

DOUGHNUT ECONOMICS



7 Ways

to Think Like a
21st Century Economist

KATE RAWORTH

Doughnut Economics

Seven Ways to Think
Like a 21st Century Economist

Audiobook Illustration Supplement

KATE RAWORTH

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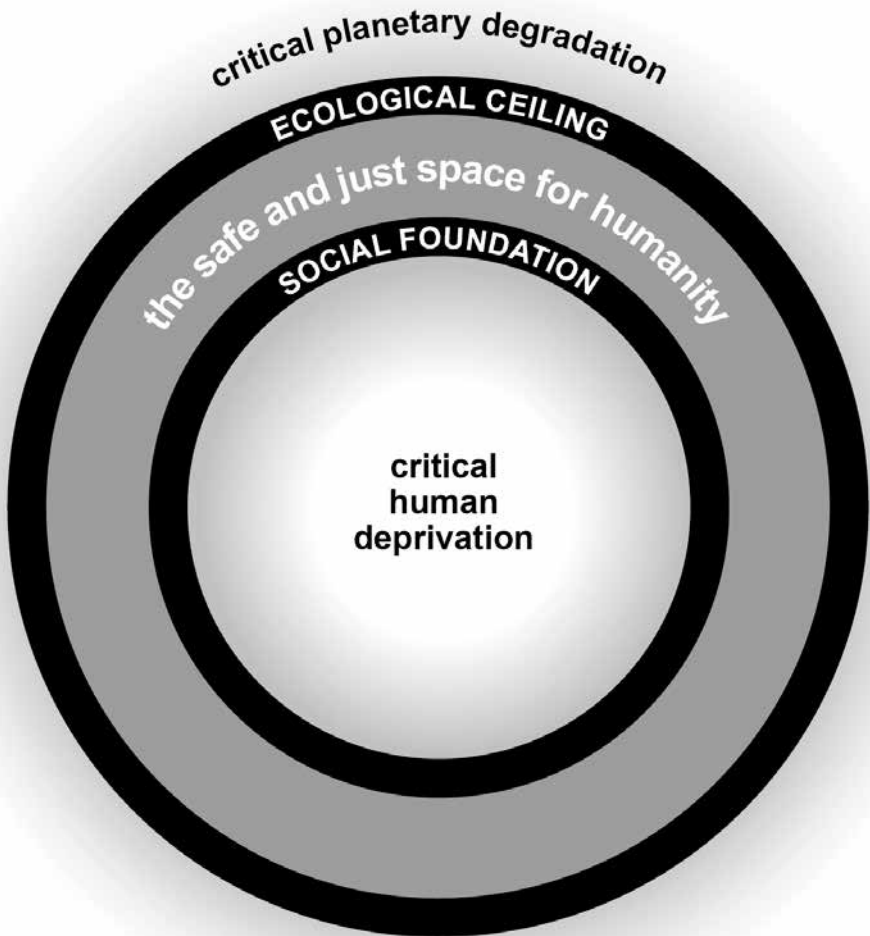
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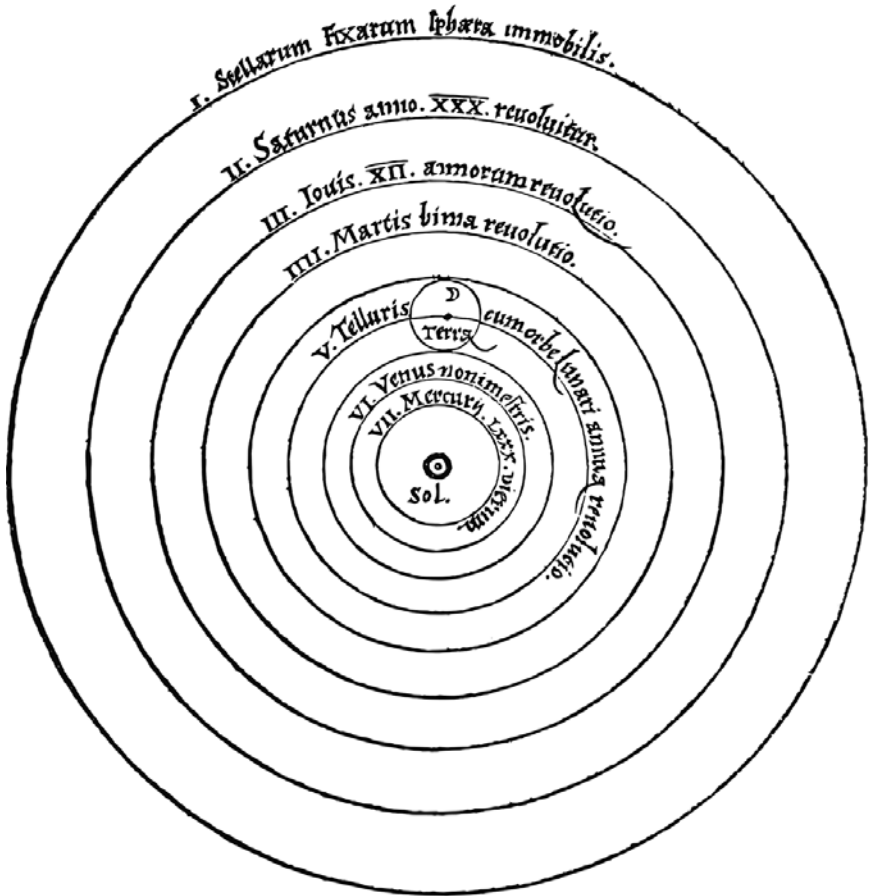
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Essence of the Doughnut



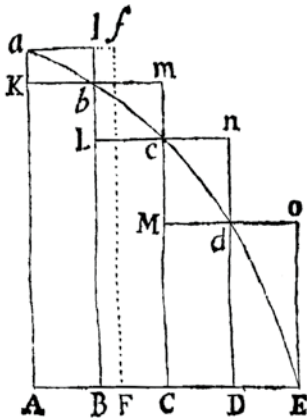
The essence of the Doughnut: a social foundation of well-being that no one should fall below and an ecological ceiling of planetary pressure that we should not go beyond. Between the two lies a safe and just space for all.

