Dirk Helbing (ETH Zurich)
dhelbing@ethz.ch

Building A New Civilization Based on Freedom, Peace and Prosperity

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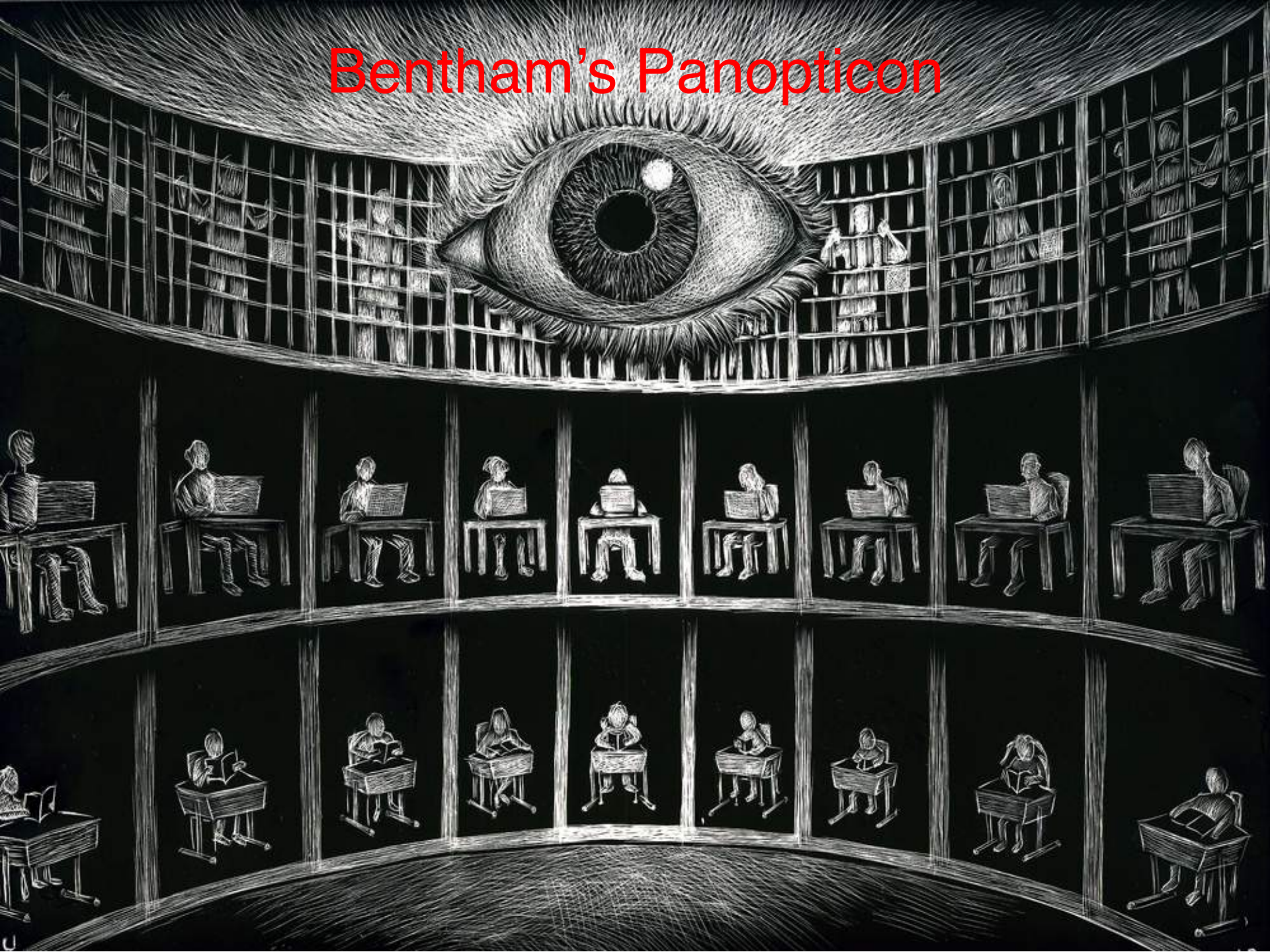
The World Is Being Challenged by China. How to Respond?

Big data, meet Big Brother

China invents the digital totalitarian state

The worrying implications of its social-credit project

Bentham's Panopticon



Controlling People by Mass Surveillance, “Mind Control”, and Citizen Scores

AI Is God: Former Google Engineer Creating New Religion

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8 Months Ago

AI Is God: Former Google Engineer Creating New Religion

Anthony Levandowski, the multi-millionaire engineer who got famous for being fired by Waymo, a company belonging to Google has founded a religious organization which is called Way of the Future.

Papstrede vor der UNO

Papst Franziskus vor der Vollversammlung der UNO. - AP

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Growth, innovation, scaling, and the pace of life in cities

Luís M. A. Bettencourt*†, José Lobo‡, Dirk Helbing§, Christian Kühnert§, and Geoffrey B. West*¶

*Theoretical Division, MS B284, Los Alamos National Laboratory, Los Alamos, NM 87545; ‡Global Institute of Sustainability, Arizona State University, P.O. Box 873211, Tempe, AZ 85287-3211; §Institute for Transport and Economics, Dresden University of Technology, Andreas-Schubert-Strasse 23, D-01062 Dresden, Germany; and ¶Santa Fe Institute, 1399 Hyde Park Road, Santa Fe, NM 87501

Edited by Elinor Ostrom, Indiana University, Bloomington, IN, and approved March 6, 2007 (received for review November 19, 2006)

Humanity has just crossed a major landmark in its history with the majority of people now living in cities. Cities have long been known to be society's predominant engine of innovation and wealth creation, yet they are also its main source of crime, pollution, and disease. The inexorable trend toward urbanization worldwide presents an urgent challenge for developing a predictive, quantitative theory of urban organization and sustainable development. Here we present empirical evidence indicating that the processes relating urbanization to economic development and knowledge creation are very general, being shared by all cities belonging to the same urban system and sustained across different nations and times. Many diverse properties of cities from patent production and personal income to electrical cable length are shown to be power law functions of population size with scaling exponents, β, that fall into distinct universality classes. Quantities reflecting wealth creation and innovation have $\beta \approx 1.2 > 1$ (increasing returns), whereas those accounting for infrastructure display $\beta \approx 0.8 < 1$ (economies of scale). We predict that the pace of social life in the city increases with population size, in quantitative agreement with data, and we discuss how cities are similar to, and differ from, biological organisms, for which $\beta < 1$. Finally, we explore possible consequences of these scaling relations by deriving growth equations, which quantify the dramatic difference between growth fueled by innovation versus that driven by economies of scale. This difference suggests that, as population grows, major innovation cycles must be generated at a continually accelerating rate to sustain growth and avoid stagnation or collapse.

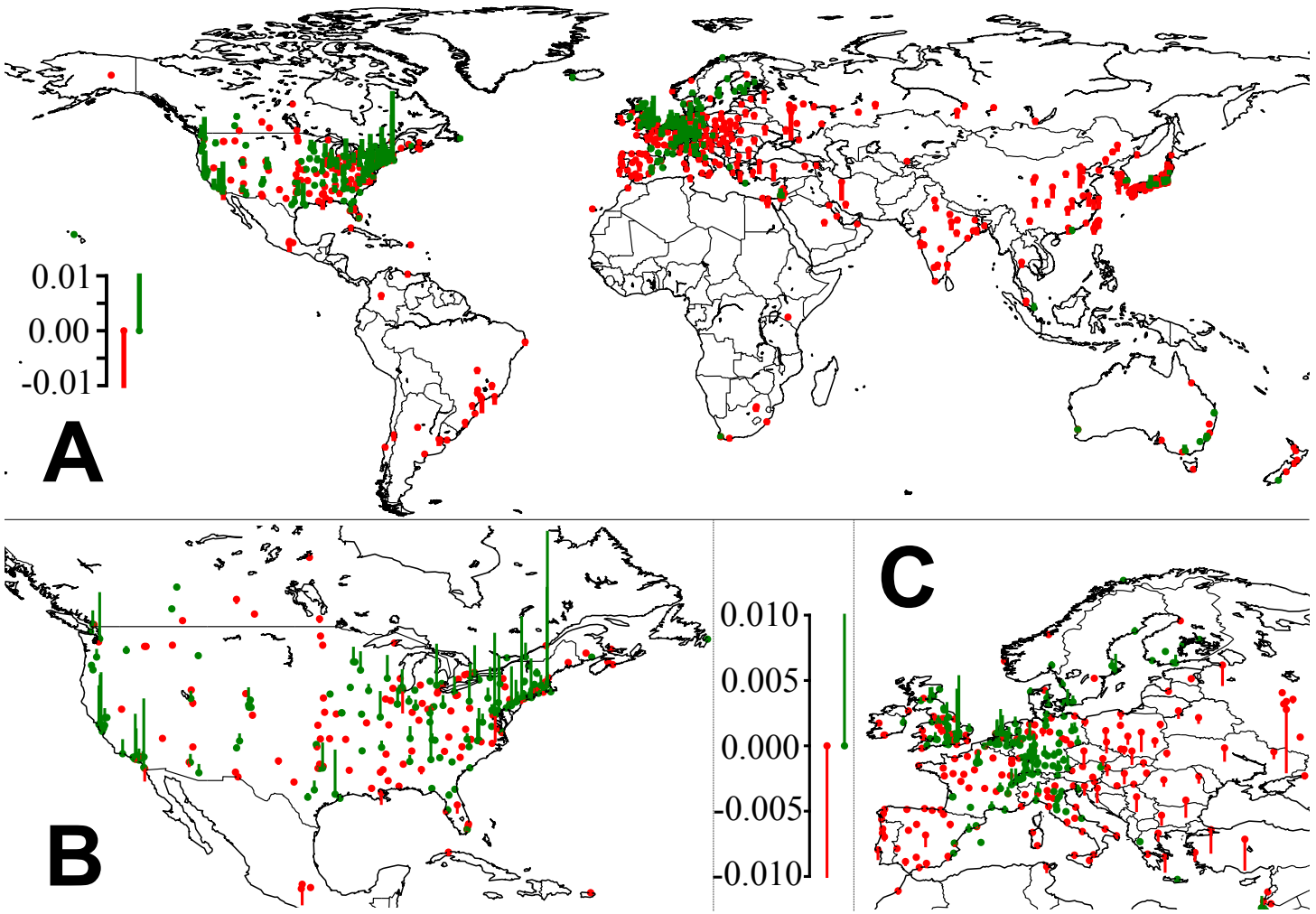
The increasing concentration of people in cities presents both opportunities and challenges (9) toward future scenarios of sustainable development. On the one hand, cities make possible economies of scale in infrastructure (9) and facilitate the optimized delivery of social services, such as education, health care, and efficient governance. Other impacts, however, arise because of human adaptation to urban living (9, 10–14). They can be direct, resulting from obvious changes in land use (3) [e.g., urban heat island effects (15, 16) and increased green house gas emissions (17)] or indirect, following from changes in consumption (18) and human behavior (10–14), already emphasized in classical work by Simmel and Wirth in urban sociology (11, 12) and by Milgram in psychology (13). An important result of urbanization is also an increased division of labor (10) and the growth of occupations geared toward innovation and wealth creation (19–22). The features common to this set of impacts are that they are open-ended and involve permanent adaptation, whereas their environmental implications are ambivalent, aggravating stresses on natural environments in some cases and creating the conditions for sustainable solutions in others (9).

These unfolding complex demographic and social trends make it clear that the quantitative understanding of human social organization and dynamics in cities (7, 9) is a major piece of the puzzle toward navigating successfully a transition to sustainability. However, despite much historical evidence (19, 20) that cities are the principal engines of innovation and economic growth, a quantitative, predictive theory for understanding their dynamics and organization (23, 24) and estimating their future trajectory

Collective intelligence
(upgrade of democracy,
harvesting diversity)

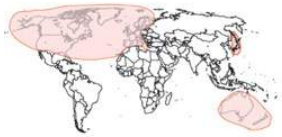
Combinatorial innovation
(upgrade of capitalism,
based on openness)

Freedom of Thought Supports Innovation

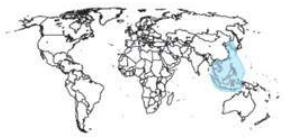


Global Multi-Level Analysis of the 'Scientific Food Web'

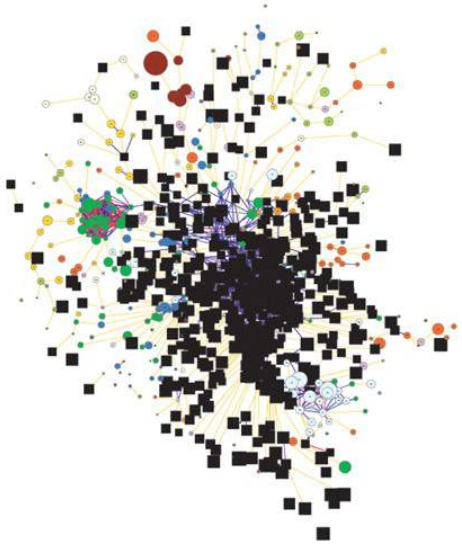
Amin Mazloumian[1], Dirk Helbing[1], Sergi Lozano[1,2], Robert P. Light[3] & Katy Börner[3]

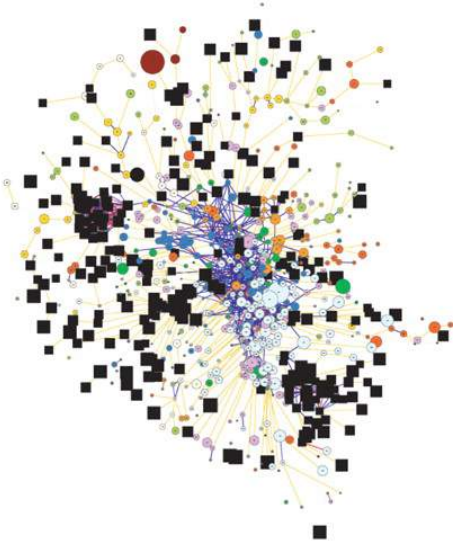


Industrialized Countries



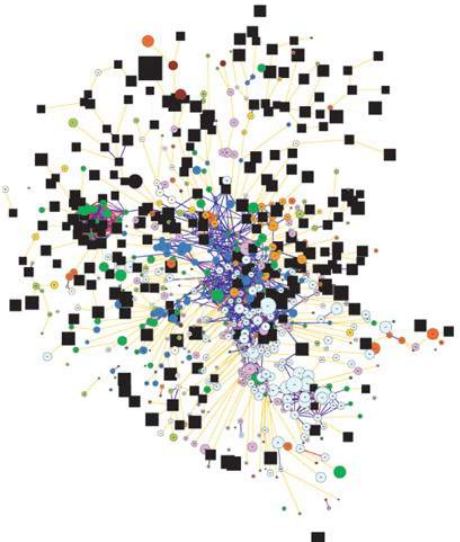
East Asia Pacific

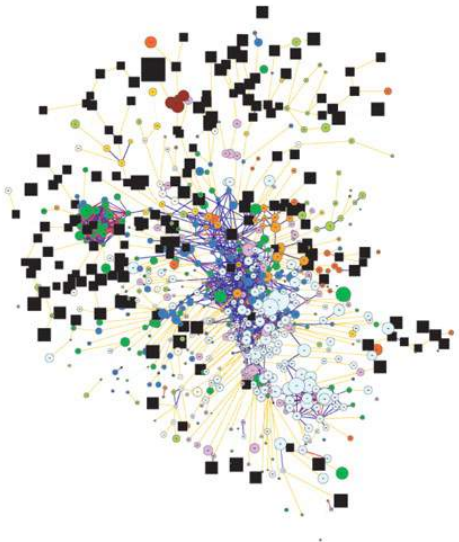




Latin America and the Caribbean

Sub-Saharan Africa





Diversity and Complexity Are Crucial Economic Success Factors

C.A. Hidalgo, B. Klinger, A.L. Barabasi, R. Hausmann, The product space conditions the development of nations. *Science* **317**, 482-487 (2007).

ECONOMIC COMPLEXITY
MEASURING THE INTANGIBLES

A CONSUMER'S GUIDE

ECONOMIC COMPLEXITY MEASURING THE INTANGIBLES
A CONSUMER'S GUIDE

AUTHORS: MATTHIEU CRISTELLI, ANDREA TACCHELLA, LUCIANO PIETRONERO

Evidence for a Collective Intelligence Factor in the Performance of Human Groups

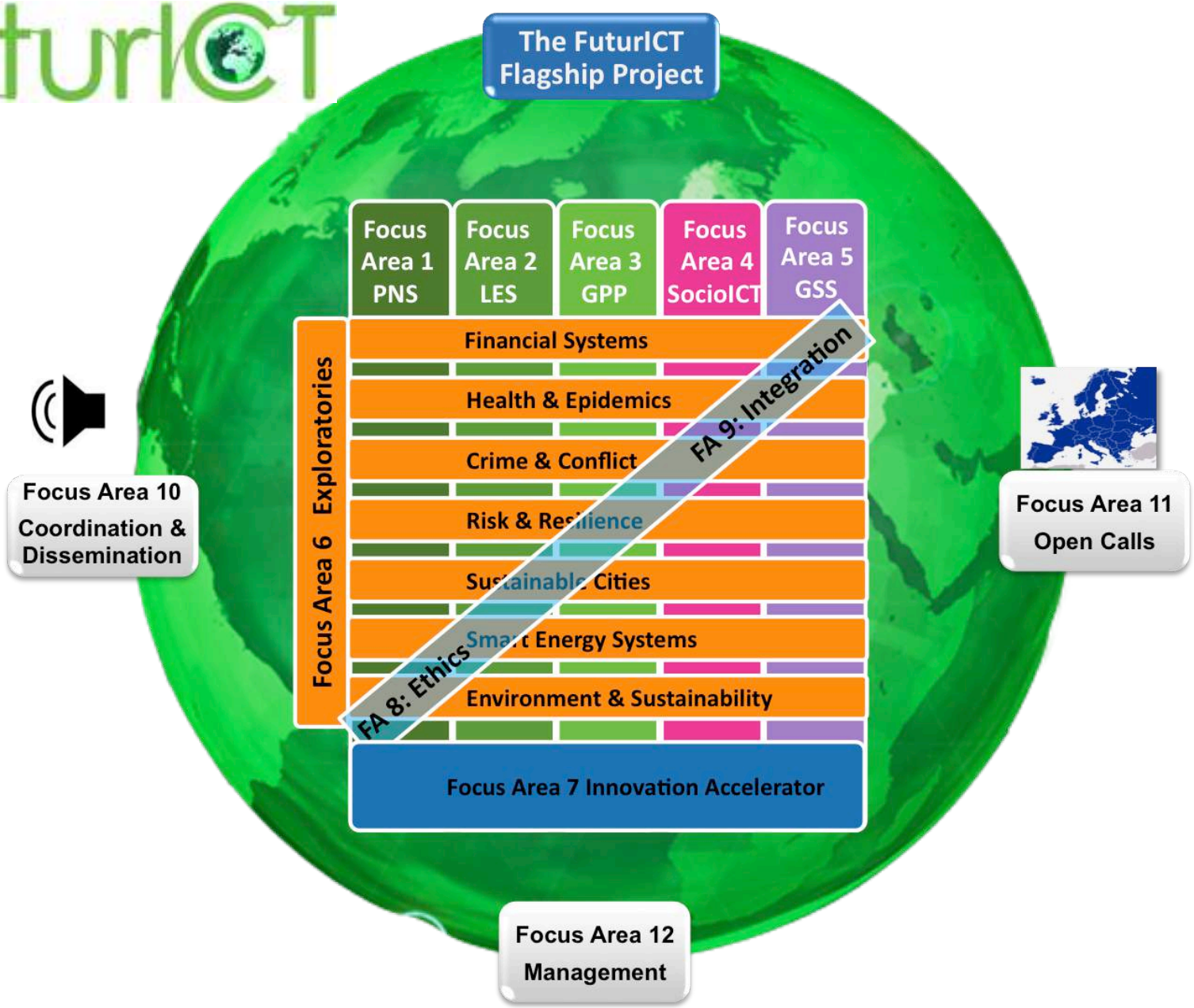
Anita Williams Woolley[1,*], Christopher F. Chabris[2,3], Alex Pentland[3,4], Nada Hashmi[3,5], Thomas W. Malone[3,5]
+ See all authors and affiliations

Science 29 Oct 2010:
Vol. 330, Issue 6004, pp. 686-688
DOI: 10.1126/science.1193147

Meeting of Minds

The performance of humans across a range of different kinds of cognitive tasks has been encapsulated as a common statistical factor called *g* or general intelligence factor. What intelligence actually is, is unclear and hotly debated, yet there is a reproducible association of *g* with performance outcomes, such as income and academic achievement. **Woolley *et al.*** (p. 686, published online 30 September) report a psychometric methodology for quantifying a factor termed "collective intelligence" (*c*), which reflects how well groups perform on a similarly diverse set of group problem-solving tasks. The primary contributors to *c* appear to be the *g* factors of the group members, along with a propensity toward social sensitivity—in essence, how well individuals work with others.

