecology, it’s not surprising to find that commons-based food solutions like Urban Food Producers’ Coop, Share Your Seeds, and ARK:NSA show up as well.

### FLUIDITY OF FORM
It’s also not surprising to find Reconstruct in the core ecology here. This superstructure—which reconstructed the entire Superstruct interface—points to a key feature of this emerging ecology: form is less stable than relationship. Overnight, the apparent forms of goods and services can shift in the world of open-source fabbing. This is innovation on an extreme scale.

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**Open Fab Initiative** > Using personal fabbing devices, the Open Fab Initiative aims to create Regional Fab Task Forces (RFTFs) that function as teams of dedicated individuals who work with their struggling local economies to help them switch to a system of open source fabbing. [superstruct 445]

**Screaming 3D Bootstrappers** > Leveraging three-dimensionally immersive product design, collaboration and project management software tools, this superstructure establishes three function teams—three-dimensionally immersive product design, collaboration and project management software tools—to connect remote experts with local leaders facing extreme challenges in distressed areas. [superstruct 012]

**Mobifab** > Deploying fabs and ex-military generators running on nanosolar panels and biofuels—all in the back of old, retrofitted Landrovers and Humvees—Mobifab seeks to negotiate with local authorities in remote and depressed areas to create goods in exchange for feedstocks for fabbing. [superstruct 100]

**Augmented University** > Taking advantage of virtual environments and other online learning tools, Augmented University seeks to provide new approaches to education aimed at the needs of people living in a new reality—whether that means self-sufficient urban homesteading or the virtual worlds where you can interact directly with mathematical concepts. [superstruct 468]

**Open Source Scientists** > Addressing the basic challenges of open-source systems, Open Source Scientists seeks to promote open-source methodologies and change how technology and knowledge are distributed, making them more equitable. [superstruct 015]

**Bright Green** > An education-oriented meta-structure, Bright Green seeks to band together all the superstructures that embrace high- and low-tech hacks for modern problems—seeking innovations that are environmentally sensitive but technologically sophisticated. [superstruct 442]

**Assembly 12** > Responding to the threat of pandemic and quarantine, Assembly 12 calls on local businesses and institutions, as well as the community at large, to develop new guidelines for assembling in public and semi-public spaces to assure continued face-to-face interaction. [superstruct 321]

**Reconstruct** > Demonstrating the fluidity of a massively open-source environment, Reconstruct used the open Superstruct database to completely reconstruct the game interface and create an alternate gamespace, linked to Superstruct. [superstruct 466]
This ecology map is a network diagram of superstructures that are linked by membership. Start from THE OPEN FAB INITIATIVE and its core ecology (highlighted in blue), and work out to the surrounding superstructures that are indirectly related. Size corresponds to the density of interconnection to all superstructures.

CAPTAIN HAZARD | OPEN FAB INITIATIVE
Captain Hazard, who has been organizing a research lab dedicated to developing airships for the past 10 years, wants to “understand and fix social infrastructures.”

CSVEN | SCREAMING 3D BOOTSTRAPPERS
CSVEN is a transreality designer working out of his home workshop. He has just completed a trans-atlantic ocean voyage and is moving his father into this home.

CSVEN’S | stories
• When 3D Spam Got Old
• Snapshots from the New Trans-Atlantic Cruise
• VIDEO: Military Airship caught on Turtlcam

FREELANCE GENERALIST | MOBIFAB
Freelance Generalist is a memeticist—helping the tech fit people rather than the other way around.

OTHER SECOND-ORDER LINKS IN THE ECOLOGY
- Analog Superthreat
- Warning System
- Appleseed
- Blogstruct
- Everyday Heroes
- The Exchange
- Food Webbies
- Grow Community Gardens
- Gypsy Farms
- IRC Chat
- Jobstruct
- Mission Makers
- Open Source Teachers
- P2P Badges
- The Potlatch Economy
- Public Health
- Raving Lunatics
- Rooftop Cultivation
- Association
- Seeds ATM
- Seeing the Forest
- Sketchbook
- Slow News
- Superstruct Classifieds
- Super Infra-Structures
- Superstruct Database
- Superstruct Love Shrine
- The Unplugged
- Verification Rating System
- Water Law
- Well Wishes for Jarrett Wold
- Zombie Squad
For the past 30 years, the art and science of governance has languished as several trends have intersected to diminish the role of governments around the world. Rather than innovating government, countries have focused on innovating markets and the civil sector. Yet as this year's Perspective on Post-Newtonian Governance suggests, the realm of government is ripe for innovation. And our scientific worldview—specifically the principles of quantum mechanics—may provide an overarching framework for that innovation.

**THE IDEAS OF GOVERNANCE**

The Quantum Governance superstructure sparks an ecology rich in superstructures concerned with ideas, stories, and knowledge. This is not surprising: in a quantum world, point of view is everything, and many of the superstructures in this ecology— from Meme Machine to Foundation of Hope, and even Open Source Scientists—are designed to help citizens makes sense of the world. Even Quantum Governance, with its Quantum Manifesto, is not so much an action superstructure as an invitation to ideate.