Copernicus's Universe

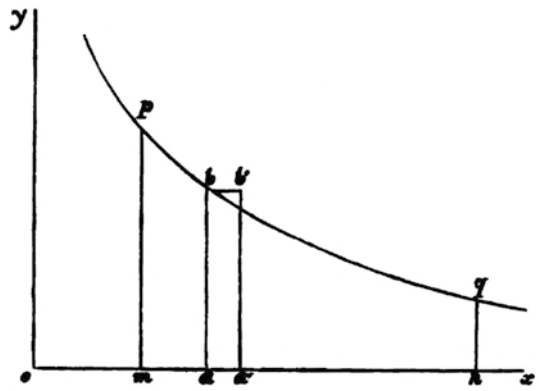


Copernicus's 1543 depiction of the universe, which showed Earth revolving around the sun.

Newton's and Jevons's Drawings



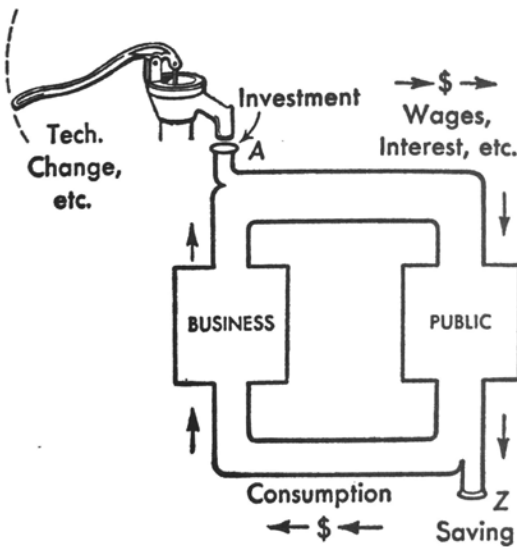
On the motion of bodies /
Isaac Newton, 1687



On the law of demand /
William Stanley Jevons, 1871

Aspiring to make economics seem as scientific as physics, Jevons drew his theories in the style of Newton's diagrams of the laws of motion.

Plumbed Pipes

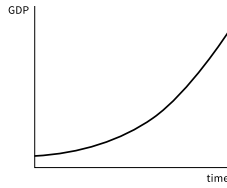


Samuelson's 1948 Circular Flow diagram, which depicted income flowing round the economy as if it were water flowing round plumbed pipes.

Seven Ways to Think:

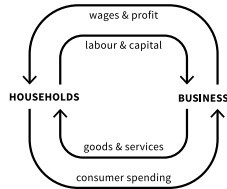
From Twentieth-Century Economics

1. Change the Goal



GDP

2. See the Big Picture



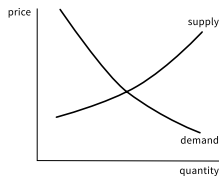
self-contained market

3. Nurture Human Nature



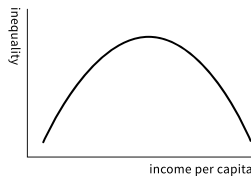
rational economic man

4. Get Savvy with Systems



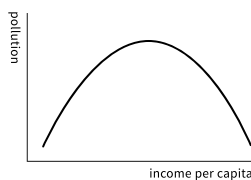
mechanical equilibrium

5. Design to Distribute



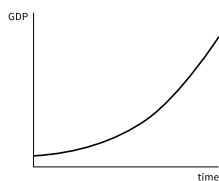
growth will even it up again

6. Create to Regenerate



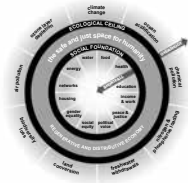
growth will clean it up again

7. Be Agnostic about Growth

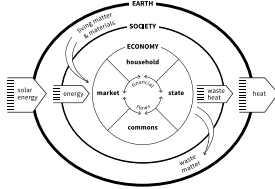


growth addicted

To Twenty-First-Century Economics



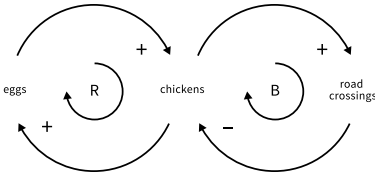
the Doughnut



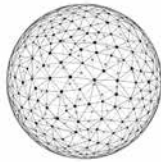
embedded economy



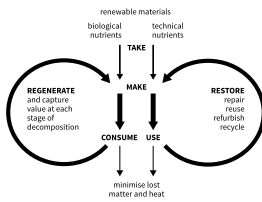
social adaptable humans



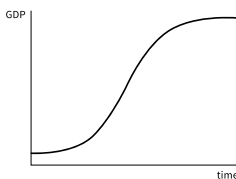
dynamic complexity



distributive by design

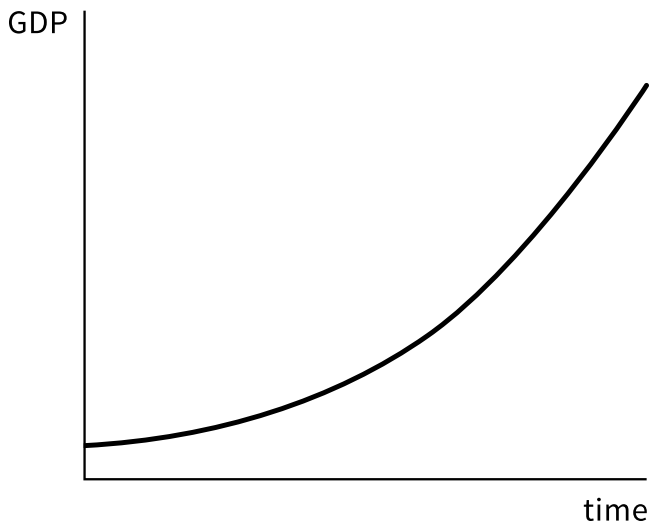


regenerative by design



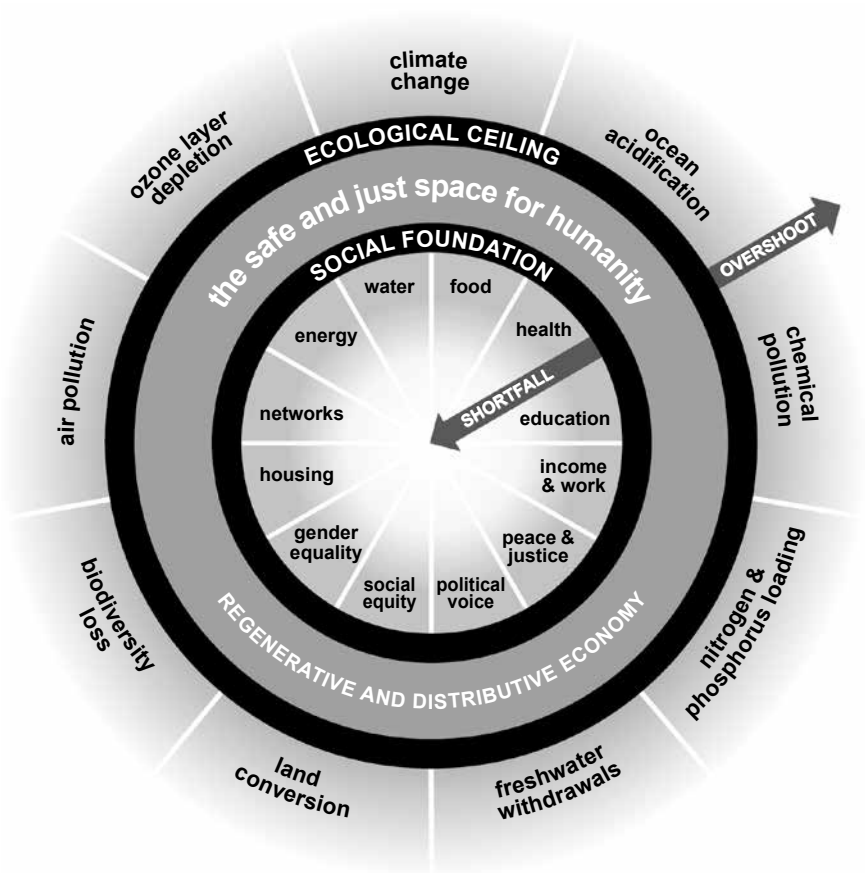
growth agnostic

GDP Growth



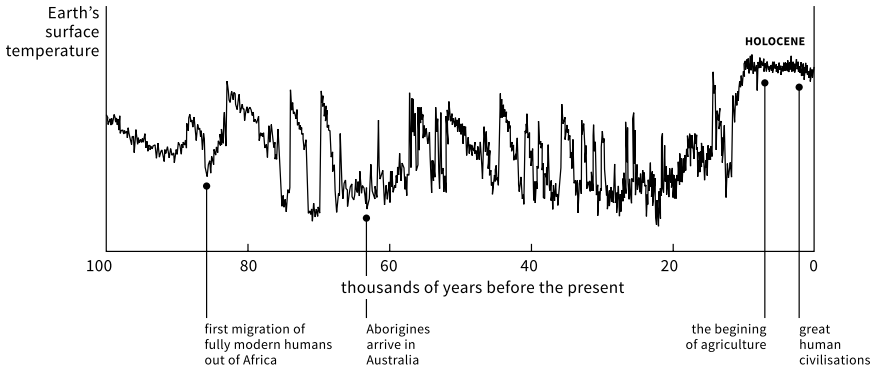
GDP growth: forwards and upwards.

The Doughnut



The Doughnut: a twenty-first-century compass. Between its social foundation of human well-being and ecological ceiling of planetary pressure lies the safe and just space for humanity.

Earth's Temperatures Over Time



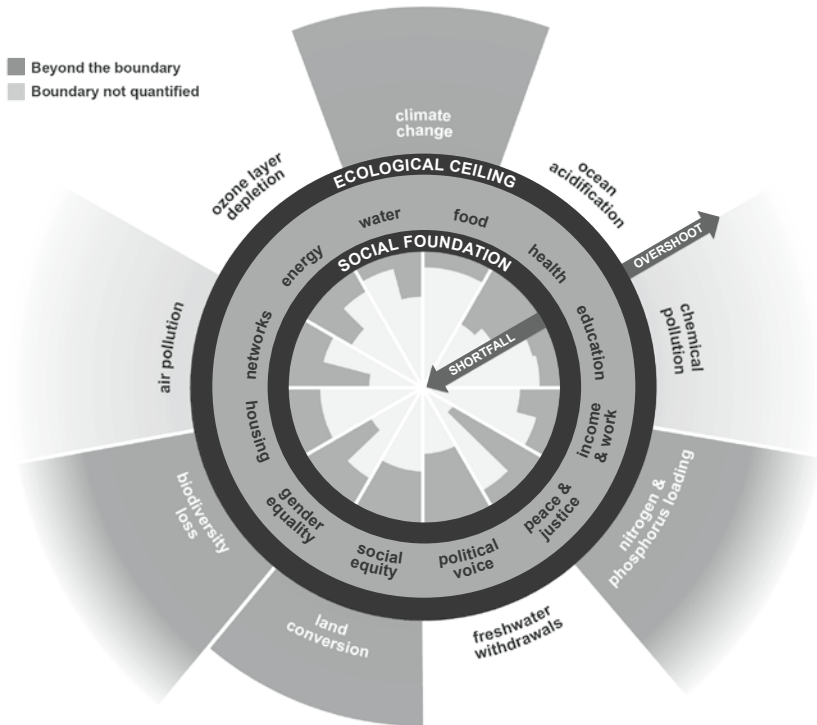
Home sweet home in the Holocene. The graph shows Earth's changing temperature over the past 100,000 years, based on data from the Greenland ice core. The last 12,000 years have been unusually stable.²⁶