What can we do?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Focus Area 5 GSS
Focus Area 6 Explorations
Financial Systems
Health & Epidemics
Crime & Conflict
Risk & Resilience
Sustainable Cities
Smart Energy Systems
Environment & Sustainability
FA 8: Ethics
FA 9: Integration
Focus Area 7 Innovation Accelerator
Focus Area 10 Coordination & Dissemination
Focus Area 11 Open Calls
Focus Area 12 Management

Philip Ball

Why Society is a Complex Matter

Meeting Twenty-first Century Challenges With a New Kind of Science

With a contribution by Dirk Helbing

Springer

The European Physical Journal

volume 214 · November II · 2012

EPJ ST

Recognized by European Physical Society

Special Topics

D. Helbing and A. Carbone (Eds.)

Participatory Science and Computing for Our Complex World

FuturICT is a visionary project that aims at creating participatory science and computing to explore, understand and manage our complex world in a more resilient and sustainable way (see www.futurict.eu for details)

edp sciences Springer

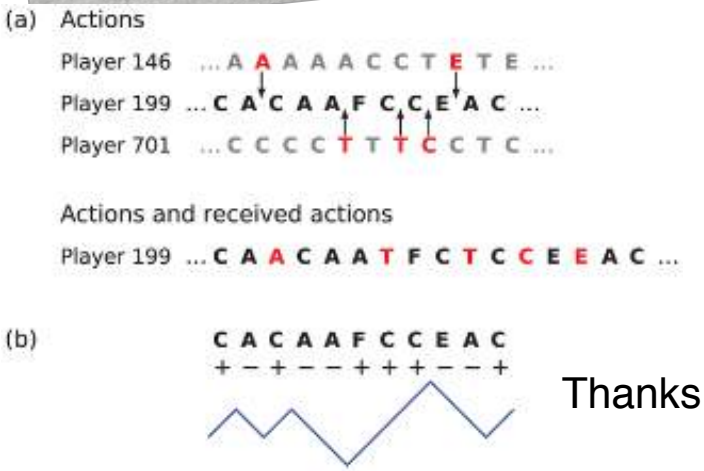
Data Science

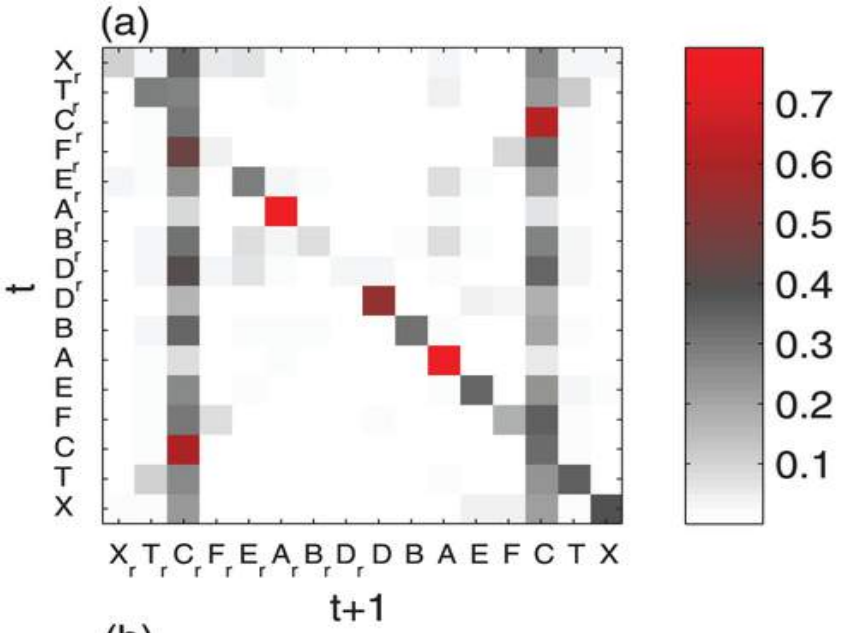
Computational Social Science

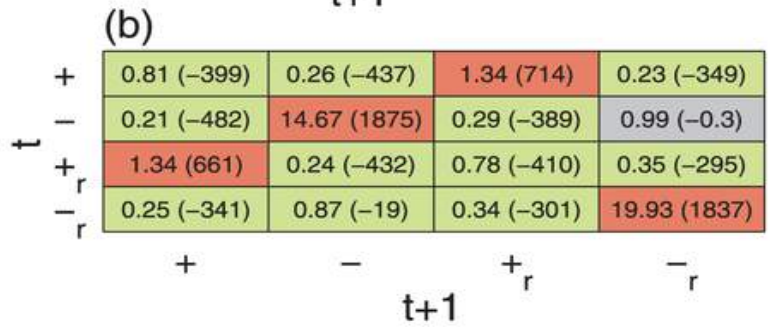
Global Systems Science

Exploratories

Interactive Games as Experimental Platforms

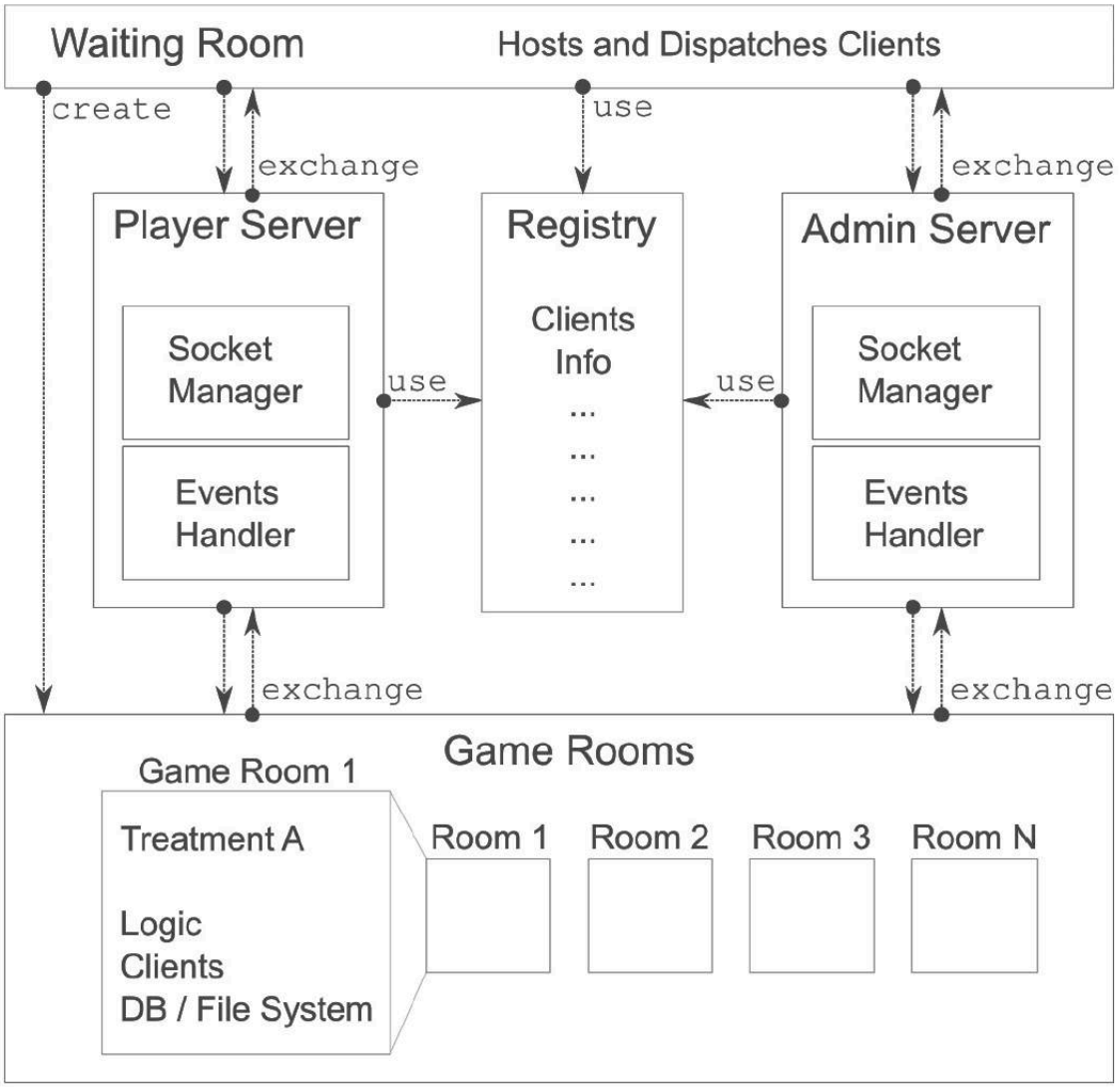






Thanks to Stefan Thurner

‘Human-Genome-Project-like’ vision: Develop interactive platforms for rapid experimenting, to better understand human behaviour



NodeGame – Platform for Online Experiments

Stefano Balietti

Peer review and competition in the Art Exhibition Game

Stefano Balietti[a,b,c,1], Robert L. Goldstone[d], and Dirk Helbing[e]

[a]Network Science Institute, Northeastern University, Boston, MA 02115; [b]Institute for Quantitative Social Science, Harvard University, Cambridge, MA 02138; [c]D'Amore-McKim School of Business, Northeastern University, Boston, MA 02115; [d]The Percepts and Concepts Laboratory, Department of Psychological and Brain Sciences, Indiana University, Bloomington, IN 47405; and [e]Computational Social Science, Department of Humanities, Social and Political Sciences, Eidgenossische Technische Hochschule (ETH) Zürich, 8092 Zurich, Switzerland

Planetary Nervous System

Living Earth Simulator

Ethical ICT, Design for Values

How can we engineer a more responsible digital future

Creating ethical machines is essential in order to prevent technology undermining basic human values.

Image: REUTERS/Thomas Peter

Value Pluralism and Design for Values

- Privacy
- Autonomy
- Equity
- Justice
- Dignity
- Happiness
- Wellbeing
- Safety
- Security
- Sustainability
- Health
- Friendship
- Solidarity
- Peace
- Usability
- Resilience
- Efficiency
- Flexibility

After Jeroen van den Hoven

Goals must be balanced (politically negotiated).
Otherwise, the approach is oversimplified, inadequate.

What Does Democracy Mean?

- Human rights, human dignity
- Freedom
- Self-determination
- Pluralism
- Protection of minorities
- Division of power
- Checks and Balances
- Participation
- Transparency
- Fairness
- Justice
- Legitimacy
- Anonymous, equal votes

Design for values, value-sensitive design

- Privacy
- ✓ Protection from misuse/exposure
- ✓ Right to be left alone

Engineering Democratization in Internet of Things Data Analytics

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Evangelos Pournaras ; Jovan Nikolic ; Alex Omerzel ; Dirk Helbing

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Abstract:

The pervasiveness of Internet of Things devices in techno-socio-economic domains such as Smart Cities and Smart Grids results in a massive scale of data about our society. Decision-making by system operators or policy-makers requires a sophisticated understanding of these data with real-time data analytics methods. However, common data analytics methods often serve exclusively corporate and commercial interests and result in privacy-intrusion, surveillance, profiling and discriminatory actions. This paper illustrates an alternative data analytics approach that relies on participatory citizens to contribute Internet of Things data and crowdsourced computational resources in order to compute aggregation functions in a collective fashion. This democratization calls for a fully decentralized and privacypreserving system design with which a local data management mechanism implemented in smart phones can guarantee highly accurate computations under highly dynamic data streams. Experimental evaluation with real-world Smart Grid data illustrates the performance trade-offs and shows how they can be managed in an automated and empirical way using decision trees.

Eur. Phys. J. Special Topics **225**, 3231–3241 (2016)

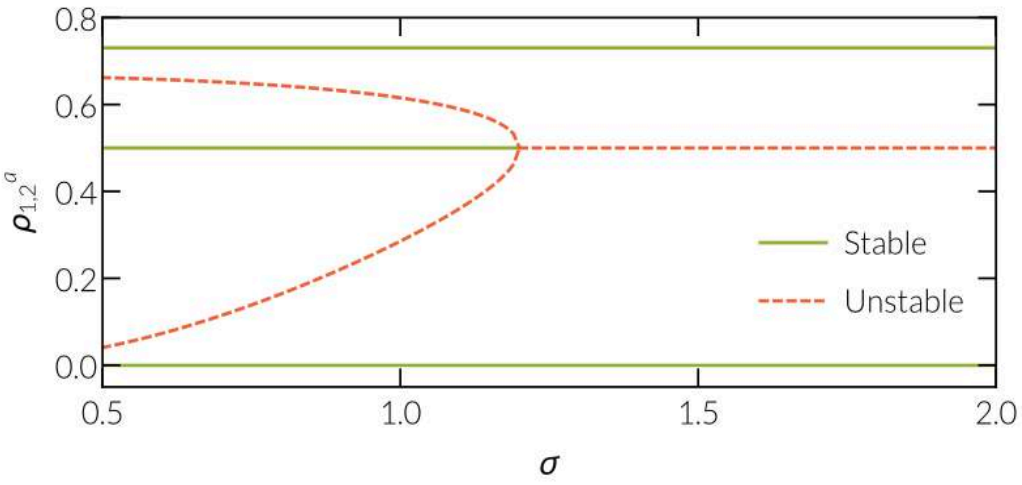
DOI: 10.1140/epjst/e2016-60156-7

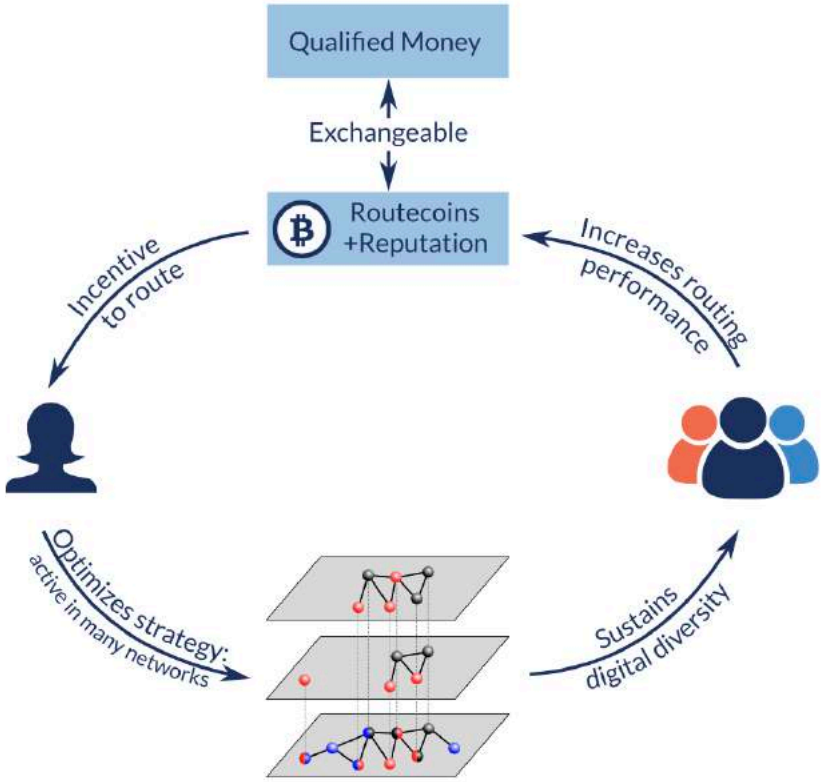
THE EUROPEAN PHYSICAL JOURNAL SPECIAL TOPICS

Regular Article

A "Social Bitcoin" could sustain a democratic digital world

Kaj-Kolja Kleineberg[1,a] and Dirk Helbing[2,b]





Qualified Money - A Better Financial System for the Future

14 Pages • Posted: 23 Nov 2014

Dirk Helbing
ETH Zürich - Department of Humanities, Social and Political Sciences (GESS)

Date Written: November 17, 2014

Abstract

The current system of frictionless convertible currencies reduces the number of money-related control variables effectively to one. I argue that this one-dimensionality is the cause of the recurrent bubbles and crashes in the financial system for thousands of years. But now we can create new, complementary forms of money that enable a better self-organization of our economy. For example, "Qualified Money" would introduce reputation-dependent conversion rates to reward investments into quality. Moreover, I discuss the roots of the EURO crisis and some ideas how to overcome it.

Keywords: Bitcoin, digital currencies, reputation system, financial architecture, unfeasible control problem, multi-dimensional money with a memory

Socio-Inspired Technologies

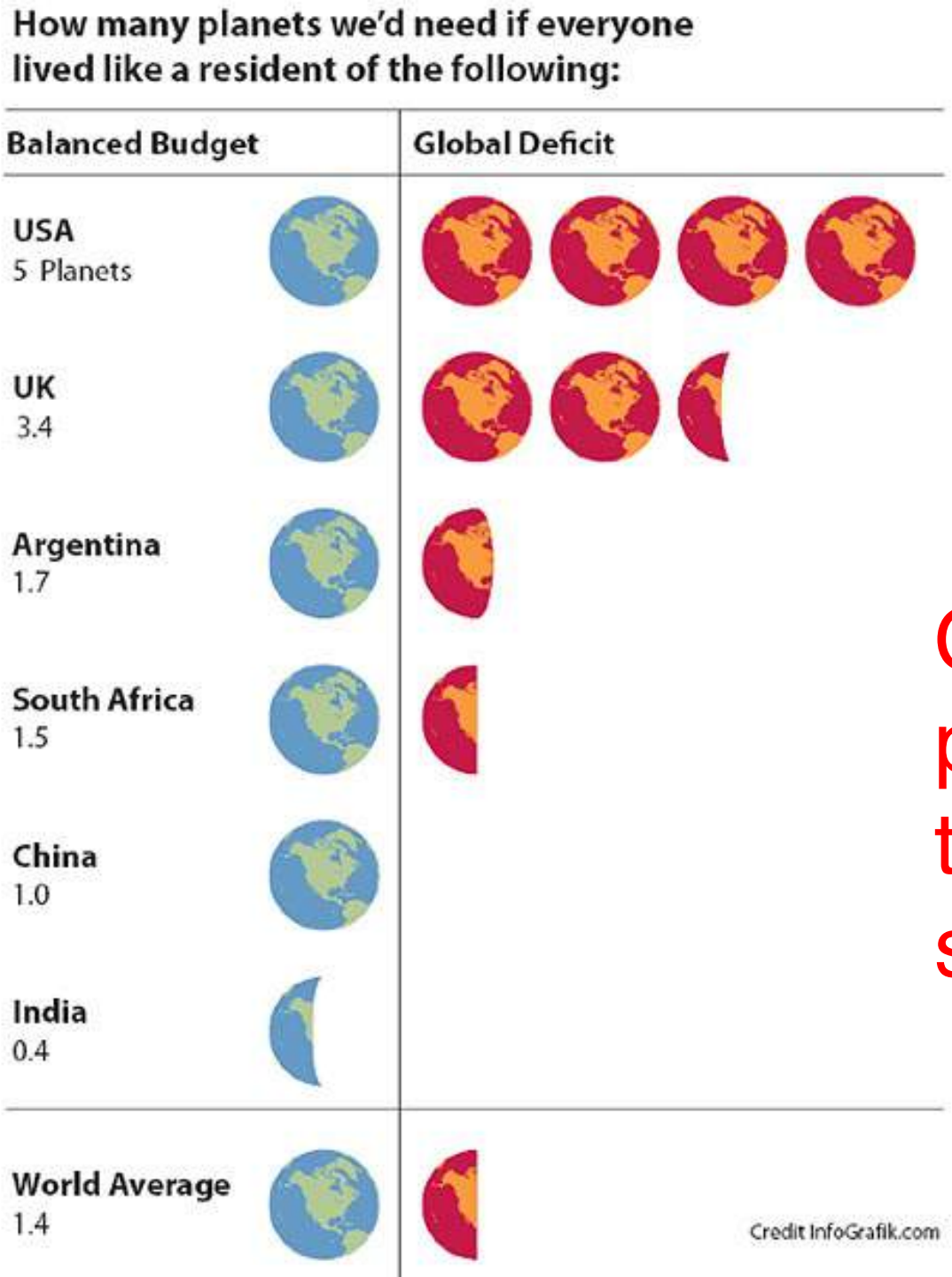
(see Self-Organization)

Global Participatory Platform

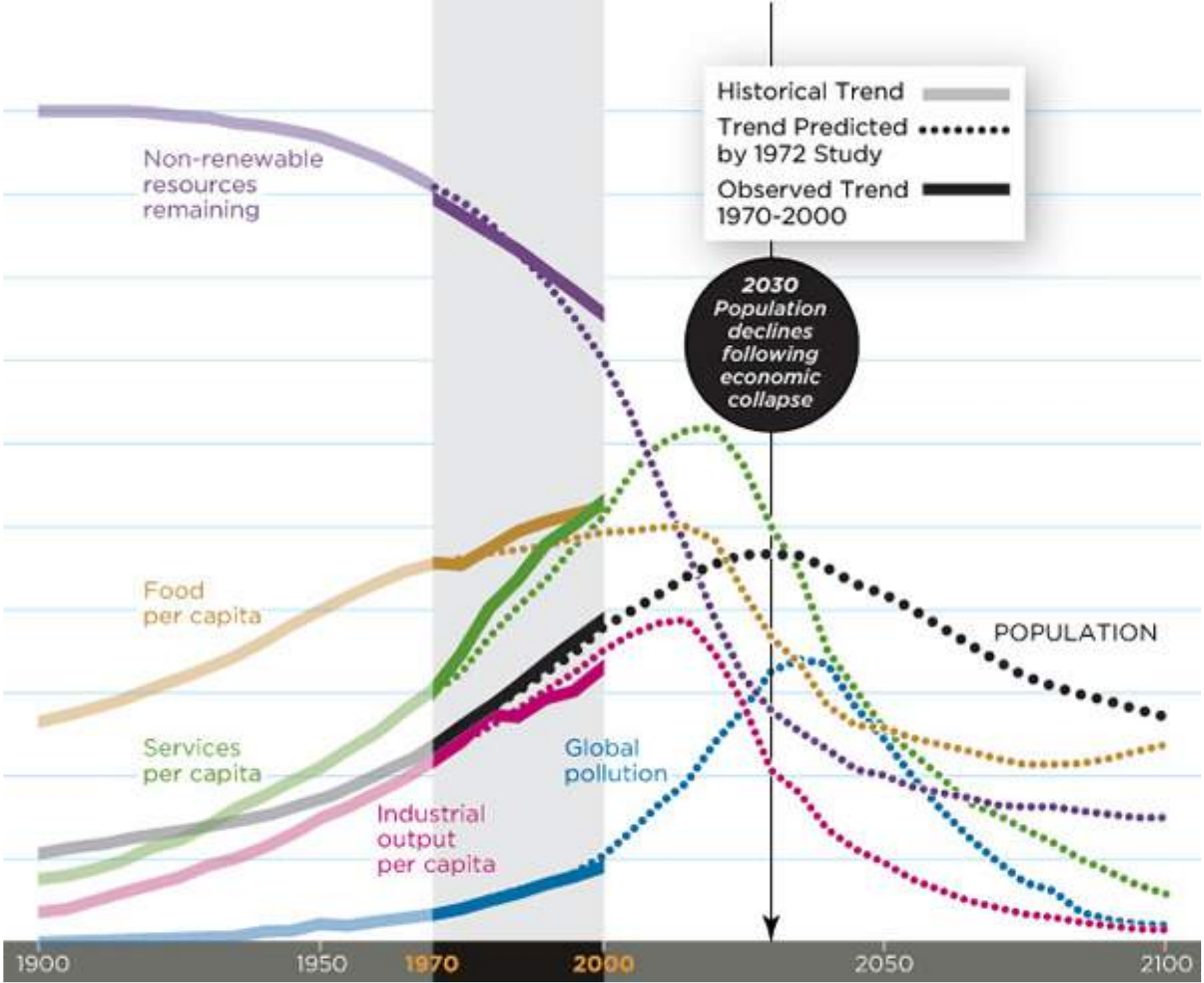
(see Peace Rooms)