**ONE-TO-ONE STRUCTURES OF TRUST**

One thing that is clear from both the Manifesto and the superstructures in this ecology is that relationships count. Says QG founder Lord Samwise: “The success of quantum society relies heavily on developing relational interdependence—a reality that can only be achieved if people’s faith in each other can be restored and the gulf of paranoia overcome.” Trustnet tries to do just this, one interaction at a time, with digital tags that record the “trust” result of each interaction, aggregating and propagating trust profiles through the network.

**PARALLEL UNIVERSES**

Meanwhile within this ecology, there are parallel universes of action. A host of superstructures propose solutions to securing food and wealth, which is a core function of governments. Perhaps most intriguing is a small superstructure called Core & SuperCore SEHIs, which reveals the existence of a parallel set of structures for SEHIs who have been defined as “core” or “supercore” based on definitions that other SEHIs have created. And then there are Bastards for a Better Tomorrow, which asks people to consider an alternate moral universe, and Zombie Squad, which uses movie metaphors to mobilize action.

**THE CORE ECOLOGY**

- **Quantum Governance**
  - Embracing a post-Newtonian, quantum worldview, the Quantum Governance superstructure seeks to generate “radical, worldchanging ideas” within that paradigm to allow humanity to survive the superthreats and emerge stronger than before.
  - [superstruct 318]

- **Trustnet**
  - Describing themselves as both a strategy and an organization, members have digital tags that monitor interactions with other members, setting a “trust” or “distrust” flag for each interaction; because it's a network, it builds a verifiable means of trusting strangers.
  - [superstruct 145]

- **Meme Machine**
  - Using a variety of online and offline media, this meta-superstructure seeks to support existing superstructures by reducing their key ideas to “catchy soundbites” and propagating them virally.
  - [superstruct 330]

- **The Potlatch Economy**
  - Building on the traditions of Northwest Indian tribes, the Potlatch Economy provides a structure for sharing abundance with those who are facing scarcity—in effect, giving away goods.
  - [superstruct 383]

- **The Exchange**
  - Leveraging ideas of social accounting, The Exchange is a social networking application in which people request favors or offer favors in exchange for Karma, a type of reputation score. Not a specific gift economy, it’s an application that helps people build social network gift economies.
  - [superstruct 125]

- **Bright Green**
  - An education-oriented metastructure, Bright Green seeks to band together all the superstructures that embrace high- and low-tech hacks for modern problems—looking for innovations that are environmentally sensitive but technologically sophisticated.
  - [superstruct 442]

- **Zombie Squad**
  - A real and well-established community of survivalists with a sense of humor and an appreciation for horror movies, the Zombie Squad uses the metaphor of a horror movie for disaster preparation.
  - [superstruct 206]

- **Bastards for a Better Tomorrow**
  - Recruiting cynics, realists, idealists, and “generally nice people,” this superstructure encourages its members to consider unconventional solutions for superthreats based on effectiveness, not humanity.
  - [superstruct 271]

- **Facilitators**
  - Another meta-superstructure, Facilitators wants to facilitate connections among superstructures, asking its members to serve as matchmakers. Note: the vast Facilitator network is not included in this ecology map.
  - [superstruct 129]
This ecology map is a network diagram of superstructures that are linked by membership. Start from Quantum Governance and its core ecology (highlighted in blue), and work out to the surrounding superstructures that are indirectly related. Size corresponds to the density of interconnection to all superstructures.

**Quantum Governance**

Lord Samwise is an Intelligence Analyst in the United Kingdom, working at the government’s new Strategic Crisis Hub.

**Quantum Manifesto**

Implemented in Bristol, U.K.

**Lord Samwise’s stories**

- Quantum Manifesto

**Antisocial Hermit**

Antisocial Hermit is a game designer and programmer who is passionate about freedom of expression and the survival of humanity.

**Trustnet**

**Platonic Jensen**

Facilitators Zombie Squad

Platonic Jensen is actively unemployed in St. Louis, with income from home-grown vegetables and architectural salvage.

**Kludge**

Meme Machine

Kludge is a freelance idea man who lives with a rotating cast of about 30 family and friends at any given time. What matters most: science.

**Professor Bedlam**

Bastards for a Better Tomorrow

Professor Bedlam teaches philosophy, English, and history at an inner-city high school. In pursuit of truth, he says, he “went sane.”

**Empiricus**

The Potlatch Economy

Empiricus designs information from his home office where he lives with “strays.” His unique strengths: multi-modal human-computer interface, permaculture, political discourse.

**RTGarden**

Bright Green

Rtgarden is a conceptual artist, educator, and bright green evangelist.

**Public Health**

I voted 2008!

**21st century wonder tales**

New World Report

Cartoonix

Outposts of one

The Lunatics!

The Unplugged

Animal Speakers

Everyday Heroes

Nomadic Markup Language

P2P badges

Foundation of Hope

Open Source Scientists

Gaming the System

Core & Supercore SEHi’s

Beyond Capitalism

Share Your Seeds

Seeds ATM

The Exchange

Ark: NSA

The Venn Motherstruct

Water Law

Public Health

Lord Samwise: Quantum Governance

Quantum Manifesto implemented in Bristol, U.K.

Antisocial Hermit: Trustnet

Antisocial Hermit is a game designer and programmer who is passionate about freedom of expression and the survival of humanity.

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Rtgarden is a conceptual artist, educator, and bright green evangelist.