Ancient Symbols



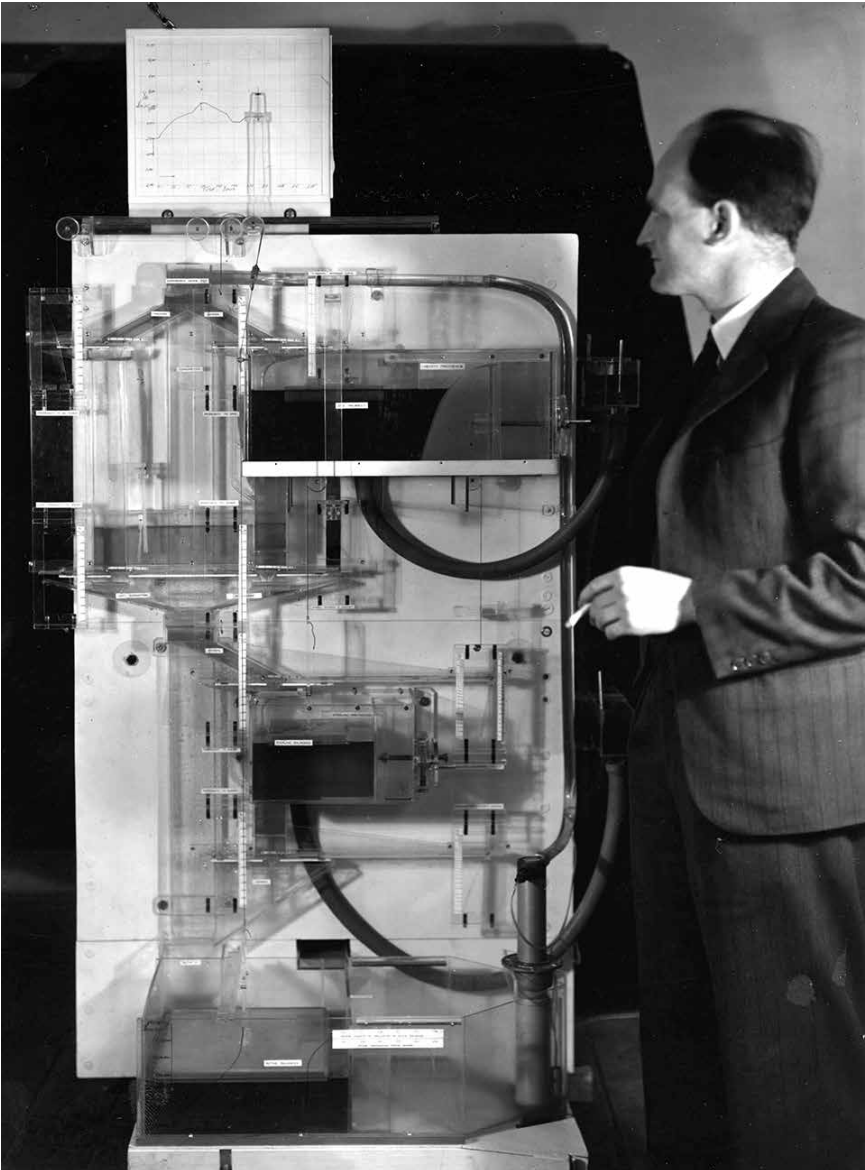
Ancient symbols of dynamic balance: the Taoist yin yang, Maori takarangi, Buddhist endless knot and Celtic double spiral.

Beyond the Boundaries



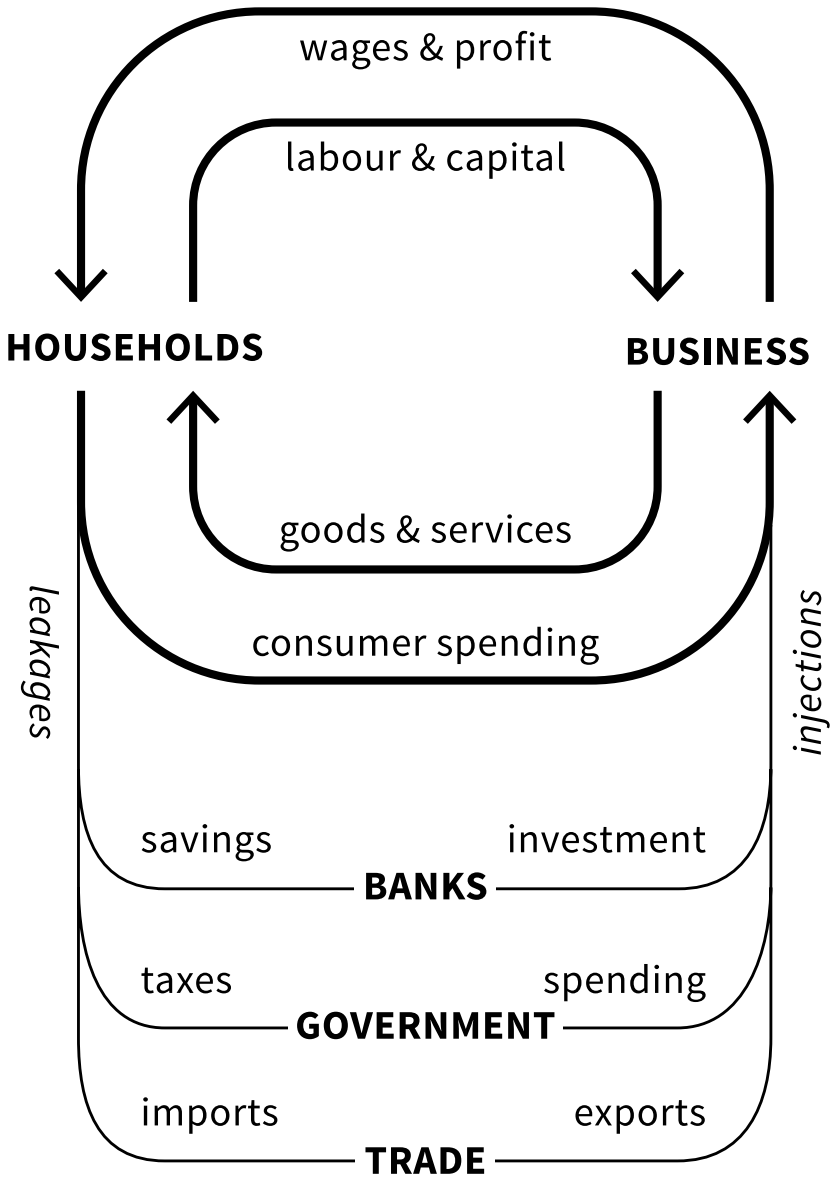
Transgressing both sides of the Doughnut's boundaries. The dark wedges below the social foundation show the proportion of people worldwide falling short on life's basics. The dark wedges radiating beyond the ecological ceiling show the overshoot of planetary boundaries (for complete data see the Appendix).