Innovation Accelerator

But let’s first talk about
the problems to be solved

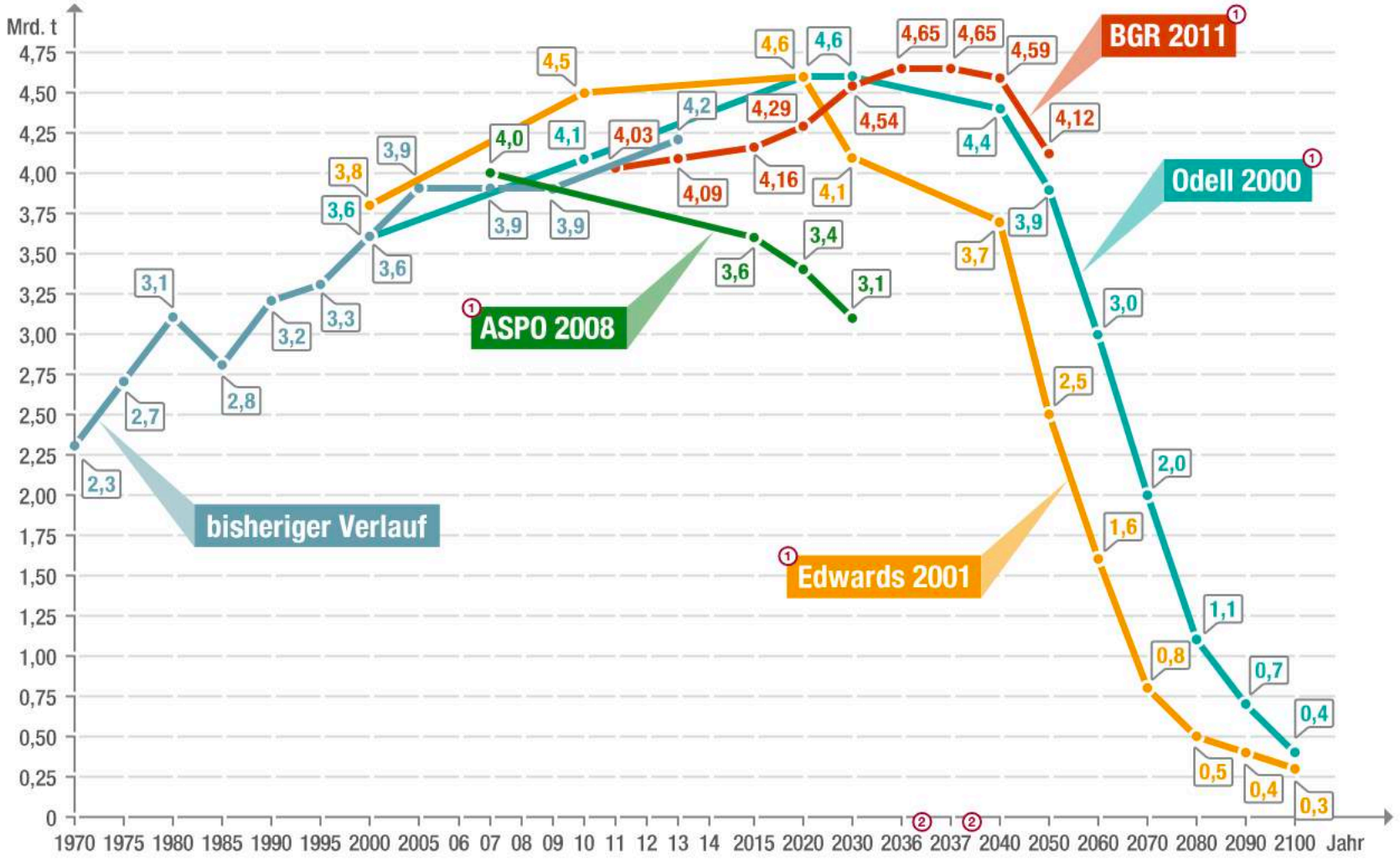


Our main problem is the lack of sustainability

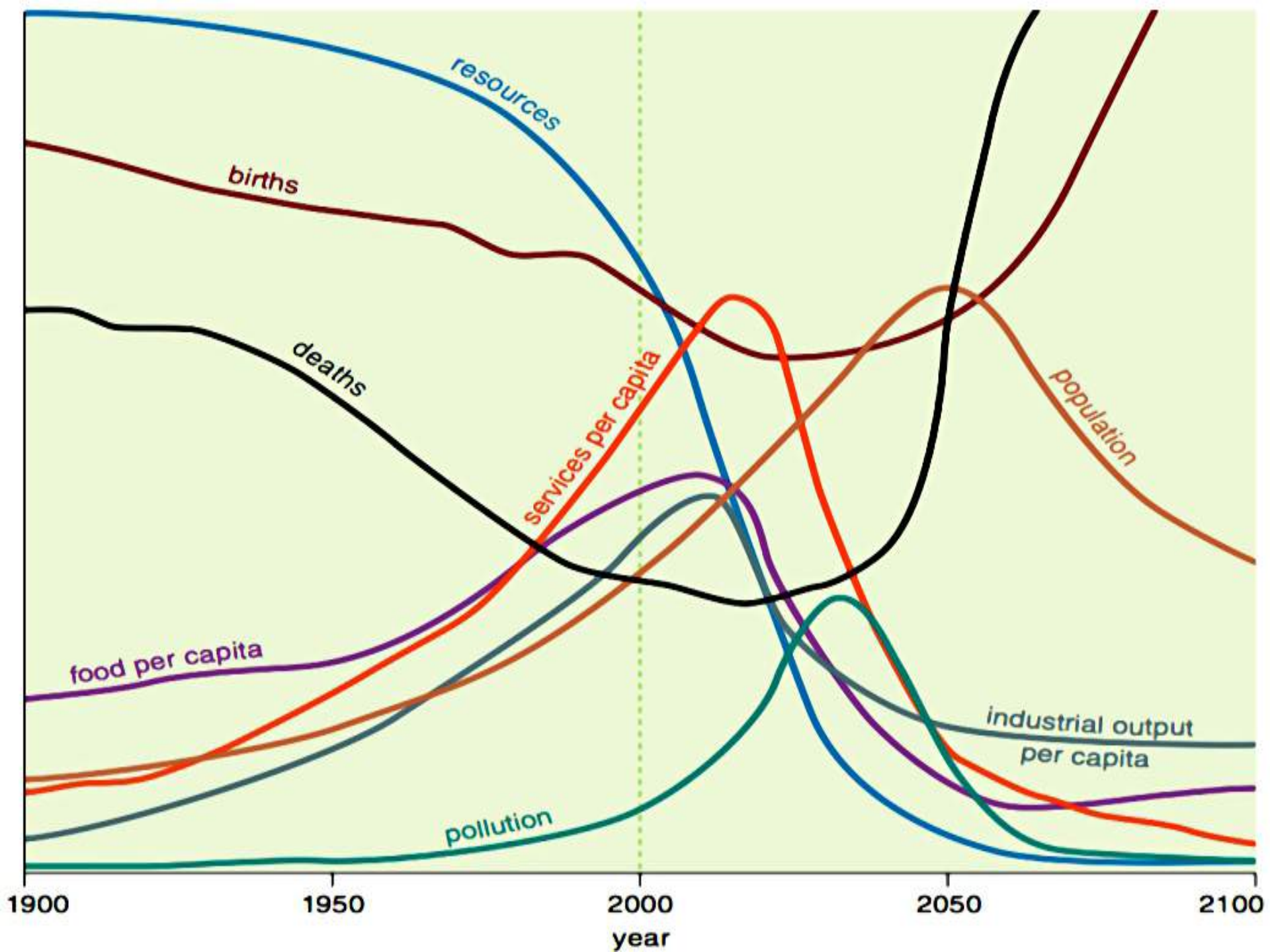

Historical Trend
Trend Predicted by 1972 Study
Observed Trend 1970-2000
2030 Population declines following economic collapse
Non-renewable resources remaining
Food per capita
Services per capita
Industrial output per capita
Global pollution
POPULATION
1900
1950
1970
2000
2050
2100

Peak Oil

Beispiele für prognostizierte Förderverläufe mit Peak Oil, Produktion in Milliarden Tonnen, weltweit 1970 bis 2100



Quelle: BGR: Energiestudie 2014, DERA Rohstoffinformationen 2011, Energierohstoffe 2009


resources
births
deaths
services per capita
population
food per capita
industrial output
per capita
pollution
1900
1950
2000
2050
2100
year

The New Silk Route:
One Belt, One Road Project


APL
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Nations Unies
Conférence sur les Changements Climatiques 2015
COP21/CMP11
Paris, France
SECRETAIRE EXECUTIVE CCNUCC
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Carbon Market Potential

According to a recent *New York Times* article, carbon trading is one of the "fastest-growing specialties in financial services." And companies are scrambling to get a slice of a market now worth well over 100 billion and that could grow to $1 trillion within a decade.

The article, "In London's Financial World, Carbon Trading Is the New Big Thing," goes on: "Carbon will be the world's biggest commodity market, and it could become the world's biggest market over all."

If you doubt that assertion, consider this: Every year, humans generate about 38 billion tons of carbon dioxide.

And that number will continue to grow, as developing nations demand more energy that will likely be produced by coal and other carbon heavy sources of fuel.

As more international governments start to regulate their country's emissions, and as more companies start to voluntarily limit their emissions (as we're seeing in the U.S.), the demand for available carbon credits will skyrocket. And so will their price!

One need only revert to the simple law of supply and demand to see that this industry is going to be huge. If increased demand dictates an increase in price, getting in now could be one of the wisest investment moves you make in the first half of this century.

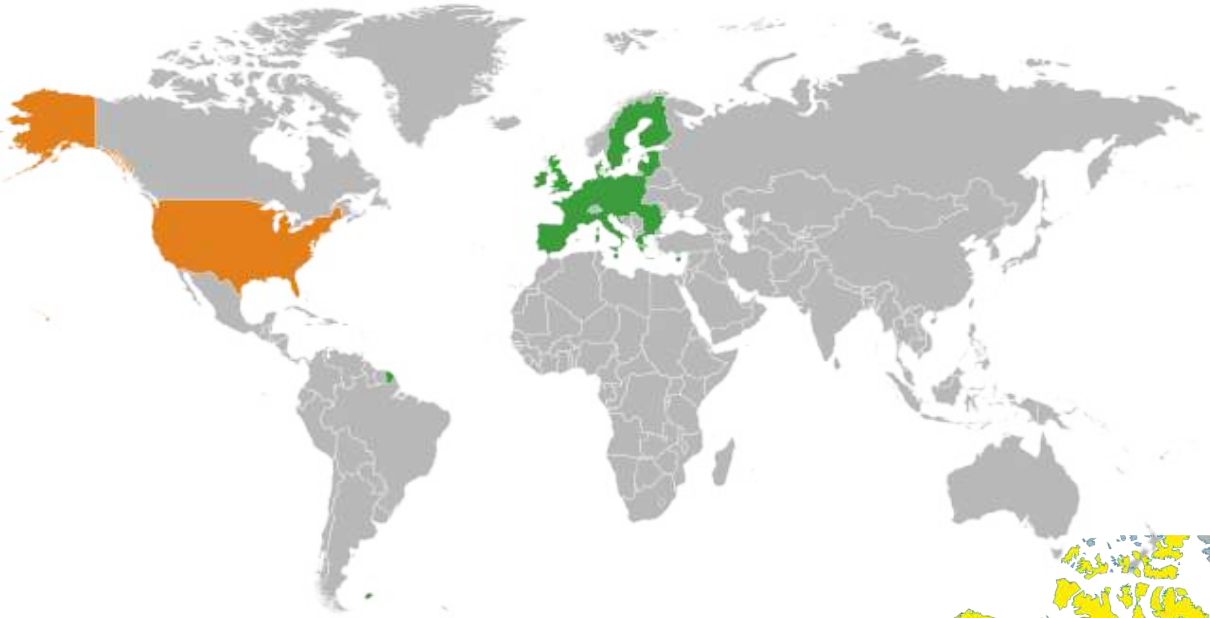
Old Business Models Are Crumbling

- Steel industry
- Car industry
- Oil industry
- Chemical industry
- Pharmaceutical industry
- Agricultural industry
- Energy production
- Financial industry

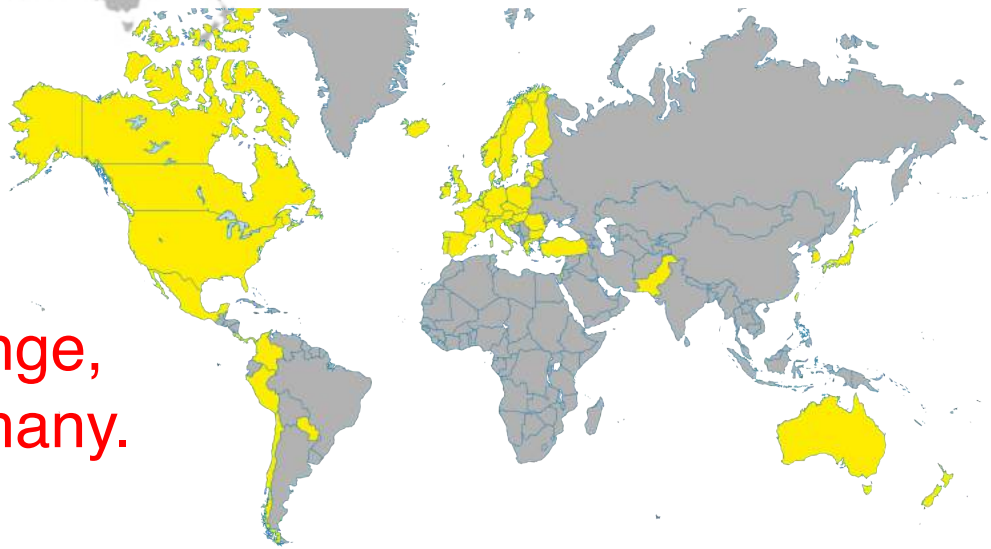
They Do Not Work for Us Anymore

- Peak oil
- Micro plastics
- Agricultural crisis
- Health system crisis
- Sustainability crisis
- Climate change
- Financial crisis

TPP, TTIP, CETA, TISA
Might Cement the Old World Order



Companies could sue Governments,
The People would have to pay.



New IPR laws will probably obstruct creativity and exchange, and benefit few, rather than many.

Learning *to* Die *in the* Anthropocene

REFLECTIONS ON THE END OF A CIVILIZATION

Roy Scranton

"Scranton draws on his experiences in Iraq to confront the grim realities of climate change. The result is a fierce and provocative book."
—Elizabeth Kolbert, author of The Sixth Extinction

F. Hamburg

Een computermodel voor het ondersteunen van euthanasiebeslissingen (E.M. Meijers Reeks)

ISBN: 9789046600207
Aantal Pagina's: 344
Status: Verschenen - bestelbaar - leverbaar
Prijs: € 58.00
Uitgever : Maklu-Uitgevers nv

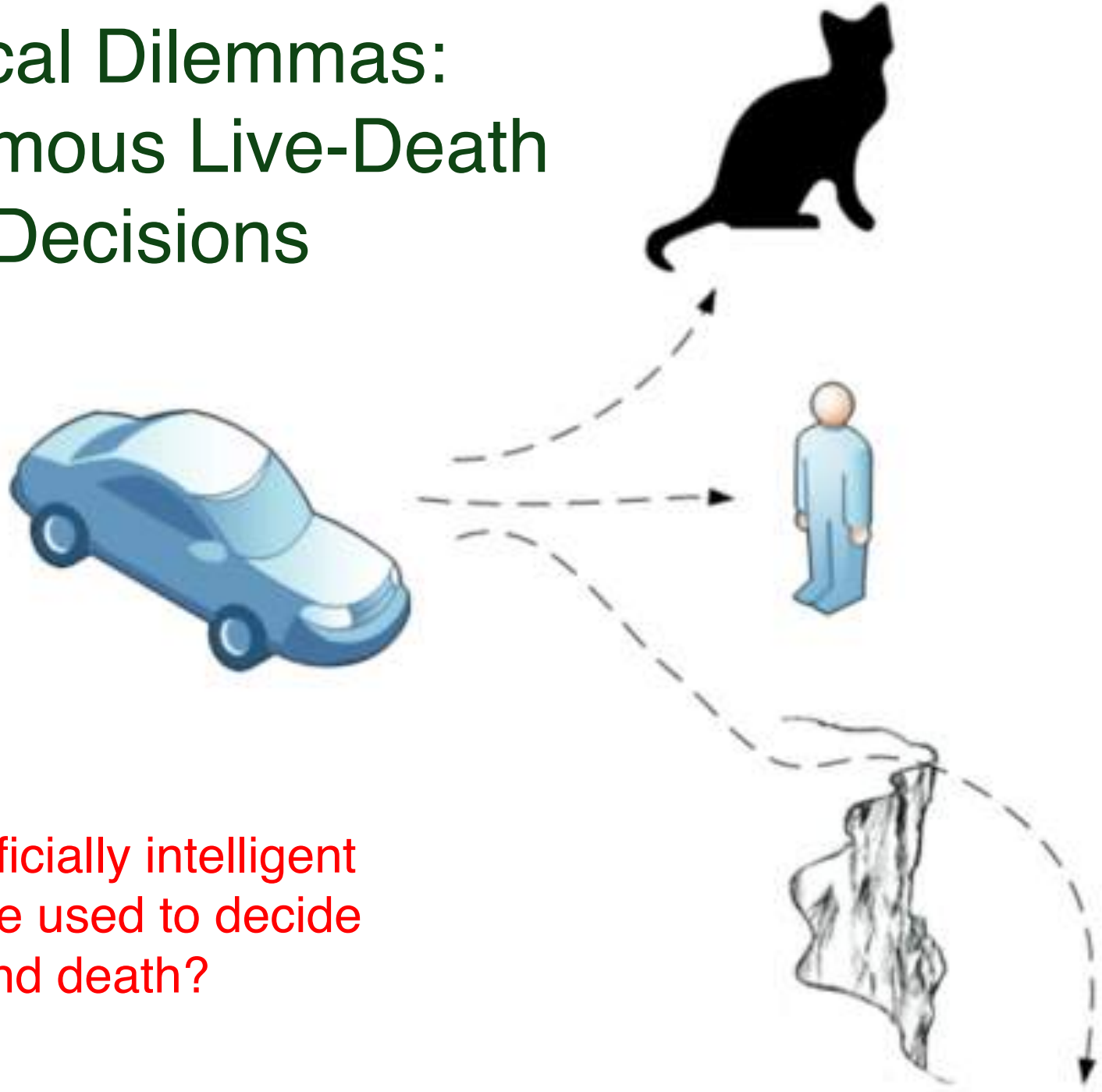
Print-versie Bestel Nu

Over het boek:

In Nederland mogen artsen zonder een scherp criterium beslissen op een verzoek tot euthanasie. In een dergelijke beslispraktijk is het onwaarschijnlijk dat er consistentie bestaat tussen hun beslissingen. Dit proefschrift heeft allereerst ten doel deze inconsistente beslispraktijk aan te tonen. Het proefschrift presenteert voorts een computermodel waarmee de inconsistentie tussen euthanasiebeslissingen in principe teruggedrongen kan worden. Ter onderstreping van het belang van dit model toont de auteur aan dat twee cruciale beslissingen van de Hoge Raad [het Chabot-arrest en het Brongersma-arrest] wezenlijk strijdig zijn met elkaar. Wil men de gesignaleerde inconsistenties volledig en definitief voorkomen, dan zal de bron daarvan [de Wet Toetsing Levensbeëindiging] moeten worden aangepakt. Daarom wordt in het proefschrift het politieke voorstel gedaan om de euthanasiewet in te trekken en tezelfdertijd de hulp bij zelfdoding te decriminaliseren.

Dit is een boek in de Meijers-reeks. De reeks valt onder verantwoordelijkheid van het E.M. Meijers Instituut voor Rechtswetenschappelijk Onderzoek van de Faculteit der Rechtsgeleerdheid van de Universiteit Leiden. Dit promotieonderzoek vond plaats in het kader van het onderzoeksprogramma Multi Level Jurisdiction en stond voorts onder auspiciën van SIKS, de Nederlandse Onderzoeksschool voor Informatie en Kennissystemen.

Ethical Dilemmas: Autonomous Live-Death Decisions



Would artificially intelligent systems be used to decide over life and death?

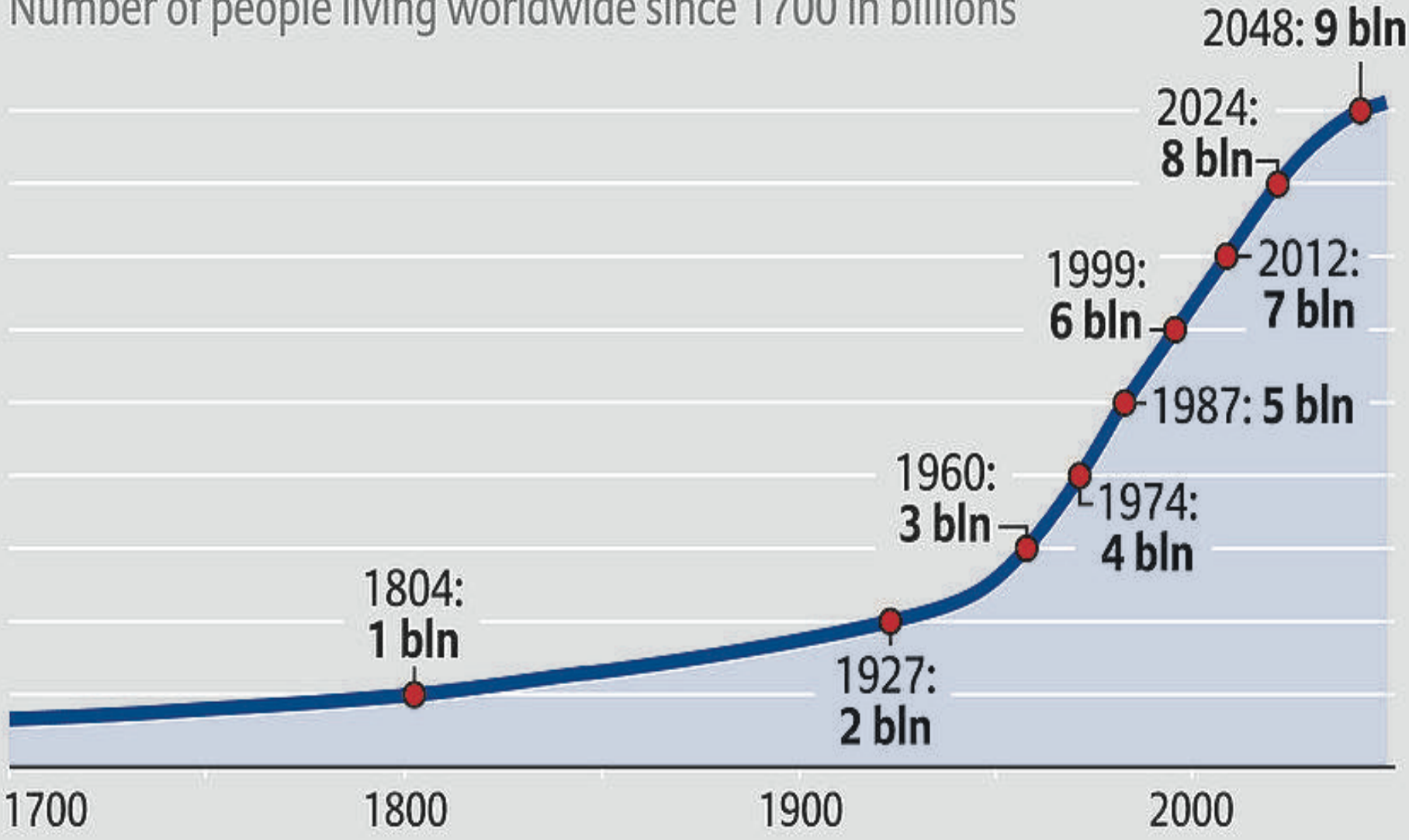
A world based on scarcity,
mass surveillance,
mind control,
submission, more taxes,
punishment and death


STOP
STOP
STOP

POPULATION OF THE EARTH

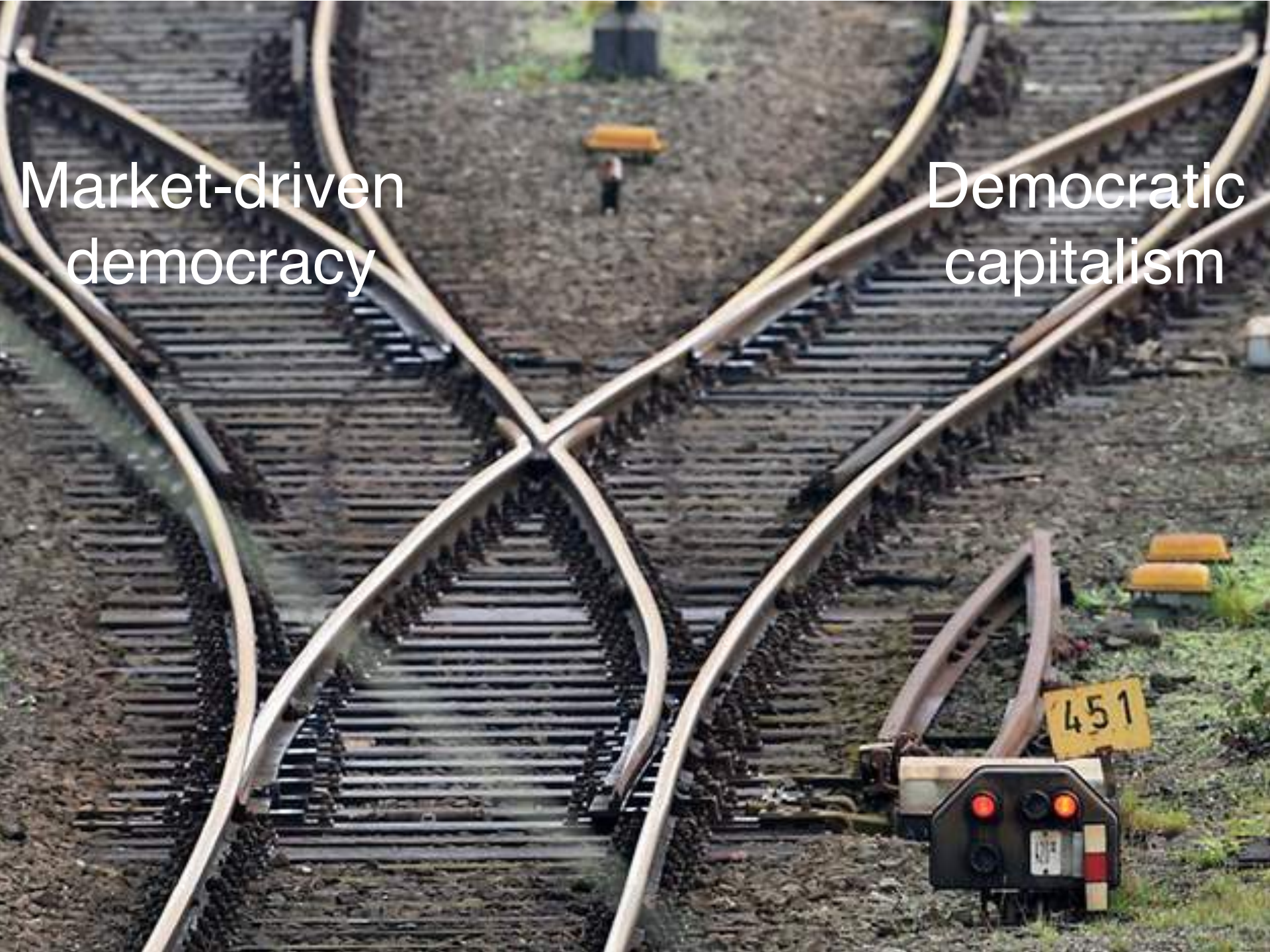
Allianz

Number of people living worldwide since 1700 in billions



Source: United Nations World Population Prospects, Deutsche Stiftung Weltbevölkerung

For further information please visit: www.knowledge.allianz.com


Market-driven
democracy
Democratic
capitalism
451

the Globalist
Rethinking globalization™

Part I: The Moral Duty of the Elites

It is the moral duty of the elite to avert global disaster.

By Dirk Helbing, August 20, 2017

Faced with climate change, financial, economic and spending crisis, mass migration, terrorism, wars and cyber threats, it appears we are very close to global emergency.

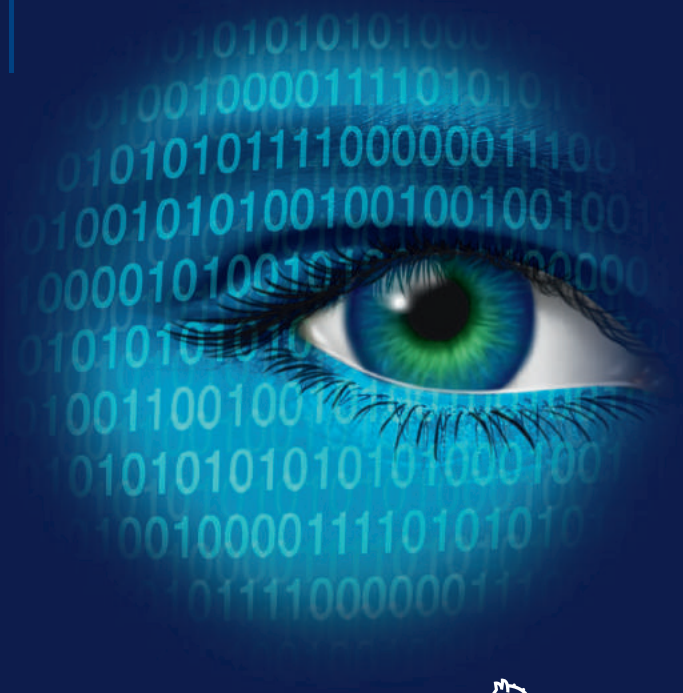
Given this state of affairs, we are running out of time to fix the problems of our planet. Here, we present what should be decided during the UN General Assembly on September 23, 2017 and a reflexive preamble.

We acknowledge your efforts to improve the quality of life. However, these efforts have also caused a further increase in the consumption of resources and energy.

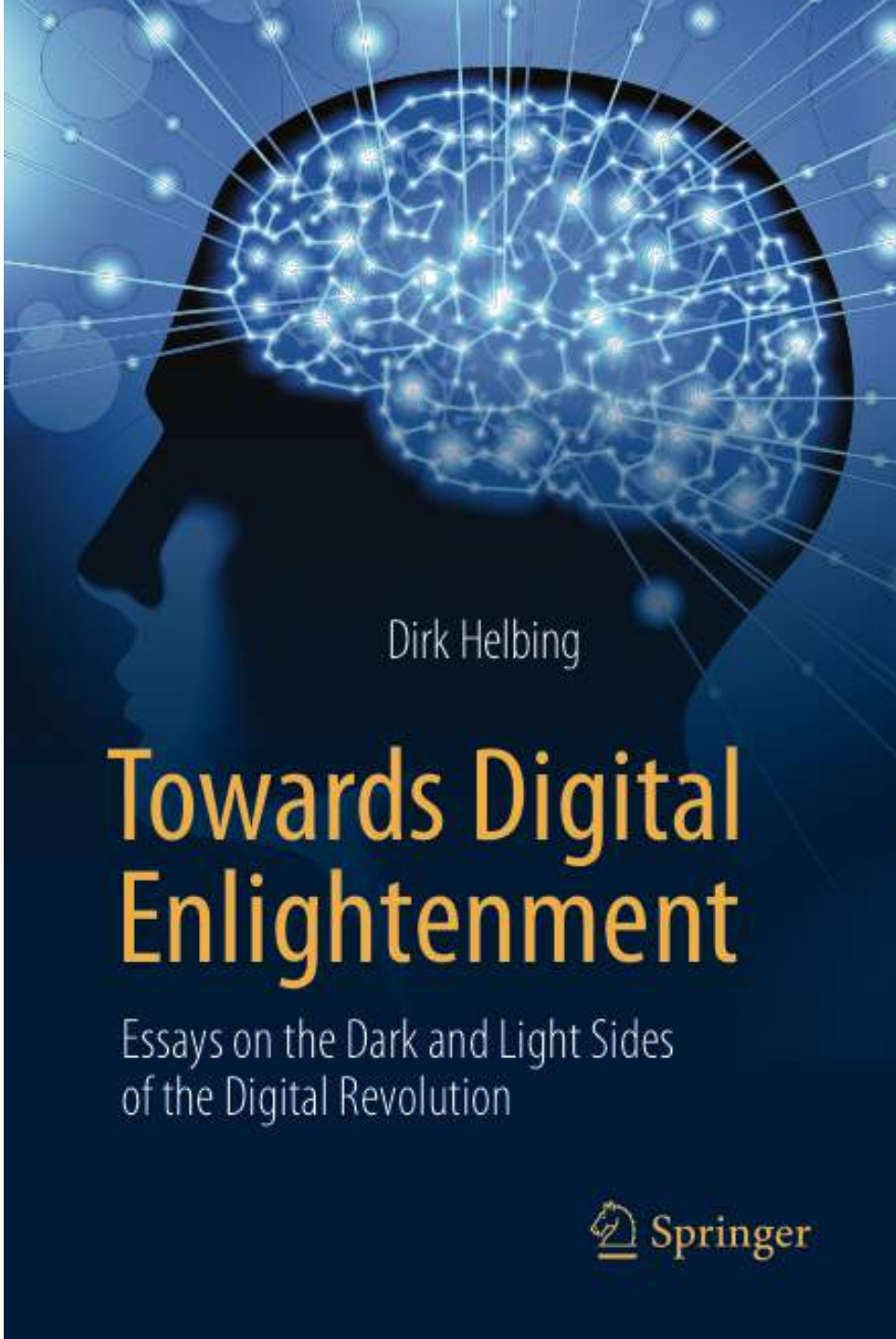
Dirk Helbing

Thinking Ahead

Essays on Big Data, Digital Revolution, and Participatory Market Society



Springer



Dirk Helbing

Towards Digital Enlightenment

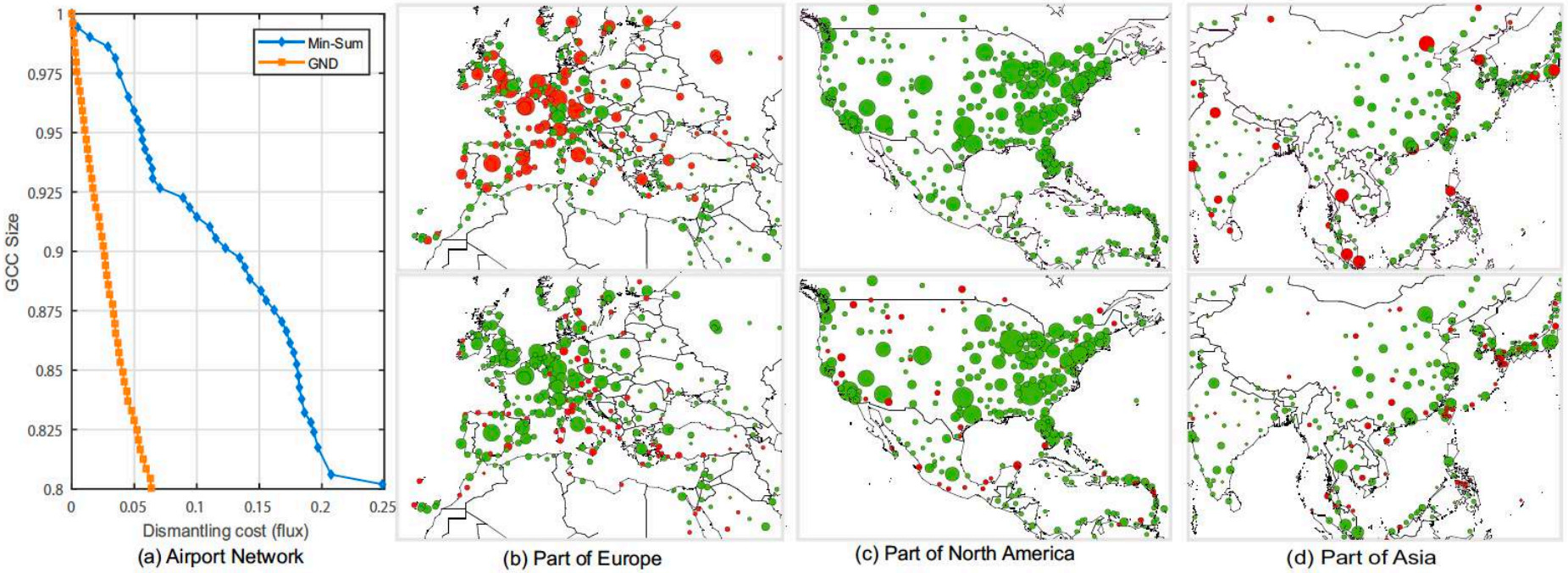
Essays on the Dark and Light Sides of the Digital Revolution

Springer

Resilient systems design and operation


Decentralization,
Modular Design,
Distributed Control

Cutting Down Networks into Functional Subnetworks, e.g. in Case of Epidemics



(a) Airport Network (b) Part of Europe (c) Part of North America (d) Part of Asia

Fig. 5. Comparison of our proposed GND algorithm with the Min-Sum algorithm for the world airport network. The cost of a node w_i in this network is assumed to be given by the total passenger flux of the airport. (a) Setting the target size of the GCC of the network to 80%, the Min-Sum algorithm (23) implies a cost of approximately 25 % of the total passengers. In contrast to the Min-Sum algorithm, our GND method dismantles the network with the cost of only 6 % of the total passengers, which amounting to 19 % less for the same target dismantling size. (b), (c), and (d) visualize the airports that will be closed for a target size of 80% of the GCC size using the Min-Sum algorithm (upper panel) or the GND algorithm (lower panel) in Europe, North America, and Asia, respectively. Closed airports are represented by red dots with the area proportional to the cost.

Generalized Network Dismantling

Xiao-Long Ren[a], Niels Gleinig[b], Dirk Helbing[a], and Nino Antulov-Fantulin[a,2]

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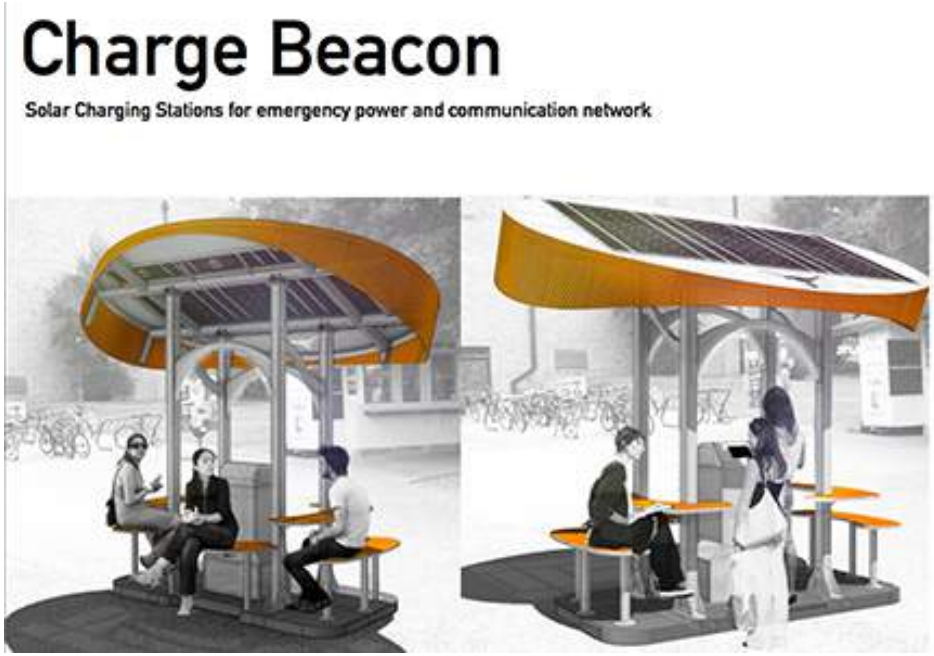
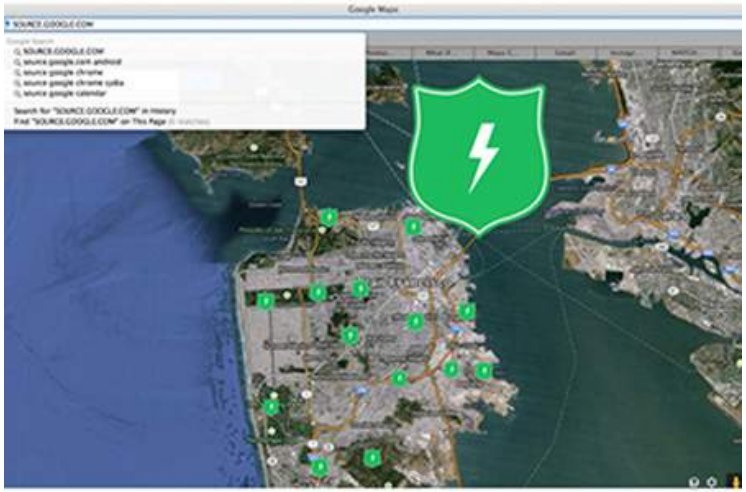
Participatory Disaster Response+Resilience

Helping Hands





amigocloud

If you want to build the future …

- Don’t care what the old industries and elites want
- Establish global peace based on sovereignty and mutual respect
- Release the next wave of technologies for good that has been reserved for war so far

Toward a Global Realignment

by Zbigniew Brzeziński

VOLTAIRE NETWORK | WASHINGTON D. C. (ÉTATS-UNIS) | 17 APRIL 2016

Zbigniew Brzeziński

Zbigniew Brzezinski was the National Security Adviser of President Carter and executive director of the Trilateral Commission. He is a member of the Center for Strategic and International Studies. Among his best known works is *The Grand Chessboard*.

Overcome Blocs, Shared Values Needed

1. Respect
2. Diversity
3. Responsible self-determination
4. Participatory opportunities
5. Self-organization
6. Responsibility
7. Quality and awareness
8. Fairness
9. Protection
10. Resilience
11. Sustainability
12. Compliance

More at futurict.blogspot.com and at www.ssrn.com

Max Planck & John Brockman on Innovation

"Science advances by discovering new things and developing new ideas. Few truly new ideas are developed without abandoning old ones first. As theoretical physicist Max Planck (1858-1947) noted, "A new scientific truth does not triumph by convincing its opponents and making them see the light, but rather because its opponents eventually die, and a new generation grows up that is familiar with it." In other words, science advances by a series of funerals.

Max Planck
(1858-1947)

Why wait that long?

… We no longer have the luxury to wait for funerals."

Why Our Innovation System Is Failing - and How to Change This

by Dirk Helbing

Our innovation system has terribly failed. It is well designed to support gradual improvements of our knowledge and technologies. But it does not support disruptive innovations well, which would create new qualities and functionalities, or question the basis of our established knowledge and routines. Moreover, our knowledge does not keep up anymore with the pace at which our world changes, and solutions to new problems often come with serious delays. Therefore, we need to re-invent innovation. In particularly, we must learn to create systems embracing collective intelligence that surpasses the intelligence of even the brightest individual and of powerful supercomputing solutions. This cannot be based on top-down nor majority decisions. Diversity is absolutely crucial for collective intelligence to work…

The innovation crisis

Eur. Phys. J. Special Topics **195**, 101–136 (2011)

DOI: 10.1140/epjst/e2011-01403-6

THE EUROPEAN PHYSICAL JOURNAL SPECIAL TOPICS

Review

How to create an innovation accelerator

D. Helbing[1,2a] and S. Balietti[1]

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Received 16 October 2010 / Received in final form 21 March 2011
Published online xx April 2011

Abstract. The purpose of this White Paper of the EU Support Action "Visioneer" (see `www.visioneer.ethz.ch`) is to address the following goals:

1. Identify new ways of publishing, evaluating, and reporting scientific progress.
2. Promote ICT solutions to increase the awareness of new emerging trends.
3. Invent tools to enhance Europe's innovation potential.
4. Develop new strategies to support a sustainable technological development.
5. Lay the foundations for new ways to reach societal benefits and respond to industrial needs using ICT.