The MONIAC



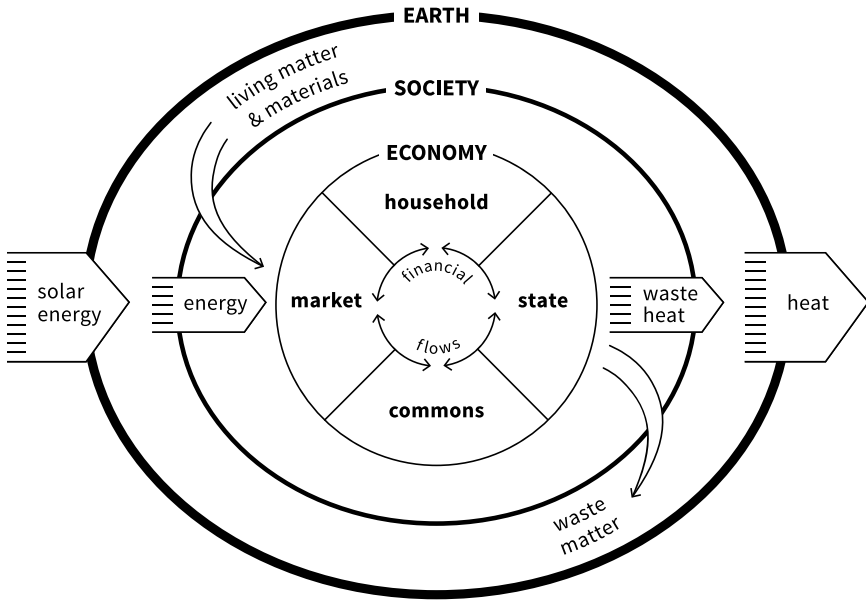
Bill Phillips and the MONIAC.

The Circular Flow Diagram



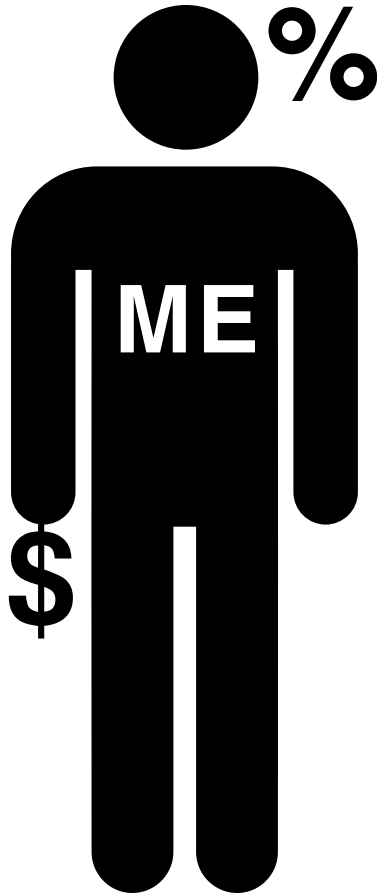
The Circular Flow diagram, which for 70 years was the defining depiction of the macroeconomy.

The Embedded Economy



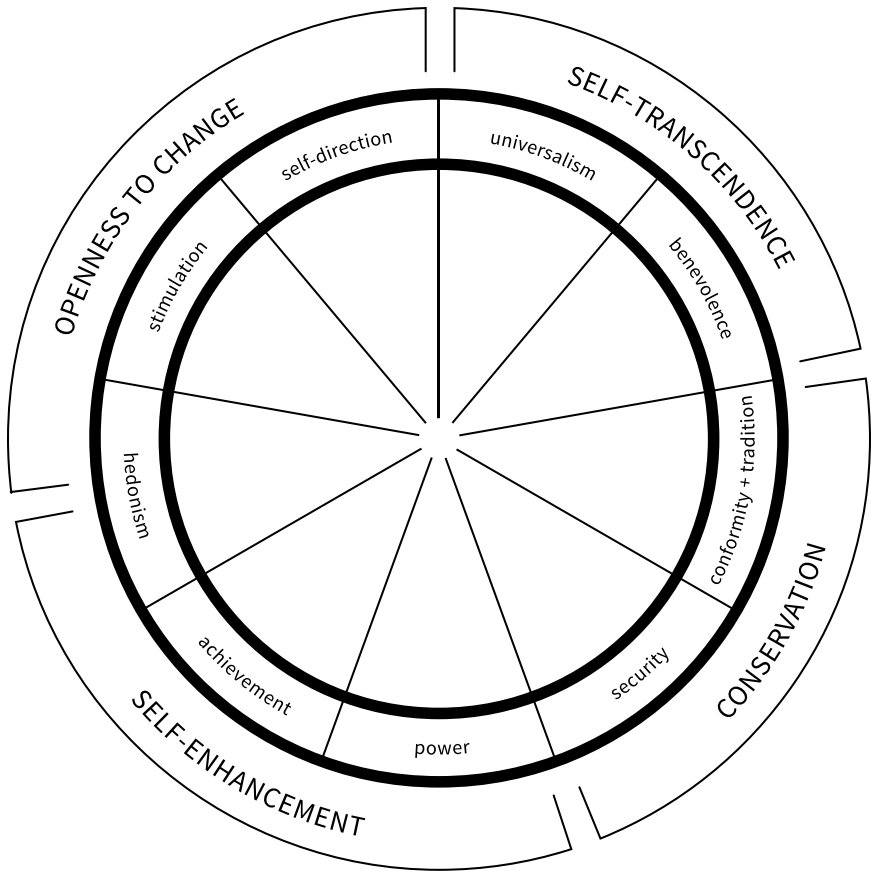
The Embedded Economy, which nests the economy within society and within the living world while recognising the diverse ways in which it can meet people's needs and wants.

Rational Economic Man



Rational Economic Man: the human character at the heart of mainstream economic theory.

Schwartz's Circumplex



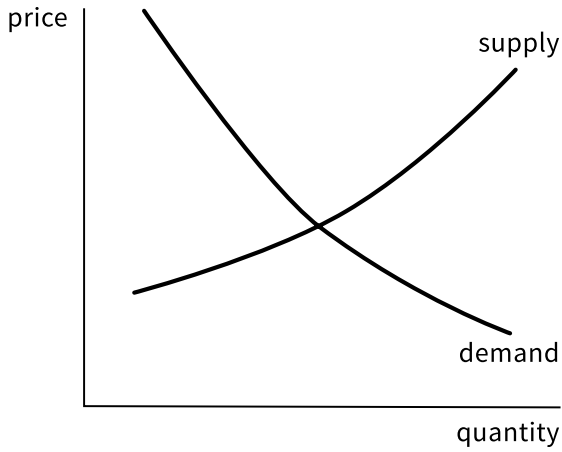
Schwartz's value circumplex, which shows the ten basic personal values that are common across cultures.