Eur. Phys. J. Special Topics **214**, 183–214 (2012)

DOI: 10.1140/epjst/e2012-01692-1

THE EUROPEAN PHYSICAL JOURNAL SPECIAL TOPICS

Regular Article

Theoretical and technological building blocks for an innovation accelerator

F. van Harmelen[1,a], G. Kampis[2,3], K. Börner[4], P. van den Besselaar[5], E. Schultes[6,7], C. Goble[8], P. Groth[9], B. Mons[7,10,11,12], S. Anderson[13], S. Decker[14], C. Hayes[14], T. Buecheler[15], and D. Helbing[16]

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Combinatorial innovation

Combinatorial Innovation, Co-Evolution (needs Freedom)

ETH zürich

Information, Innovation, Production and Service Ecosystem

co-epetition, co-learning, co-innovation, and co-creation

Combinatorial innovation

Empowerment:
Create New Opportunities for Everyone

If set up well, enabling users, customers, citizens will lead to better services, better products, better businesses, better neighborhoods, smarter cities, smarter societies …

Openening up:

open source, open access, open data, open science, open innovation, hackathons, makers spaces, citizen science, gov labs, creative commons…

Benefits of Opening Up

- More capacity
- More speed
- More impact
- Acclerate innovation & applications
- Mobilize collective intelligence
- Unleash local knowledge
- Tap into formerly unused resources

Project recreates cities in rich 3D from images harvested online

Beyond Wikipedia
and Open Streetmap

Posted May 19, 2017 by ***Devin Coldewey***

People are taking photos and videos all over major cities, all the time, from every angle. Theoretically, with enough of them, you could map every street and building — wait, did I say theoretically? I meant in practice, as the VarCity project has demonstrated with Zurich, Switzerland.

The European Physical Journal volume 214 · November II · 2012

EPJ ST

Recognized by European Physical Society

Special Topics

D. Helbing and A. Carbone (Eds.)

Participatory Science and Computing for Our Complex World

FuturICT is a visionary project that aims at creating participatory science and computing to explore, understand and manage our complex world in a more resilient and sustainable way (see www.futurict.eu for details)

edp sciences Springer

Eur. Phys. J. Special Topics **214**, 109–152 (2012)

DOI: 10.1140/epjst/e2012-01690-3

THE EUROPEAN PHYSICAL JOURNAL SPECIAL TOPICS

Regular Article

Towards a global participatory platform

Democratising open data, complexity science and collective intelligence

S. Buckingham Shum[1], K. Aberer[2], A. Schmidt[3], S. Bishop[4], P. Lukowicz[5], S. Anderson[6], Y. Charalabidis[7], J. Domingue[1], S. de Freitas[8], I. Dunwell[8], B. Edmonds[9], F. Grey[10], M. Haklay[11], M. Jelasity[12], A. Karpištšenko[13], J. Kohlhammer[14], J. Lewis[15], J. Pitt[16], R. Sumner[17], and D. Helbing[18]

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the Globalist
Rethinking globalization™

We Need Peace Rooms, Not War Rooms

A proposal for the pro-social use of big data intelligence

By Dirk Helbing and Peter Seele, September 21, 2017

Credit: richelieu umel
www.flickr.com

Digital technology has reached a supremacy and momentum hardly comparable with previous inventions. Even earlier game changers in the history of man such as the industrialization appear less impactful compared to the digital revolution.

This disruptive potential of digital technology has been widely acknowledged. Both utopian and dystopian futures have been discussed many times, under keywords such as big data, artificial intelligence, Internet of Things and quantum computing.

It often gets forgotten, however, the even more disruptive potential today lies in the political, economic, social and cultural inequalities between digital super powers and the rest of society.

Correspondence

More data needed on scientific misconduct

Donald Kornfeld and Sandra Titus contend that implementing known remedies for scientific misconduct is better than calling for further research (*Nature* **548,** 31; 2017). I disagree: we need research to determine whether such measures are working.

Just as the presence of more police officers leads to more arrests, the expansion of efforts to counter scientific misconduct is exposing more cases. Institutions already implement punitive measures, operate offices for research integrity and run ombudsman systems. Journals retract papers more frequently than they used to, and scandalous cases are widely publicized online (see F. Hesselmann *et al. Curr. Sociol.* **65,** 814–845; 2017). Prevention tactics include setting up university commissions for good scientific practice, and introducing regulations for responsible research.

Still, the detection of more cases will stimulate calls for ever-harsher countermeasures. However, criminological research has shown that such law-and-order policies have devastating effects — for example, by discriminating against people who are already disadvantaged (see M. Cavadino and J. Dignan *The Penal System*; Sage, 2013). Although such policies have political appeal, they can be ineffective and unjust.

What is needed is a measured response to the problem of scientific misconduct, which can stem only from more research.

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NOAA's strategy for unified modelling

As Earth's systems change at an unprecedented rate, it is becoming harder to model seemingly unconnected phenomena such as atmospheric processes and coastal-zone economies. Tight budget constraints make the situation worse. The US National Oceanic and Atmospheric Administration (NOAA) has therefore developed a unified modelling strategy that will work for the entire agency.

Unified modelling provides a common framework for interoperability across disciplines (even if they are using different information) by applying the appropriate number of models to a similar set of tasks and requirements (see go.nature.com/2vmzhqo). For example, the modelling enables seamless integration of weather-to-climate predictions — crucial for modernizing the US National Weather Service's operational models. It also allows the projection of productivities for fisheries under different climate-change scenarios. The breadth of this applicability, from research to operations, will benefit NOAA's partners and the public.

Our unified approach will also optimize modelling costs and resources. It will help to achieve a critical integrated mass for improving the NOAA modelling enterprise as it moves towards prediction of the full Earth system.

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Hendrik L. Tolman *NOAA National Weather Service, Silver Spring, Maryland, USA.*
Katelyn Robinson *NOAA Office of Oceanic and Atmospheric Research, Silver Spring, Maryland, USA.*
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Turn war rooms into peace rooms

The resurgence of terms such as 'cold war' and 'clash of cultures' in the media reflects a dangerous social dynamic that could drive societies to the brink of recession, civil war and societal collapse. We suggest that a more modern, open and scientific strategy might help to prevent history from repeating itself.

Today's strategic 'war rooms' use big data, artificial intelligence and cognitive environments to manage conflicts and crises or run big business. Recasting them as 'peace rooms' would be better in tomorrow's world — they would then be more democratic and would operate with greater transparency for legitimacy. This would help to build trust and expose flaws in the system.

Peace rooms could be run by interdisciplinary, international scientific teams to integrate the best available knowledge. They would rely on input from multiple stakeholders — including cities, civil society, non-governmental organizations, citizen scientists and crowdsourcing — to find solutions that work for as many people as possible. The rooms would be supervised by ethics experts to ensure that innovative outcomes are used responsibly.

This is in line with approaches such as democratic capitalism and digital democracy (see also go.nature.com/2vm2gua and D. Helbing and E. Pournaras *Nature* **527,** 33–34; 2015). Peace rooms could change how strategic decisions are made in crisis situations, guiding us from uncontrollable conflict to the sustainable development that the world needs now.

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D.H. declares competing financial interests; see go.nature.com/2xxkbdi.

Conferencing in 140 characters

The use of Twitter hashtags to promote conferences and share presented content is on the rise — an example is the World Seabird Twitter conference, now in its third year. Twitter and other social-media platforms can boost outreach, engagement and peer-to-peer networking beyond conventional conferencing (see also S. D. Silberberg *et al. Nature* **548,** 153–154; 2017).

Twitter accounts that rotate their curators, such as Biotweeps (@biotweeps), are improving science communication (see go.nature.com/2h2wdpu). In June, Biotweeps hosted its first annual conference, featuring 60 presenters from 12 countries covering a range of biological topics. They had just 15–30 minutes to present their tweets. Forced to be creative by the medium's limit of 140 characters, many used GIF images and infographics.

Conference tweets were collected by the hashtag #BTCon17. More than 1,200 people responded worldwide (with a theoretical reach of some 22 million followers). By contrast, 573 participants tweeted at an international urology conference that was promoted on social media (S. E. Wilkinson *et al. BJU Int.* **115,** 839–846; 2015). According to a hashtag report (talkwalker.com), the Biotweeps conference resulted in 9,500 engagements with conference tweets.

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Katherine James *Newcastle University, UK.*
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CONTRIBUTIONS

Correspondence may be submitted to **correspondence@nature.com** after consulting the author guidelines at **http://go.nature.com/cmchno**. Alternatively, readers may comment online: **www.nature.com/nature**.

The New Concept of Peace Rooms

As compared to a war room setting, a “peace room” is characterized by a number of additional features such as: a higher degree of transparency (to reduce possible flaws and increase trust), a democratic framework of operation (for legitimacy), the use by interdisciplinary teams meeting international scientific standards (to achieve the integration of the best knowledge available), the supervision by ethical experts (to ensure responsible use and innovation), a multi-stakeholder and multi-perspective approach (to find solutions that work for everyone – as much as this is possible), and, in order to increase problem solving capacity, participatory opportunities for civil society (by means of NGOs, citizen science, and/or crowd sourcing).

Thinking Ahead - Essays on Big Data, Digital Revolution, and Participatory Market Society pp 115-176 | Cite as

Big Data, Privacy, and Trusted Web: What Needs to Be Done

Authors | Authors and affiliations

Dirk Helbing

Chapter
First Online: 11 April 2015

Abstract

This perspective paper discusses challenges and risks of the information age, and the implications for the information and communication technologies that need to be built and operated. It addresses ethical and policy issues related with Big Data and how procedures for privacy-preserving data analyses can be established. It further proposes a concept for a future, self-organizing and trusted Web and discusses recommended legal regulations as well as the infrastructure and institutions needed.

Keywords

Recommender System | Personal Data | Private Data | Legal Regulation | Identity Theft

These keywords were added by machine and not by the authors. This process is experimental and the keywords may be updated as the learning algorithm improves.

Machine learning for autonomous privacy preservation in participatory sensing and smart cities

Candidate: Stefano Bennati
Supervisor: Prof. Dirk Helbing, ETH Zurich
Co-supervisor: Prof. Catholijn M. Jonker, TU Delft

18 June 2018

Informational Self-Determination

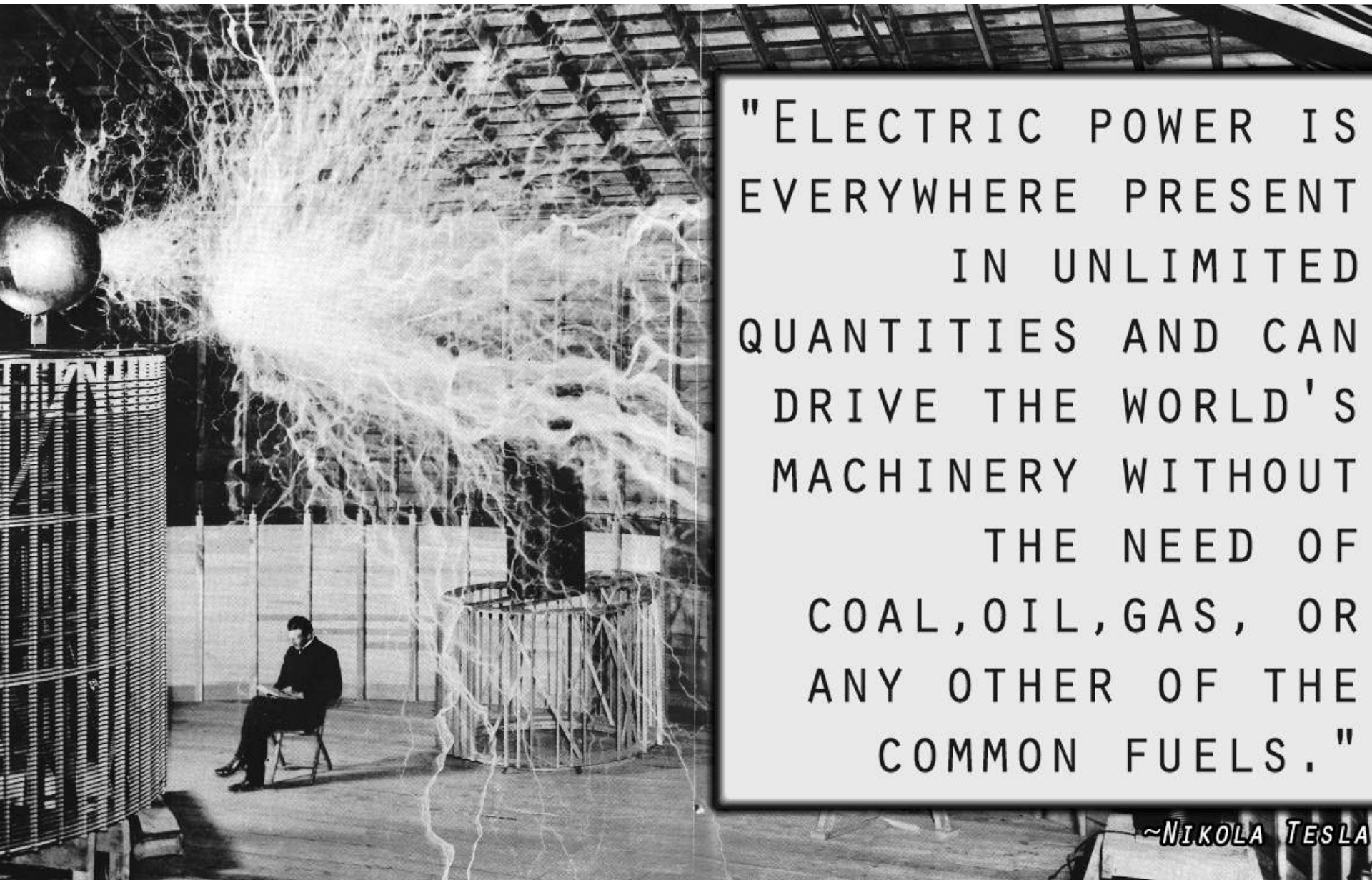
1. Send (a copy of) all personal data to a personal data mailbox
2. Require legally that personal data can only be used with the informed consent of individuals
3. Create a public platform that allows individuals to determine who is allowed to use what kind of data for what period of time and purpose (and what amount of money)
4. Build AI-based digital assistants that help people to easily administer personal data according to their preferences
5. Allow governments and scientists to run statistics on data
6. Report data use transparently to data mailbox

Google celebrates one year of open sourcing machine learning framework TensorFlow

Tesla Goes Open Source: Elon Musk Releases Patents To 'Good Faith' Use

+ Comment Now + Follow Comments

Nikola Tesla



John G. Trump

From Wikipedia, the free encyclopedia

Trump Family Portrait, from left to right: Fred, Frederick, Elizabeth, Elizabeth Christ, and **John**, 1918

During 1942, Trump became Secretary of the Microwave Committee, a sub-committee of the NDRC. The director of the Microwave Committee was Alfred Lee Loomis, the millionaire physicist, who decided to create a laboratory. He selected a site for it, chose a suitably discreet and ambiguous name for it and funded the construction, until the Federal administration was established. The new institution was the MIT Radiation Laboratory, or the "Rad Lab". The British were also researching radar, which they termed Radio Direction Finder (RDF), and had started much earlier. Their Tizard Mission to the US showed how much more sophisticated they were with some of the technologies, particularly the magnetron. The US decided to send a team to Britain to help coordinate the efforts of the two Allies. The unit was known as the "British Branch of the Radiation Laboratory" (BBRL) and operated as a department of Britain's Telecommunications Research Establishment (TRE) at Malvern, in Worcestershire. In 1943, as the technical aide in Division 14 of the NDRC, Trump reviewed and analyzed the papers of Dr. Nikola Tesla when Dr. Tesla died in a New York City hotel. The research was completed on behalf of the Alien property Custodian office in Washington DC. From February 1944 to the end of the war in Europe, Trump was the Director of the BBRL.[7] During this time, Trump also served in the Advisory Specialist Group on Radar, advising USAAF General Carl Spaatz on navigational radar, precision-bombing radar, and also defenses against the German radars found in their night-fighters and in their flak units. The systems included: Gee, Oboe, LORAN, H2X, MEW & SCR-584. Trump worked with all the most important British radar experts, including Sir Robert Watson-Watt, A.P. Rowe and Bernard Lovell. At the end of the war, Trump also had interviews with Germany's main radar technicians. Trump received recognition for his war-work from both the United States and the United Kingdom.[*citation needed*]

CIA releases 13m pages of declassified documents online

18 January 2017 | Share

The documents include records of UFO sightings

See also Trump's Space Force

Reciprocity:

differentiated access allows for maximum security and competitive advantages, while being open and fair:

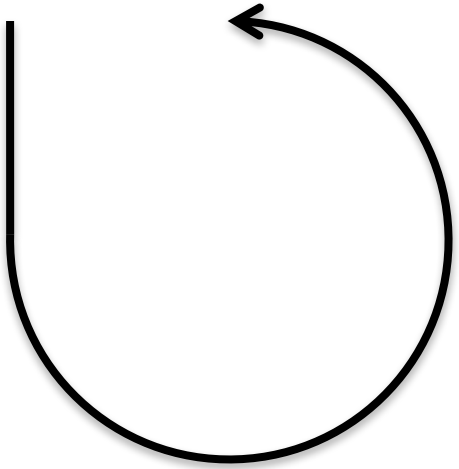
Reputation-, qualification-, and merit-based mechanisms

MANAGING COMPLEX SYSTEMS

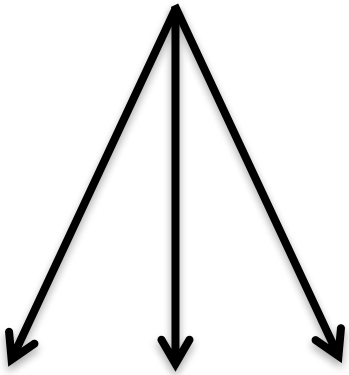
Cause and Effect in Networked Systems

Intended effect

Side effect



Feedback effect

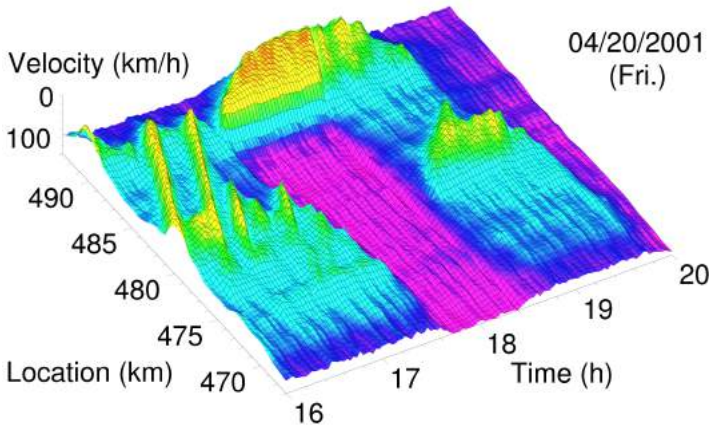


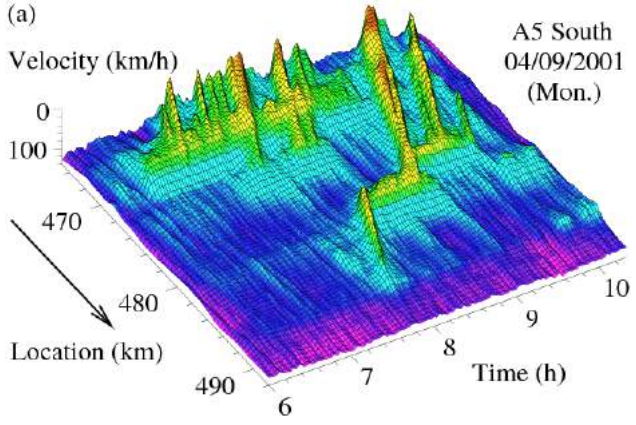
Cascade effect

Traffic As A Complex System

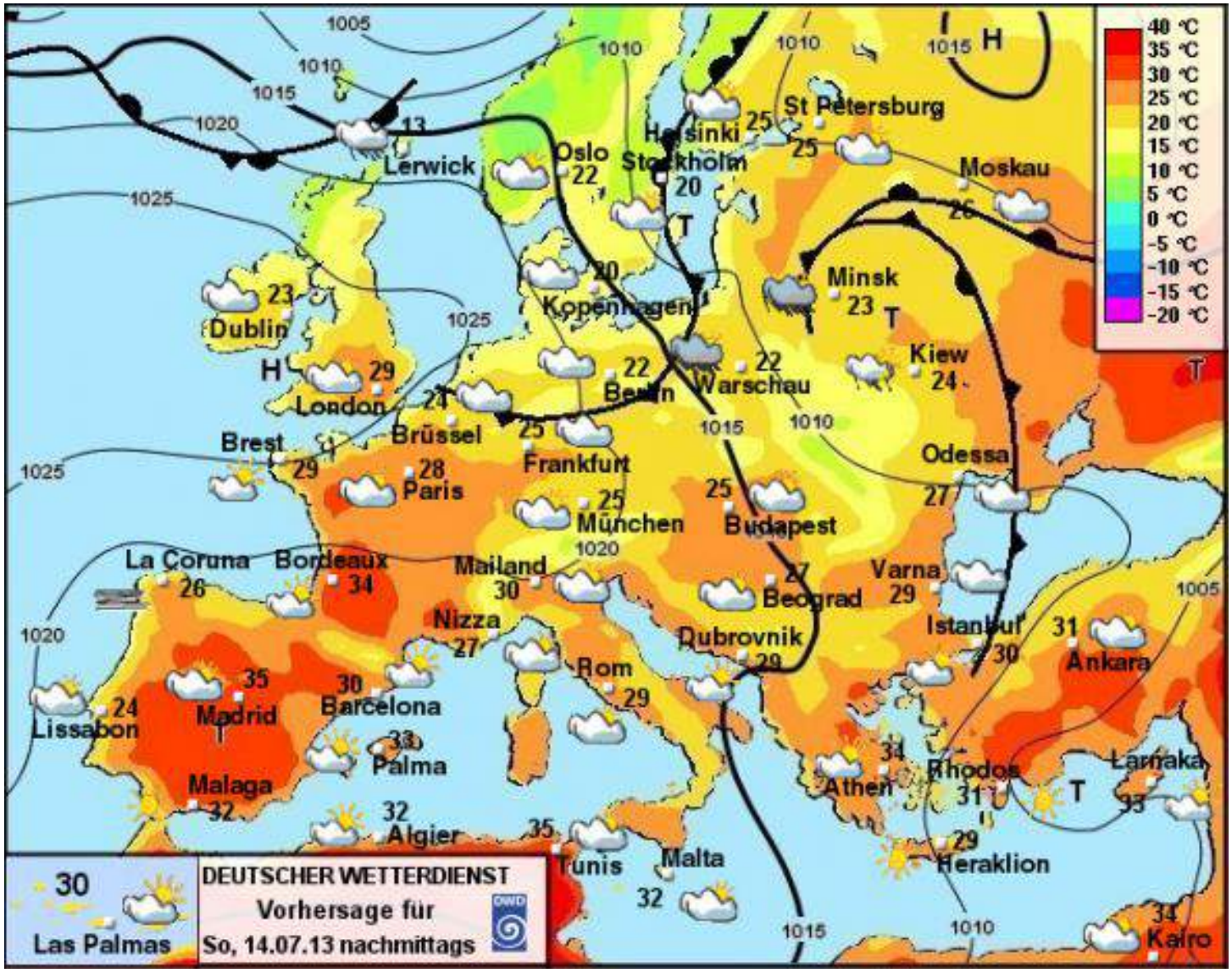
- A car is a complicated system

- Traffic flows, involving the interaction of many cars, constitute a complex dynamical system





Limits of Predictability



The Illusion of Control

Can we understand
and manage
complex systems
and, if yes, how?

Traffic Physics

The European Physical Journal B

A selection of articles by Dirk Helbing

An Analytical Theory of Traffic Flow

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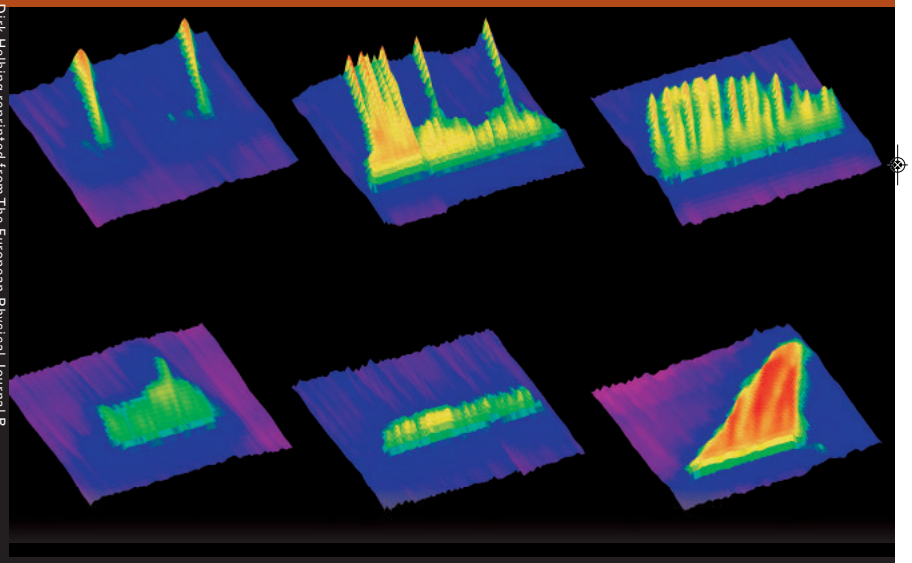
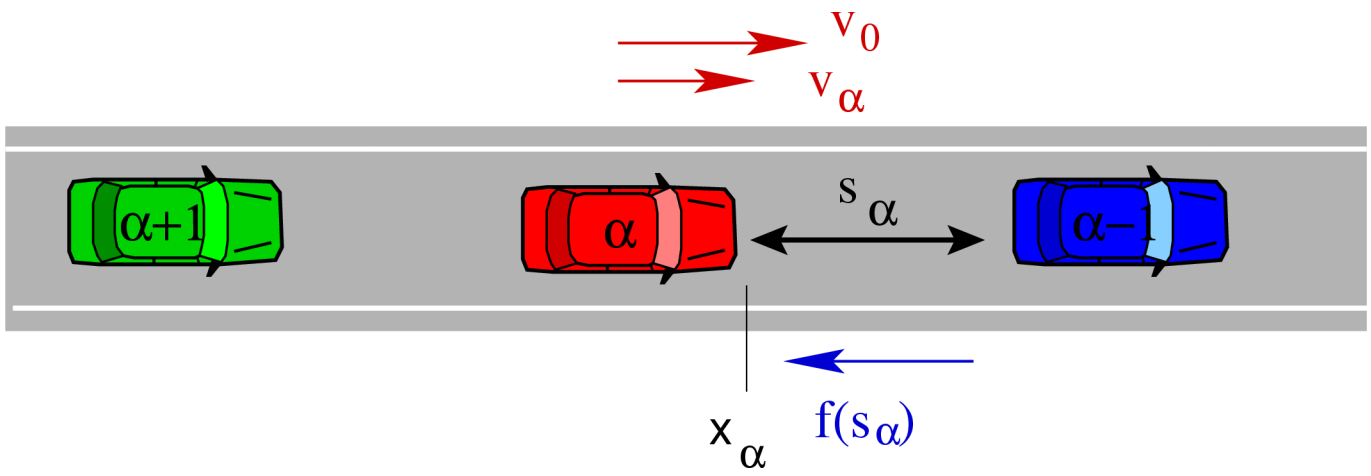


EDP SCIENCES
Società Italiana di Fisica
Springer

Intelligent Driver Model (IDM)



- Equations of motion:

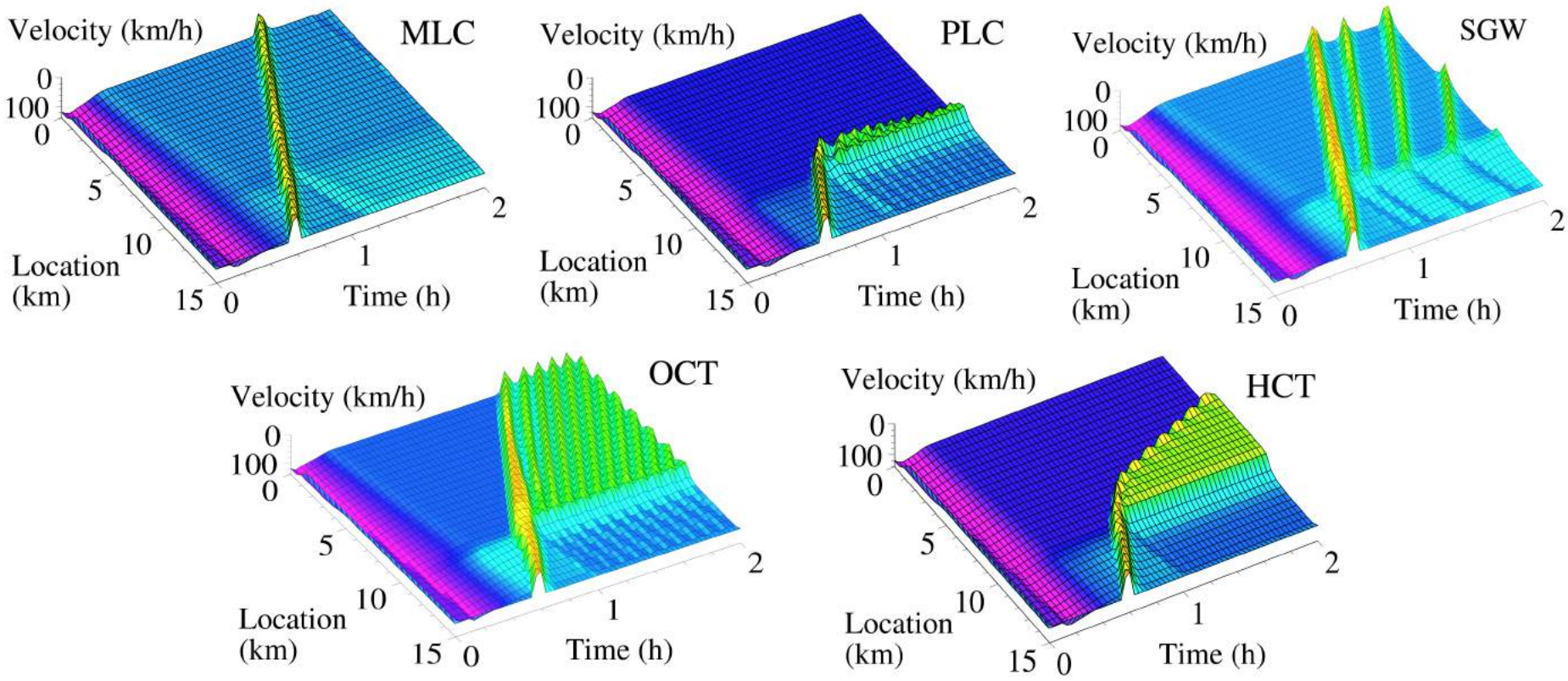
$$\dot{x}_\alpha = v_\alpha,$$

$$\dot{v}_\alpha = a\left[\underbrace{1-\left(\frac{v_\alpha}{v_0}\right)^\delta}_{\text{Beschleunigung}} - \underbrace{\left(\frac{s^*(v_\alpha,\Delta v_\alpha)}{s_\alpha}\right)^2}_{\text{Bremsverzögerung}}\right]$$

- Dynamic desired distance

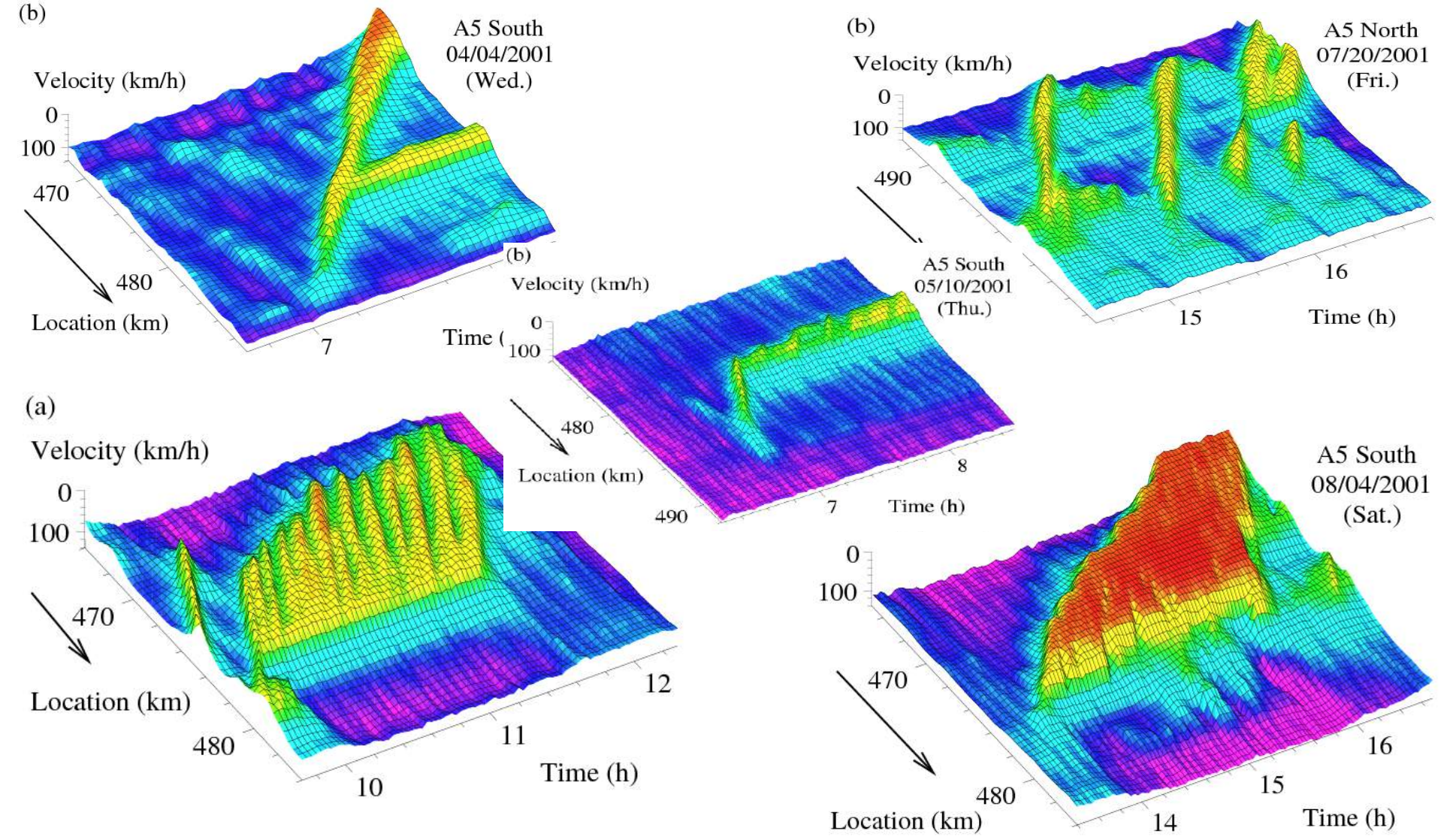
$$s^*(v,\Delta v) = \underbrace{s_0}_{\substack{\text{Mindest-}\\ \text{abstand}}} + \underbrace{vT}_{\substack{\text{“Sicherheits”-}\\ \text{abstand}}} + \underbrace{\frac{v\Delta v}{2\sqrt{ab}}}_{\substack{\text{dynamischer}\\ \text{Teil}}}$$

Theoretically Predicted Elementary Traffic Patterns



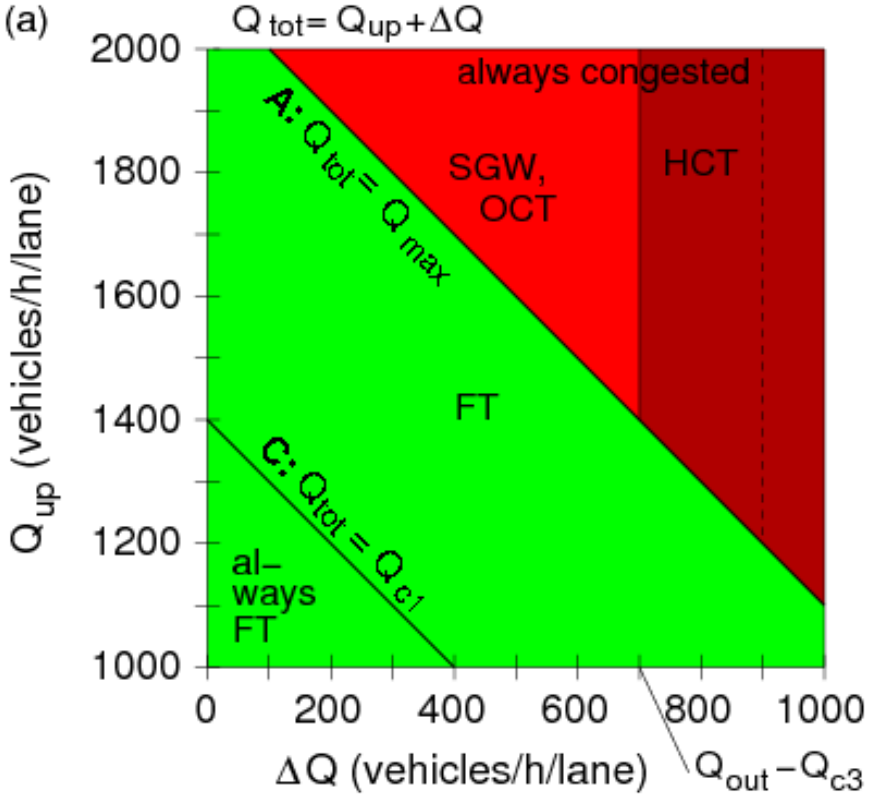
Phys. Rev. Lett. 82, 4360 (1999).

Empirically Observed Elementary Congestion Patterns

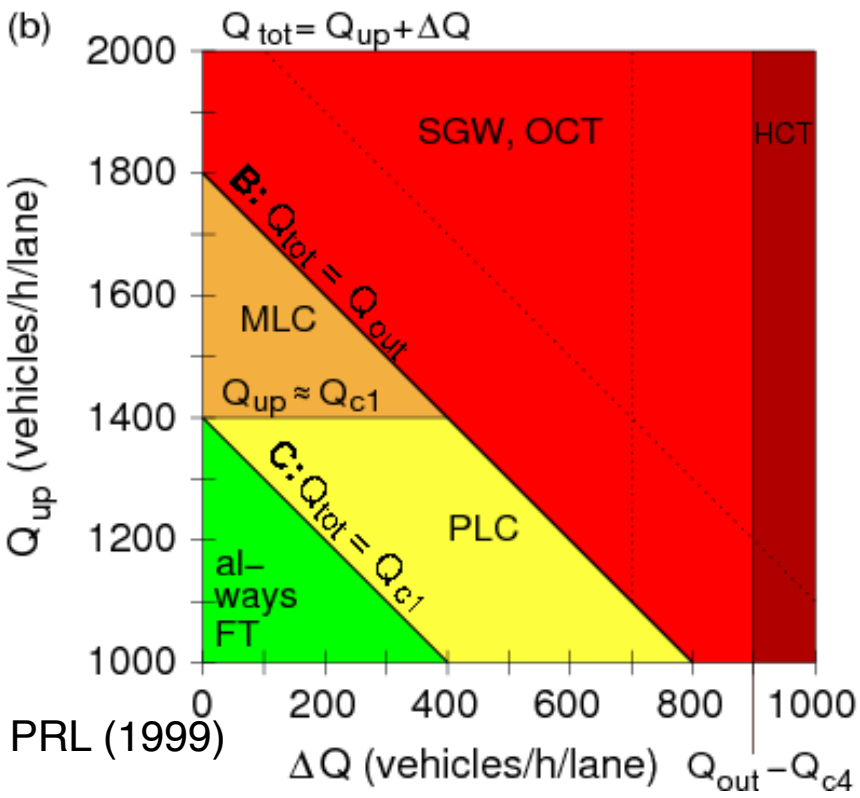


Phase Diagram of Traffic States and Universality Classes

Phase diagram for small perturbations



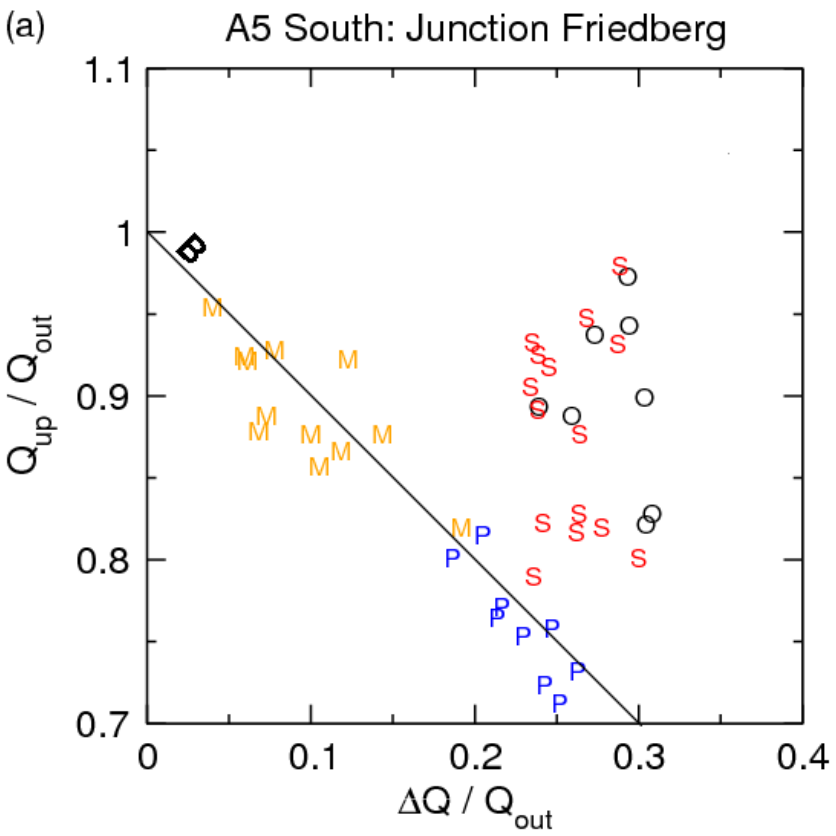
for large perturbations

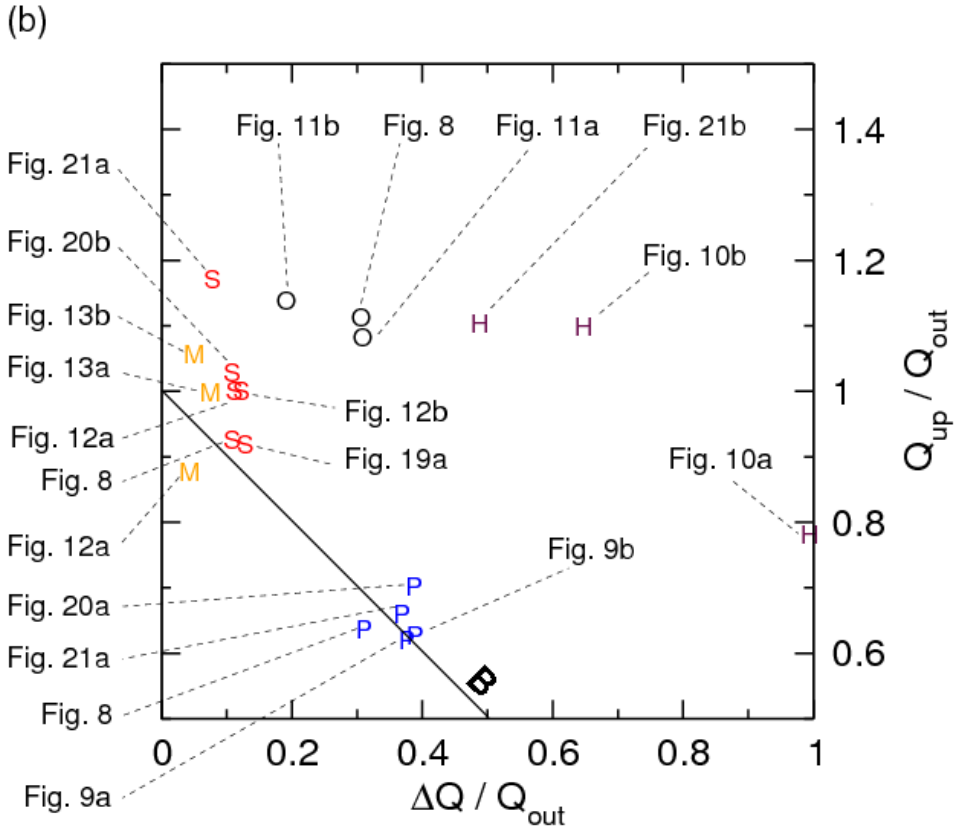


After: PRL (1999)

Empirical Phase Diagram for Scaled Flows

A scaling by the outflow, that varies from day to day, gives a clearer picture.