A New Portrait



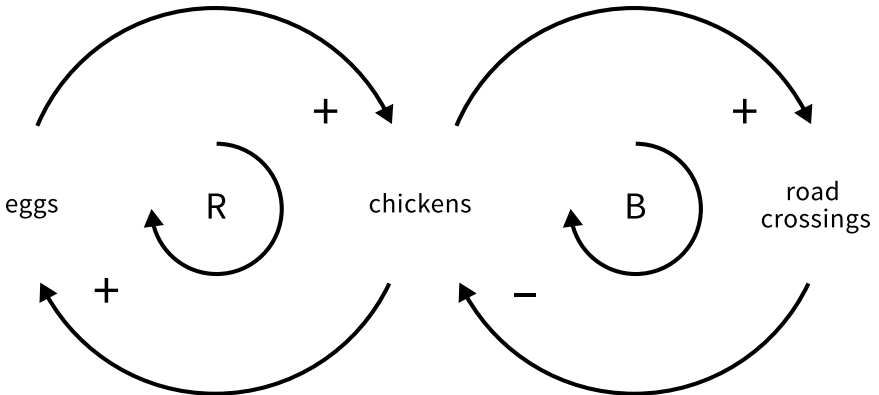
A new portrait of humanity: preparatory sketches.

Supply and Demand



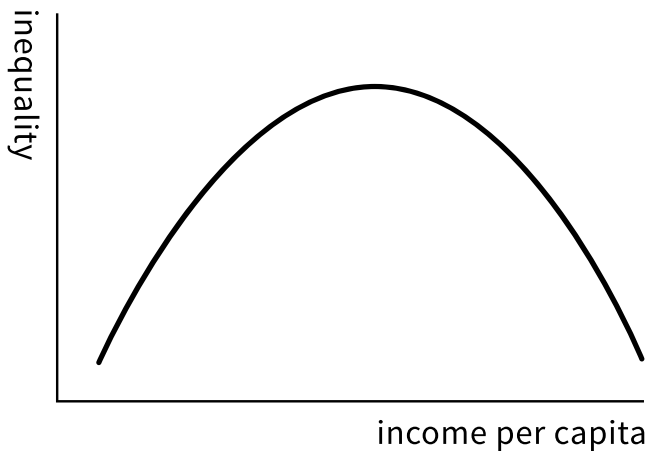
Supply and demand: the point at which price matches supply with demand is the point of market equilibrium.

Feedback Loops



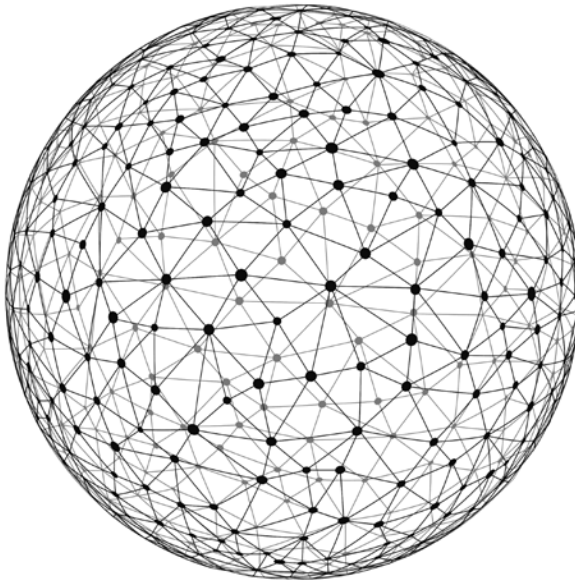
Feedback loops: the fundamentals of complex systems. Reinforcing feedback (R) amplifies what is happening, while balancing feedback (B) counters it.

The Kuznet's Curve



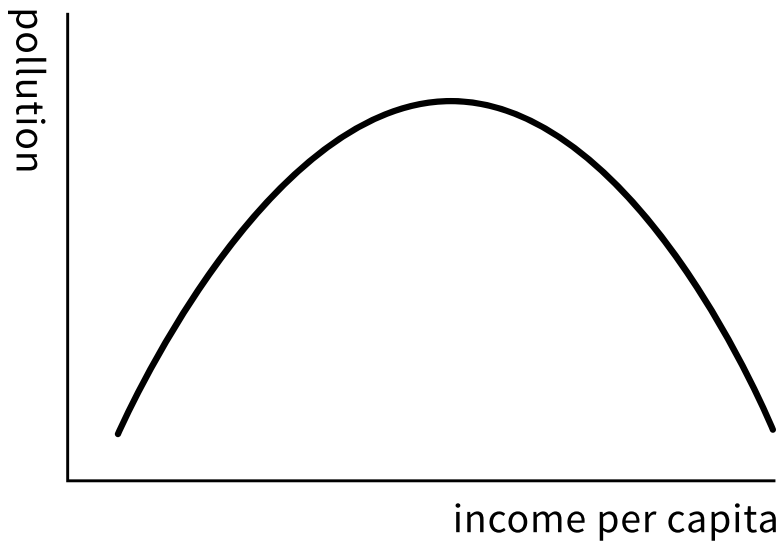
The Kuznets Curve, which suggests that as countries get richer, inequality must rise before it will eventually fall.