M = MLC = moving localized cluster, P = PLC = pinned localized cluster
O = OCT = oscillating congested traffic, S = SWG = stop-and-go waves
H = HCT = homogeneous congested traffic

A self-organizing world, like magic

The Making of Behavioural Economics

MISBEHAVING

Richard H. Thaler

Bestselling co-author of Nudge

Internet of Things

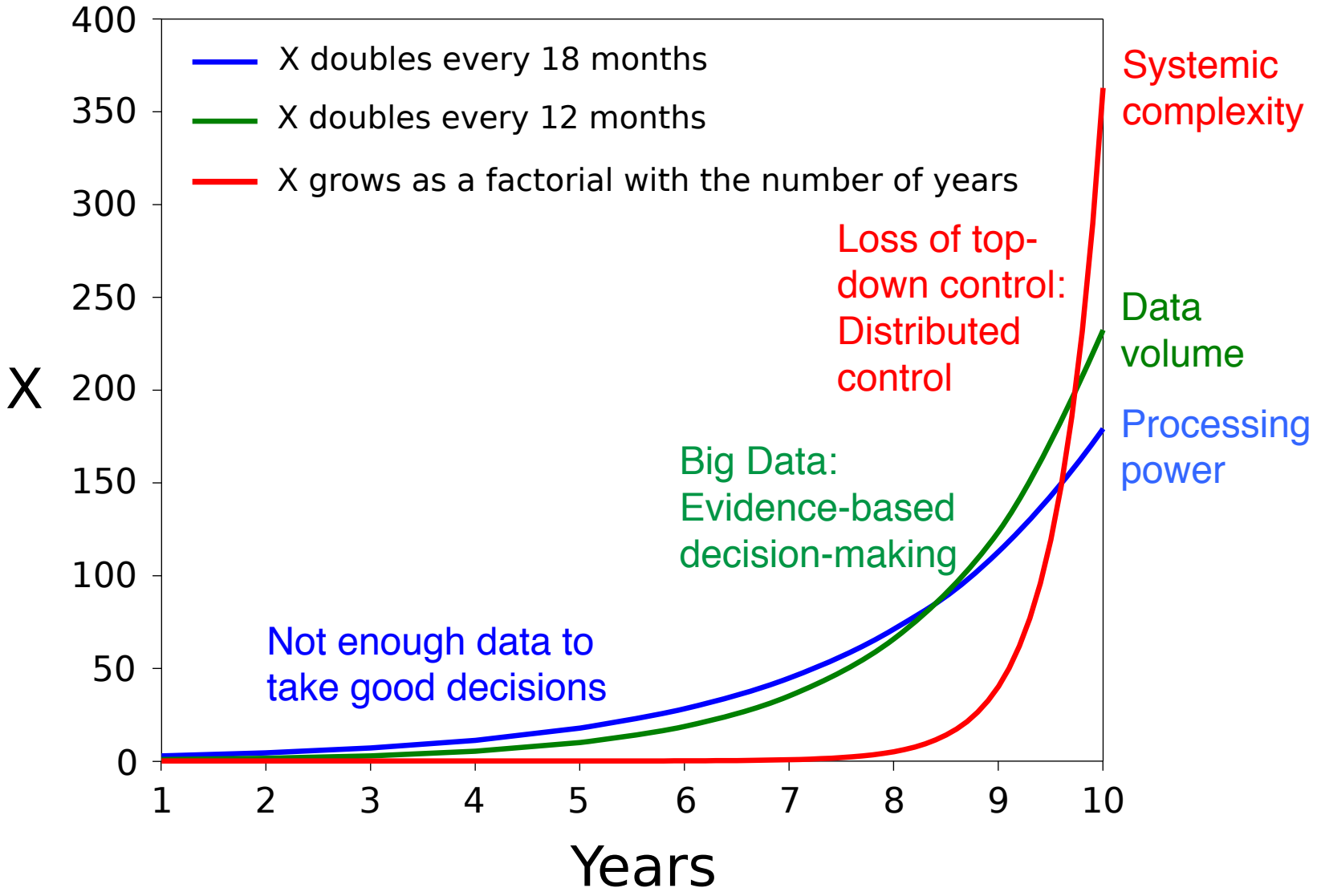
With the Internet of Things, we can now make self-organization work, 300 years after Adam Smith's "invisible hand" concept!

Overcoming Congestion by Real-Time Feedback Based on „Mechanism Design“

Success by Real-Time Feedback

Urban Traffic

Exponential vs.Factorial Growth – Implications for the Governance of Complex Systems



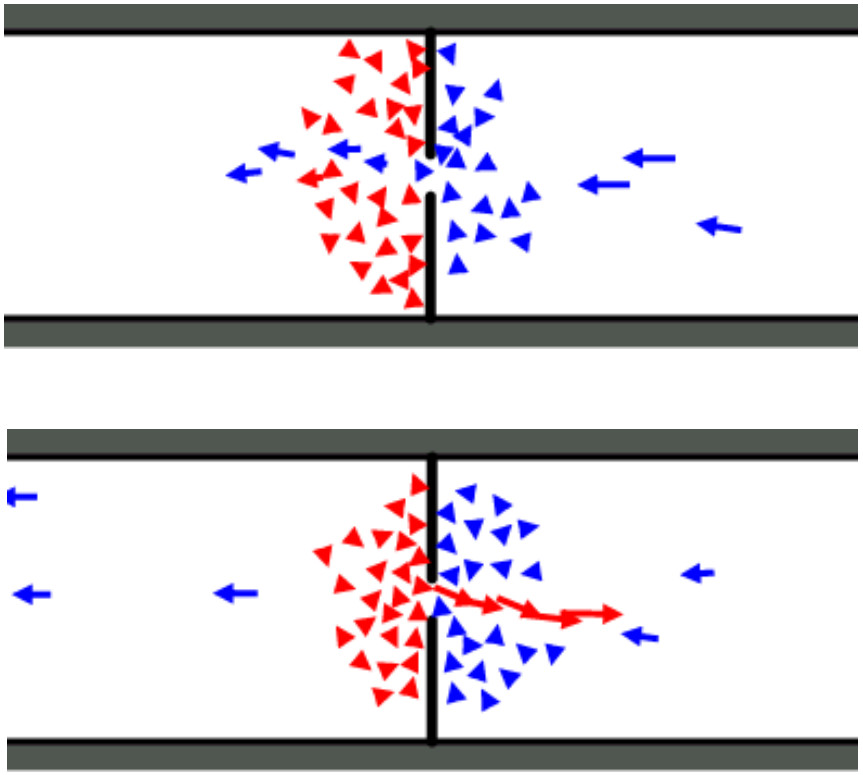
How to Make Self-Organization Work

- Complex systems are difficult to understand, predict, and control
- But they tend to self-organize emergent structures, properties, and functions
- The interactions within the system determine the outcome of self-organization
- With the right kinds of interaction rules, everything works wonderfully and efficiently ("invisible hand")
- How to find suitable interaction rules? (computer simulations, experiments, interactive virtual worlds, exploratories)
- How to change them? (real-time data and real-time feedback)
- How to gain these data? (Nervousnet)
- How to produce the feedbacks? (multi-dimensional finance/value exchange)

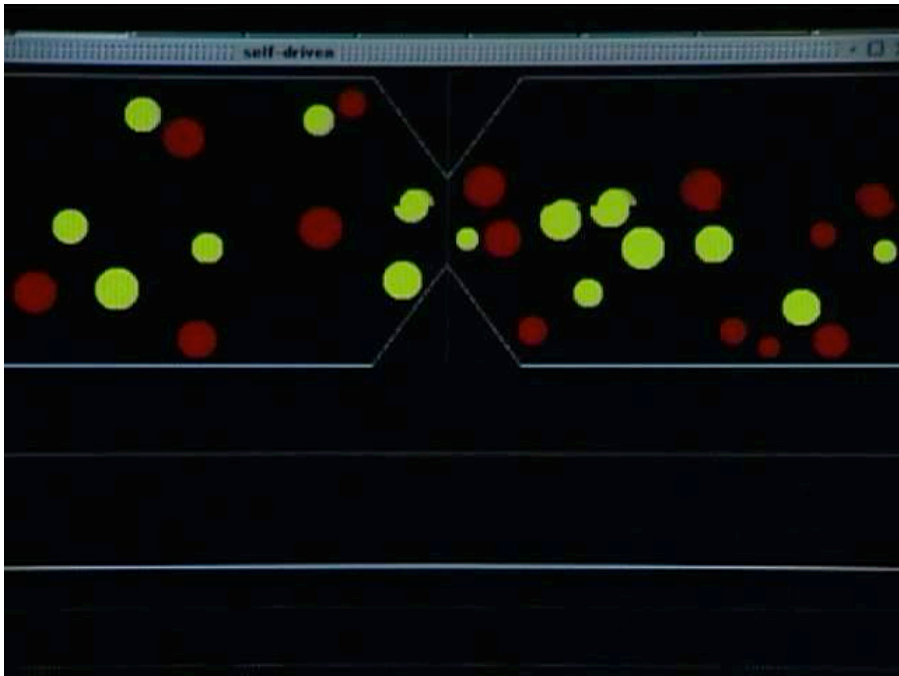
real-time measurement

multi-dimensional real-time feedback

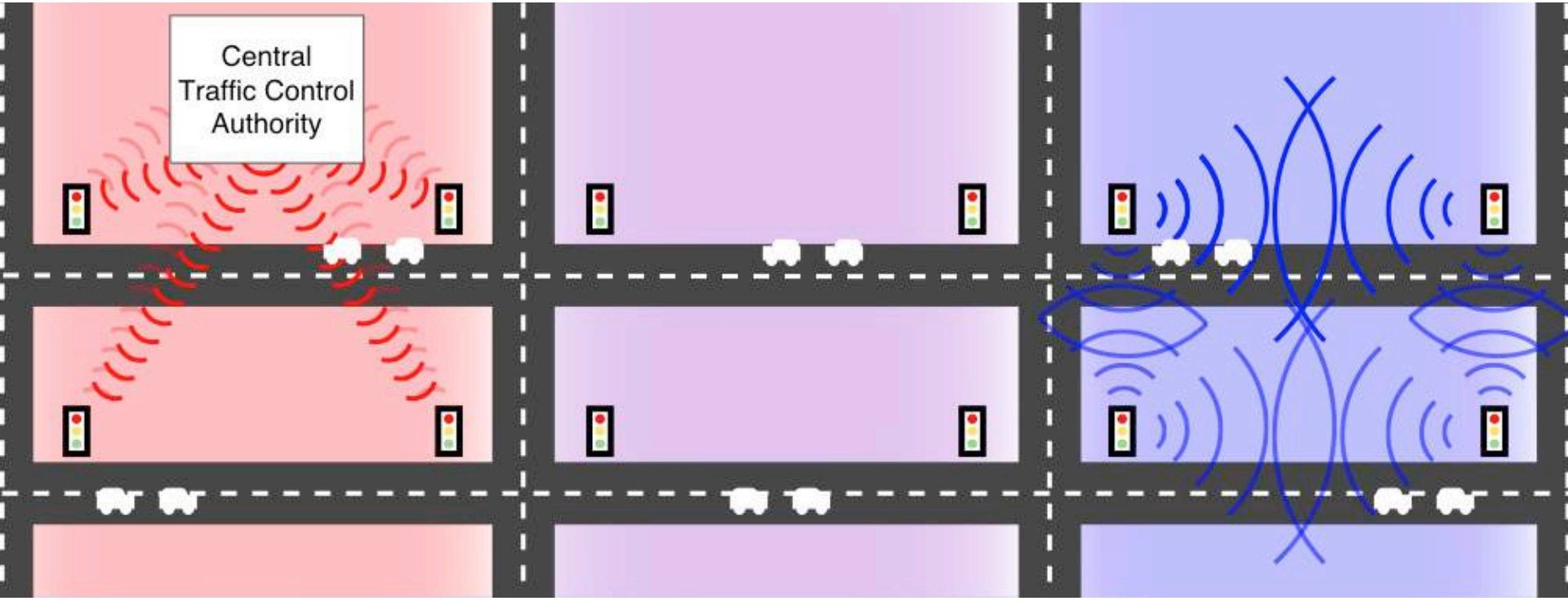
Self-Organized Oscillations at Bottlenecks and Synchronization



- Pressure-oriented, autonomous, distributed signal control:
  - Major serving direction alternates, as in pedestrian flows at intersections
  - Irregular oscillations, but 'synchronized'
- In huge street networks:
  - 'Synchronization' of traffic lights due to vehicle streams spreads over



Comparing 3 Ways to Organize a Complex System

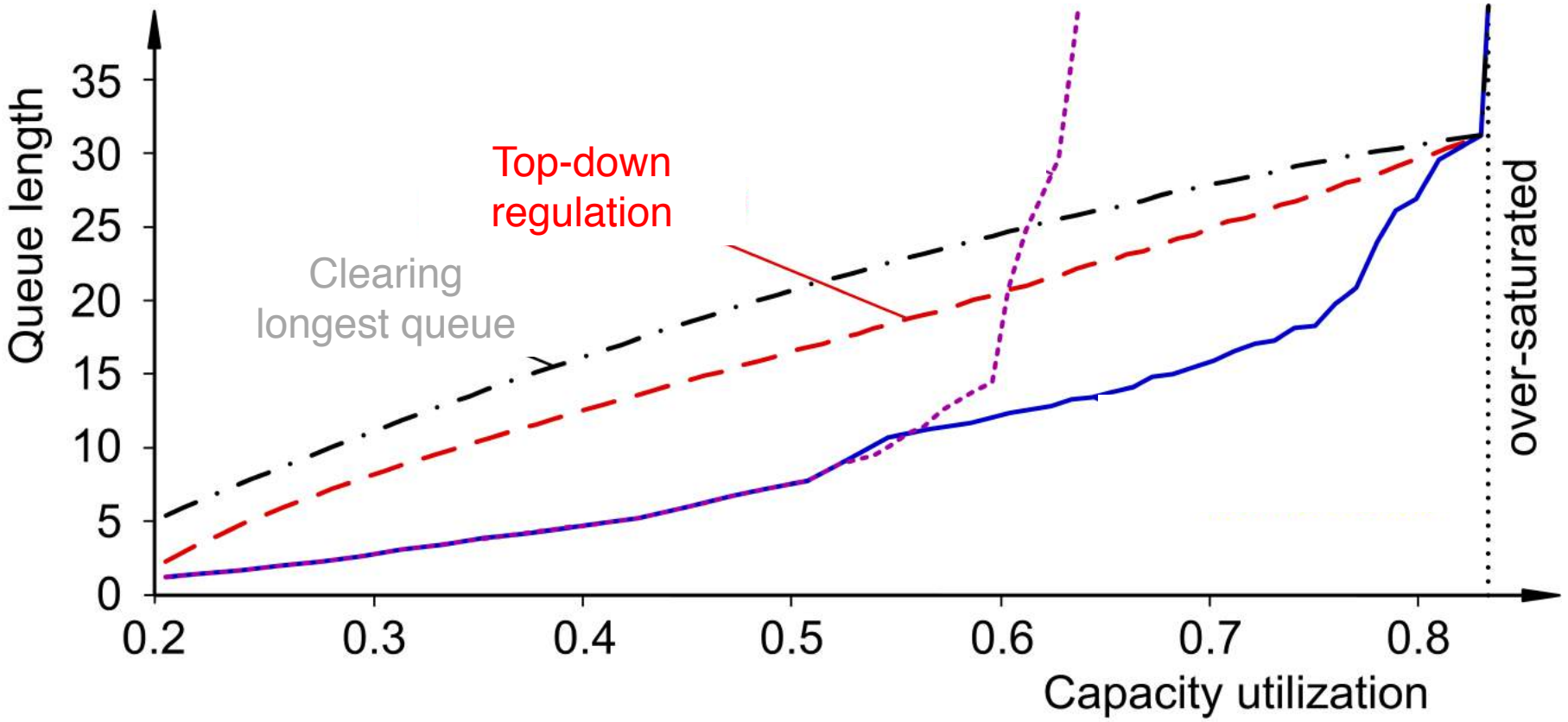


Central control, "benevolent dictator"

Travel time minimization, "homo economicus"

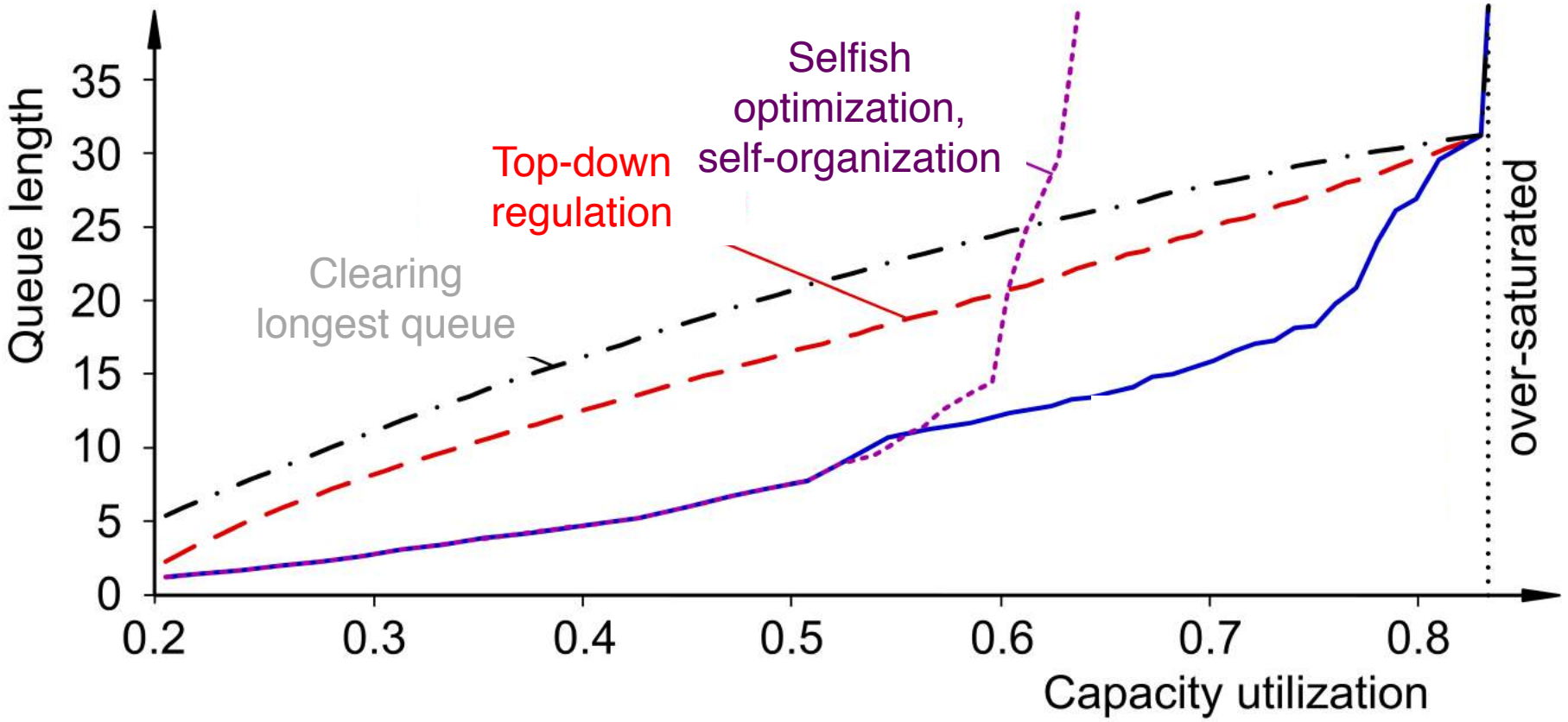
Same, but other-regarding coordination with neighbors