Distributed Network



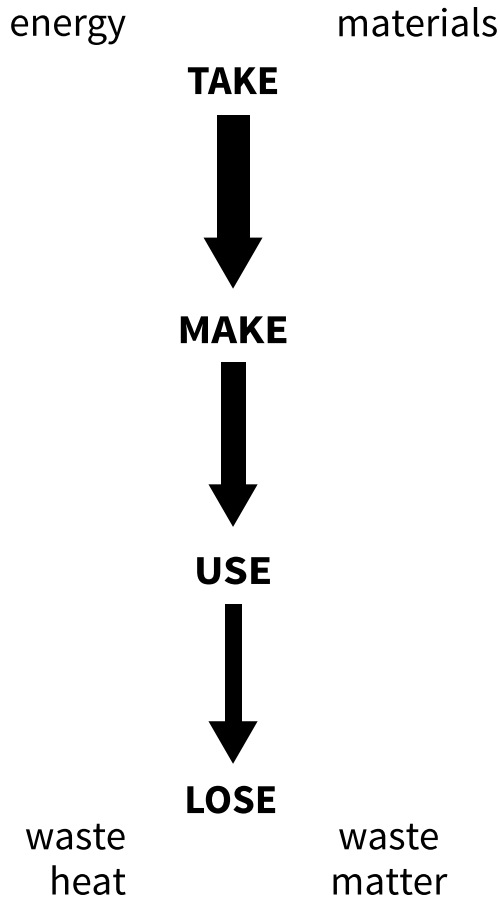
A network of flows: structuring an economy as a distributed network can more equitably distribute the income and wealth that it generates.

The Environmental Kuznet's Curve



The Environmental Kuznets Curve, which suggests that growth will eventually fix the environmental problems that it creates.

The Caterpillar Economy



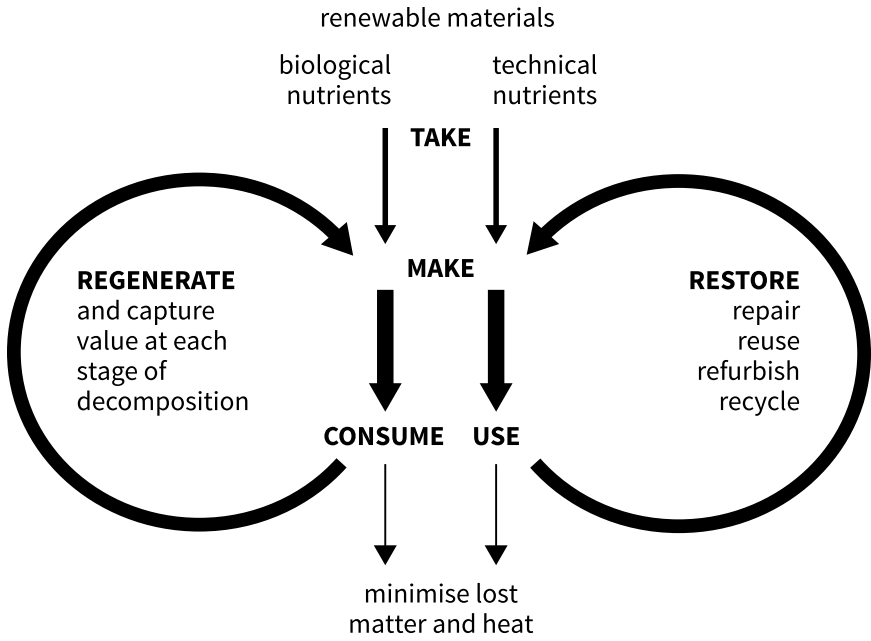
The caterpillar economy of degenerative industrial design.

The Corporate To-Do List



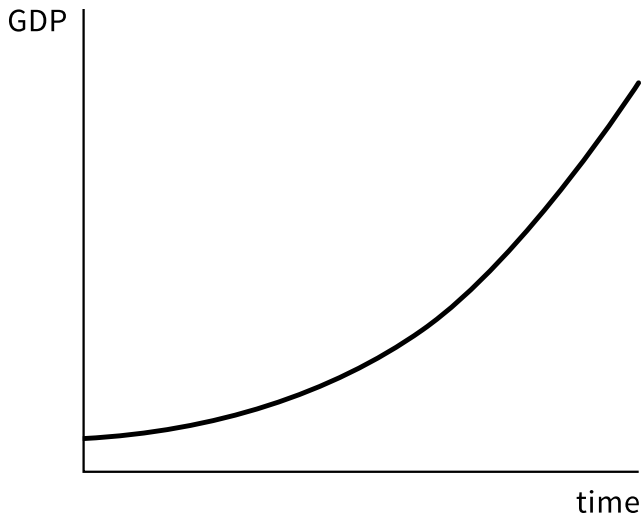
Which one is your business aiming to do?

The Butterfly Economy



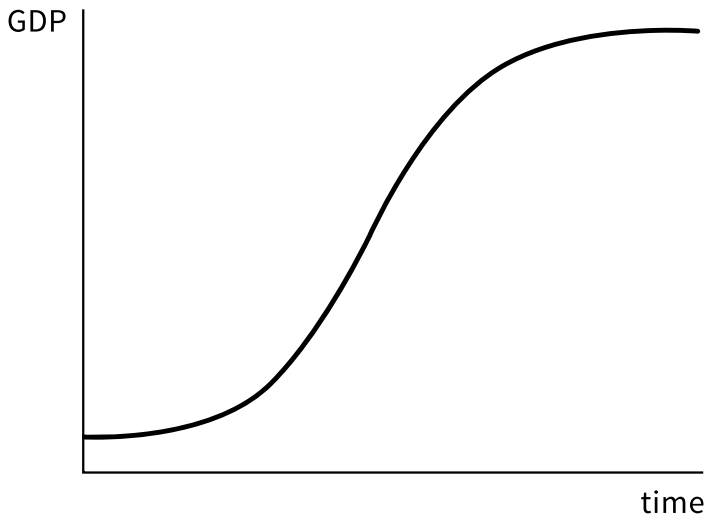
The butterfly economy: regenerative by design.

GDP Growth Revisited



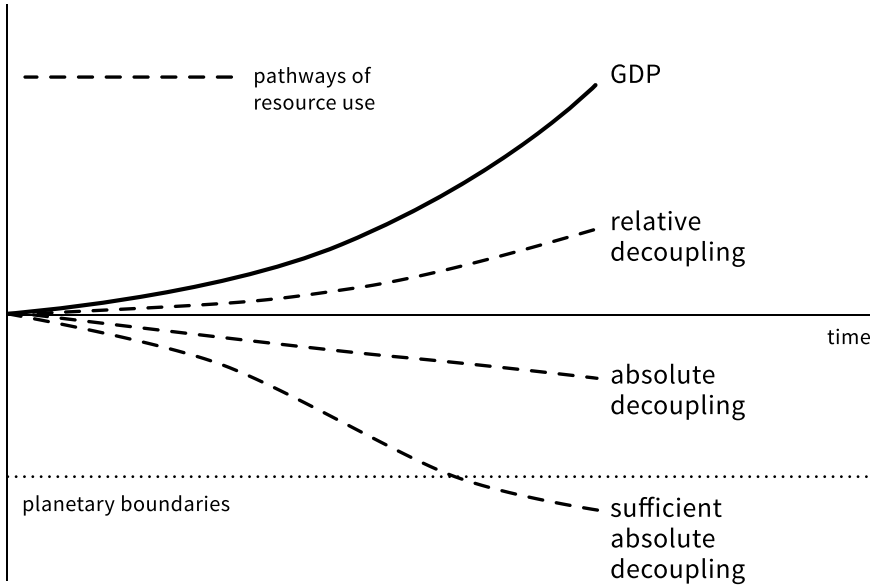
The exponential growth curve, revisited.

The S Curve



The S curve of growth. Early economists acknowledged what most of their successors have since ignored: that economic growth must eventually reach a limit.

Decoupling



The challenge of decoupling. If GDP is to continue growing in high-income countries, its associated resource use must fall not just relatively or absolutely but sufficiently absolutely to move back within planetary boundaries.

Table 1. The social foundation and its indicators of shortfall

Dimension	Illustrative Indicators (percent of global population unless otherwise stated)	%	Year
Food	Population undernourished	11	2014–16
Health	Population living in countries with under-five mortality rate exceeding 25 per 1,000 live births	46	2015
	Population living in countries with life expectancy at birth of less than 70 years	39	2013
Education	Adult population (aged 15+) who are illiterate	15	2013
	Children aged 12–15 out of school	17	2013
Income and Work	Population living on less than the international poverty limit of \$3.10 a day	29	2012
	Proportion of young people (aged 15–24) seeking but not able to find work	13	2014
Water and Sanitation	Population without access to improved drinking water	9	2015
	Population without access to improved sanitation	32	2015
Energy	Population lacking access to electricity	17	2013
	Population lacking access to clean cooking facilities	38	2013
Networks	Population stating that they are without someone to count on for help in times of trouble	24	2015
	Population without access to the Internet	57	2015
Housing	Global urban population living in slum housing in developing countries	24	2012
Gender Equality	Representation gap between women and men in national parliaments	56	2014
	Worldwide earnings gap between women and men	23	2009
Social Equity	Population living in countries with a Palma ratio of 2 or more (the ratio of the income share of the top 10% of people to that of the bottom 40%)	39	1995–2012
Political Voice	Population living in countries scoring 0.5 or less out of 1.0 in the Voice and Accountability Index	52	2013
Peace and Justice	Population living in countries scoring 50 or less out of 100 in the Corruption Perceptions Index	85	2014
	Population living in countries with a homicide rate of 10 or more per 10,000	13	2008–13

Sources: FAO, World Bank, WHO, UNDP, UNESCO, UNICEF, OECD, IEA, Gallup, ITU, UN, Cobham and Sumner, ILO, UNODC, and Transparency International. All percentages are rounded to the nearest integer.

Table 2. The ecological ceiling and its indicators of overshoot

Earth-System Pressure	Control Variable	Planetary Boundary	Current Value and Trend
Climate Change	Atmospheric carbon dioxide concentration, parts per million (ppm)	At most 350ppm	400ppm and rising (worsening)
Ocean Acidification	Average saturation of aragonite (calcium carbonate) at the ocean surface, as a percentage of pre-industrial levels	At least 80% of pre-industrial saturation levels	Around 84% and falling (intensifying)
Chemical Pollution	No global control variable yet defined	—	—
Nitrogen and Phosphorus Loading	Phosphorus applied to land as fertiliser, millions of tons per year	At most 6.2 million tons per year	Around 14 million tons per year and rising (worsening)
	Reactive nitrogen applied to land as fertiliser, millions of tons per year	At most 62 million tons per year	Around 150 million tons per year and rising (worsening)
Freshwater Withdrawals	Blue water consumption, cubic kilometres per year	At most 4,000 km ³ per year	Around 2,600 km ³ per year and rising (intensifying)
Land Conversion	Area of forested land as a proportion of forest-covered land prior to human alteration	At least 75%	62% and falling (worsening)
Biodiversity Loss	Rate of species extinction per million species per year	At most 10	Around 100–1,000 and rising (worsening)
Air Pollution	No global control variable yet defined	—	—
Ozone Layer Depletion	Concentration of ozone in the stratosphere, in Dobson Units	At least 275 DU	283 DU and rising (improving)

Source: Steffen et al. (2015).

IMAGE CREDITS

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ABOUT THE AUTHOR

Kate Raworth is an economist focused on exploring the economic thinking needed to address the twenty-first century's social and ecological challenges. She teaches at Oxford University's Environmental Change Institute, where she is a senior visiting research associate. She is also a senior associate of the Cambridge Institute for Sustainability Leadership, and teaches on the Economics for Transition programme at Schumacher College.



Her internationally acclaimed idea of Doughnut Economics has been widely influential amongst sustainable development thinkers, progressive businesses and political activists, and she has presented its core ideas to audiences ranging from the UN General Assembly to the Occupy movement.

Over the past 20 years, Kate's career has taken her from working with micro-entrepreneurs in the villages of Zanzibar to co-authoring flagship reports for the United Nations Development Programme in New York, followed by a decade as Senior Researcher at Oxfam.

Named by *The Guardian* as 'one of the top ten tweeters on economic transformation', her media work includes articles and interviews for the *Financial Times*, *The Wall Street Journal*, *New Statesman*, CNN, and *Al-Jazeera*. Her academic research has appeared in journals including *Nature Climate Change*, *Sustainability*, *Gender and Development*, and the *Journal of Ethics and International Affairs*.

Kate has a BA in politics, philosophy and economics, and an MSc in economics for development, both from Oxford University. She is a member of several advisory boards, including the Stockholm School of Economics' Global Challenges programme, Surrey University's Centre for the Understanding of Sustainable Prosperity, and Oxford University's Environmental Change Institute.

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to *Doughnut Economics*
by Kate Raworth.**

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