Bottom-Up Self-Organization Can Outsmart Optimal Top-Down Control



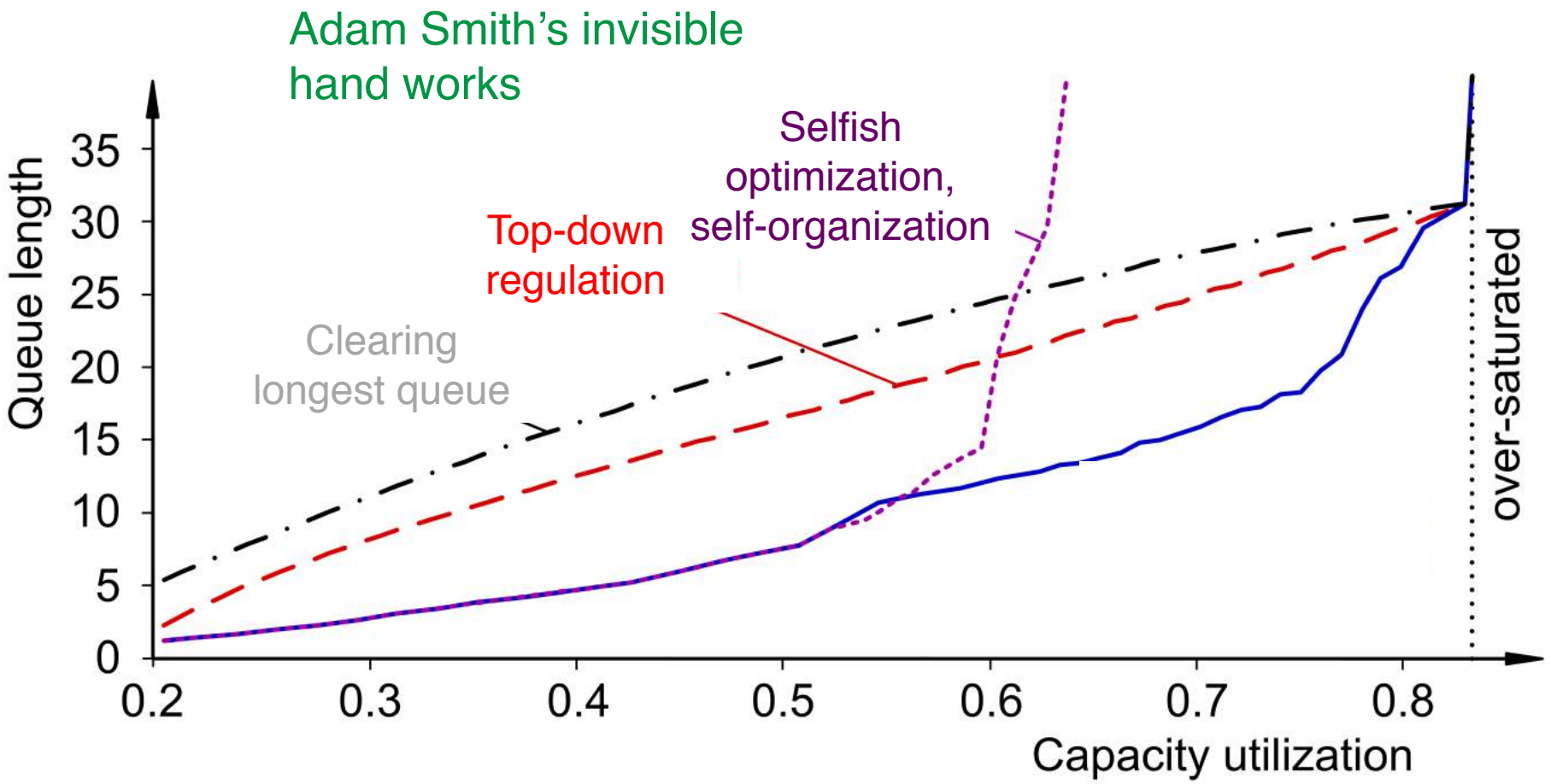
Stefan Lämmer and Dirk Helbing

Bottom-Up Self-Organization Can Outsmart Optimal Top-Down Control



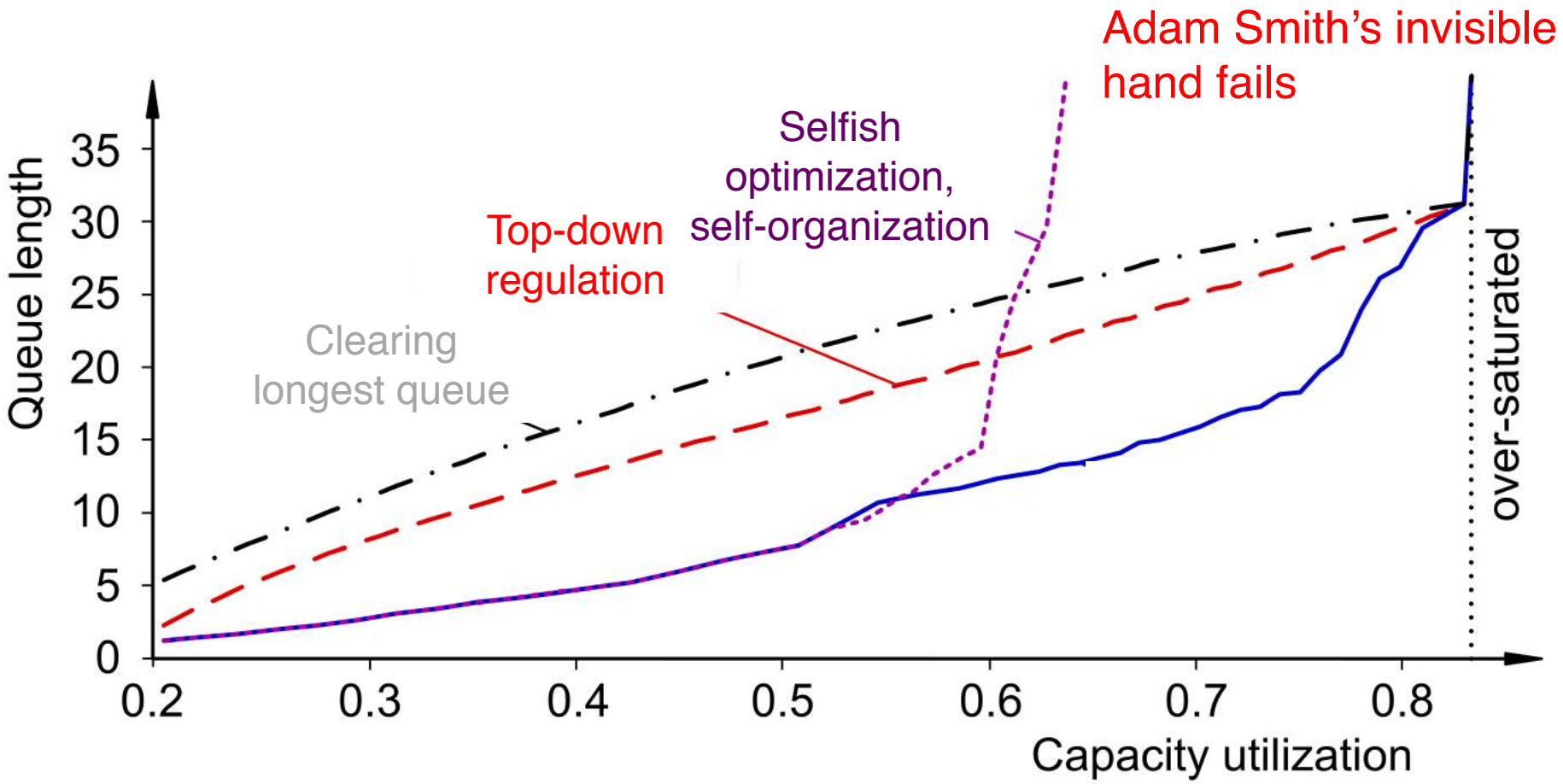
Stefan Lämmer and Dirk Helbing

Bottom-Up Self-Organization Can Outsmart Optimal Top-Down Control



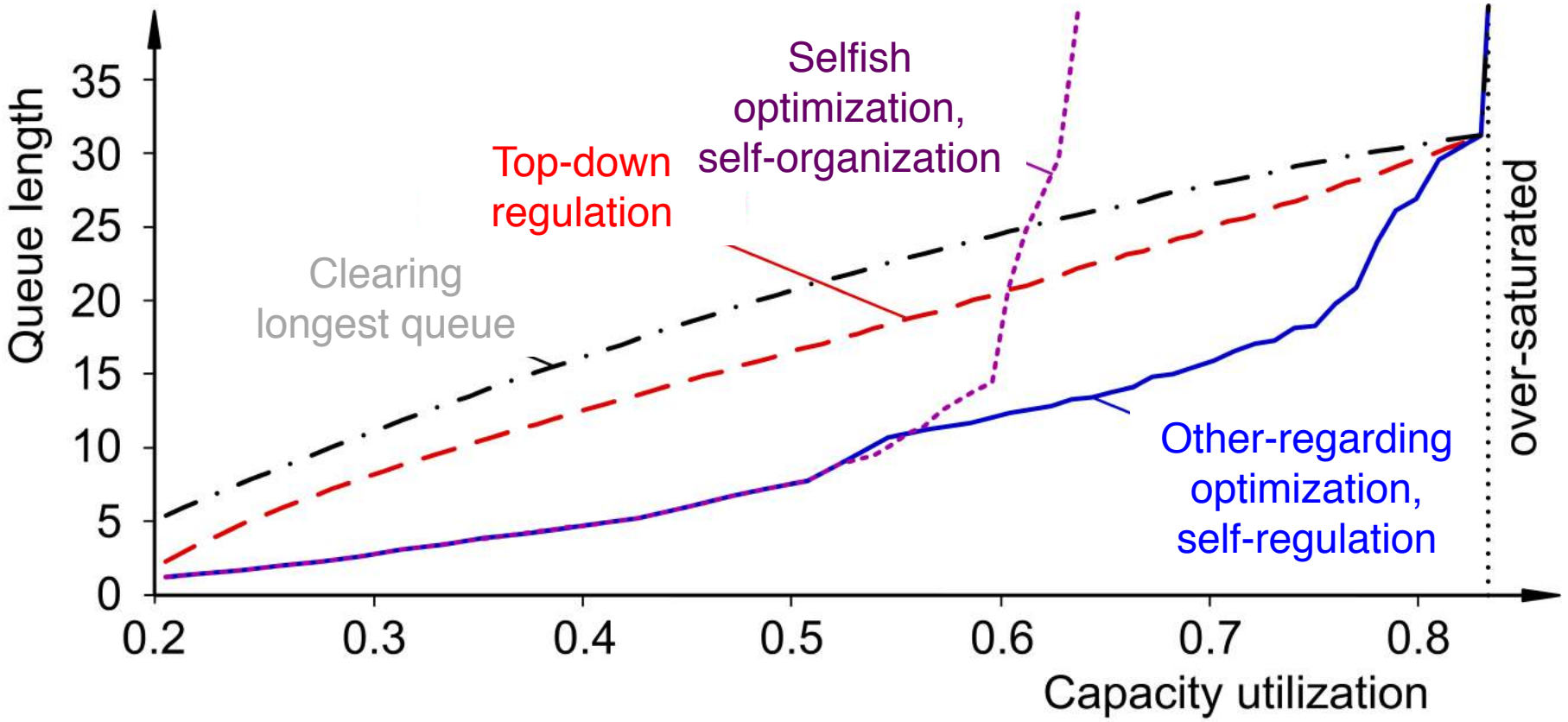
Stefan Lämmer and Dirk Helbing

Bottom-Up Self-Organization Can Outsmart Optimal Top-Down Control



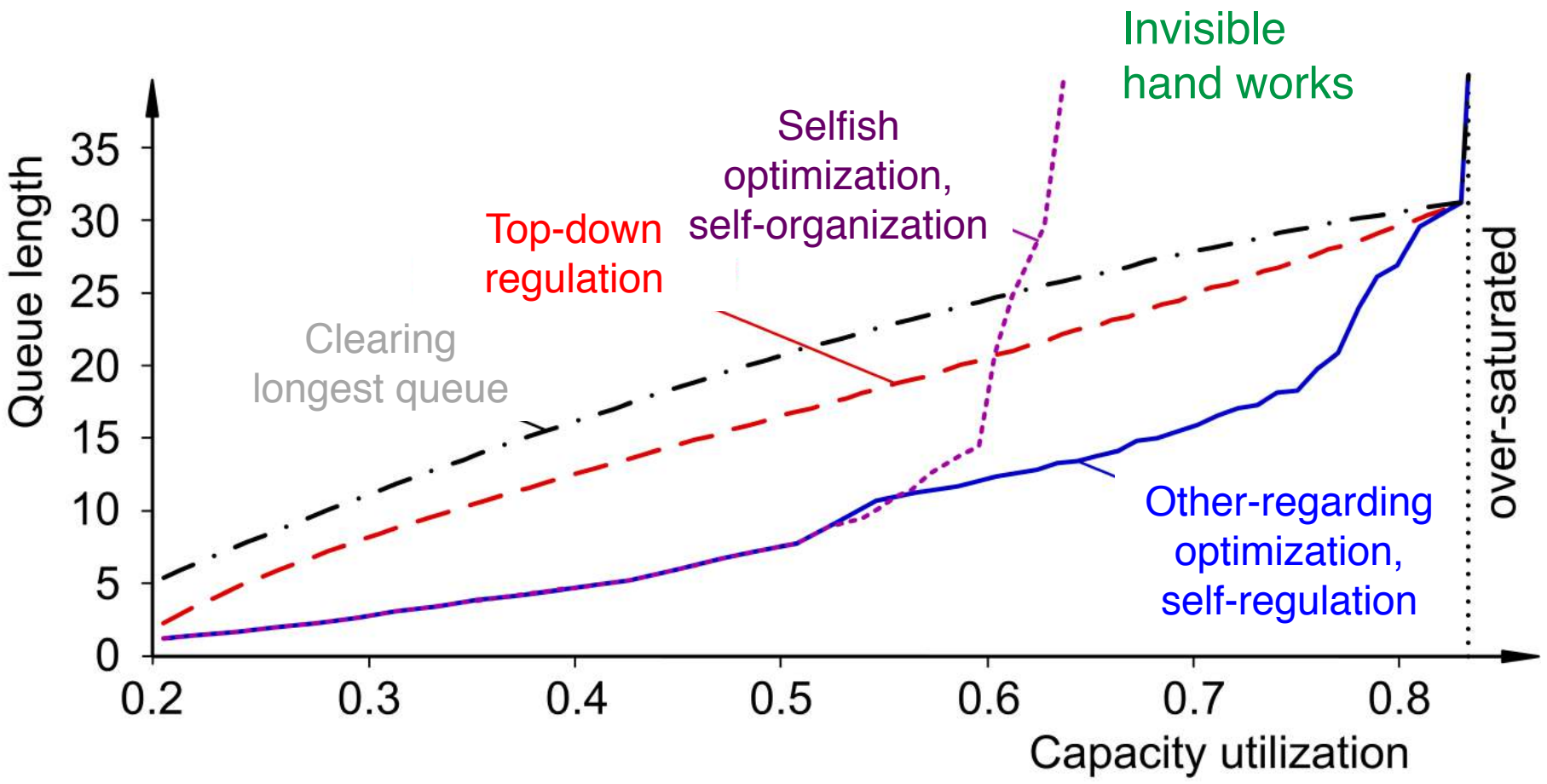
Stefan Lämmer and Dirk Helbing

Bottom-Up Self-Organization Can Outsmart Optimal Top-Down Control



Stefan Lämmer and Dirk Helbing

Bottom-Up Self-Organization Can Outsmart Optimal Top-Down Control



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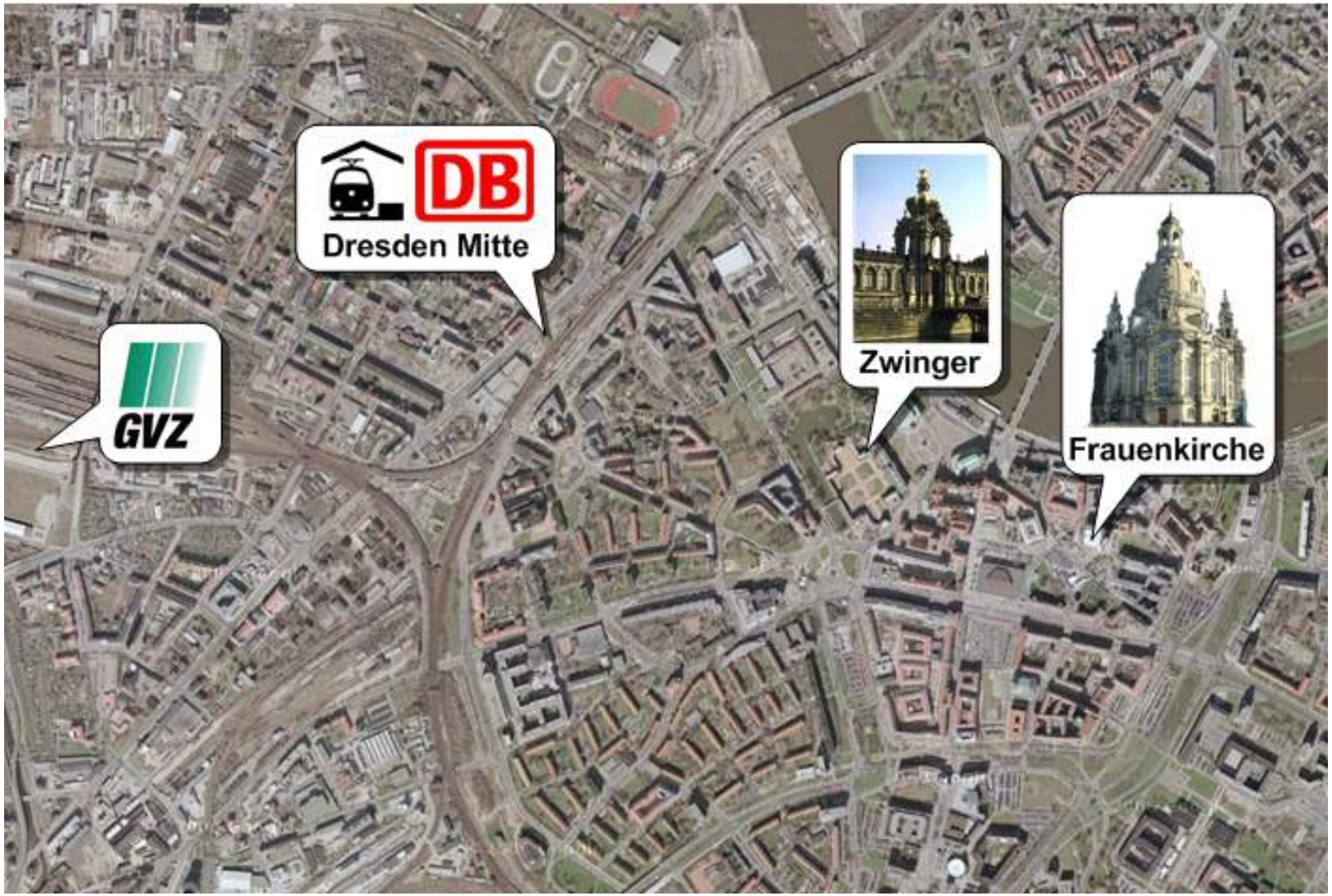
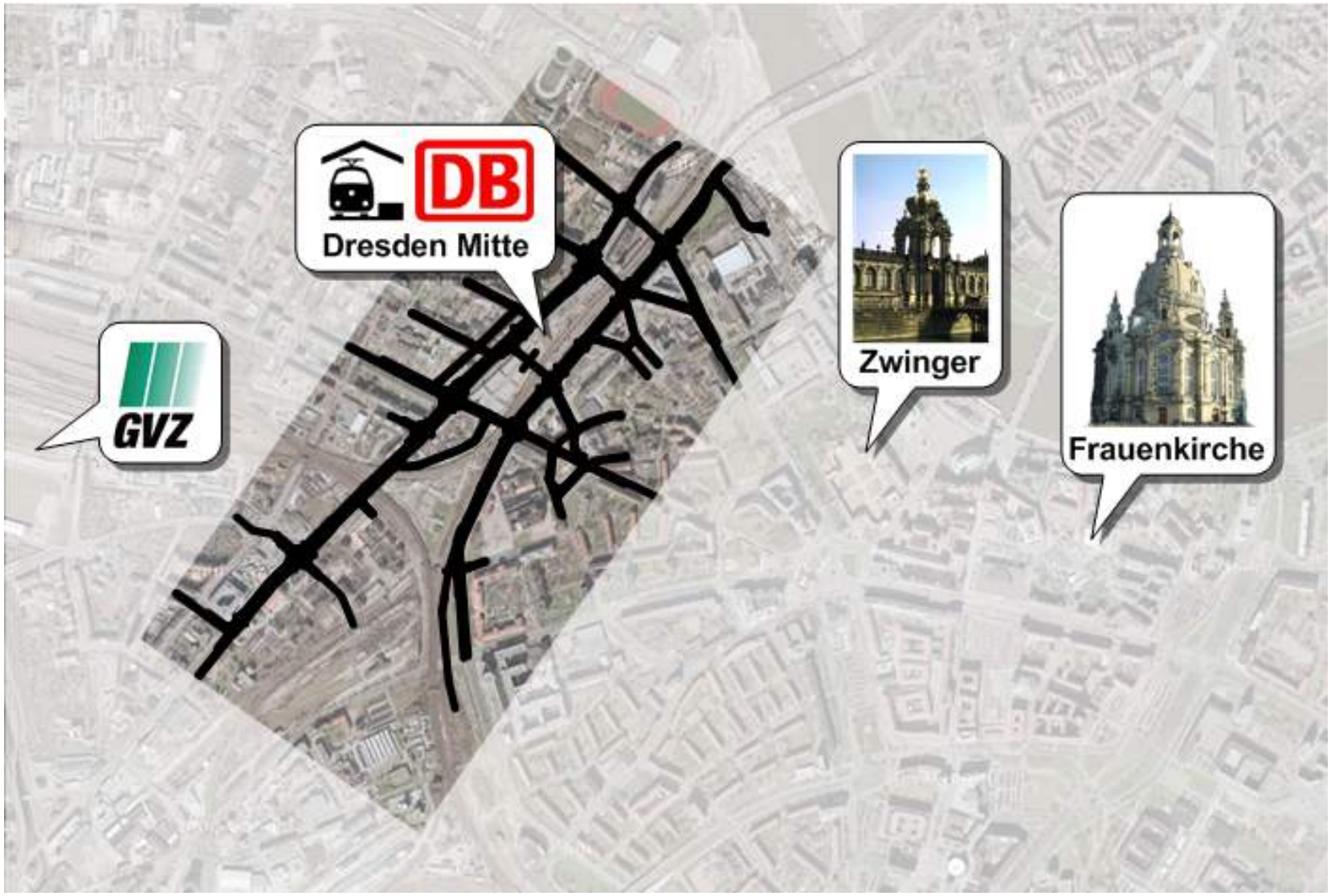
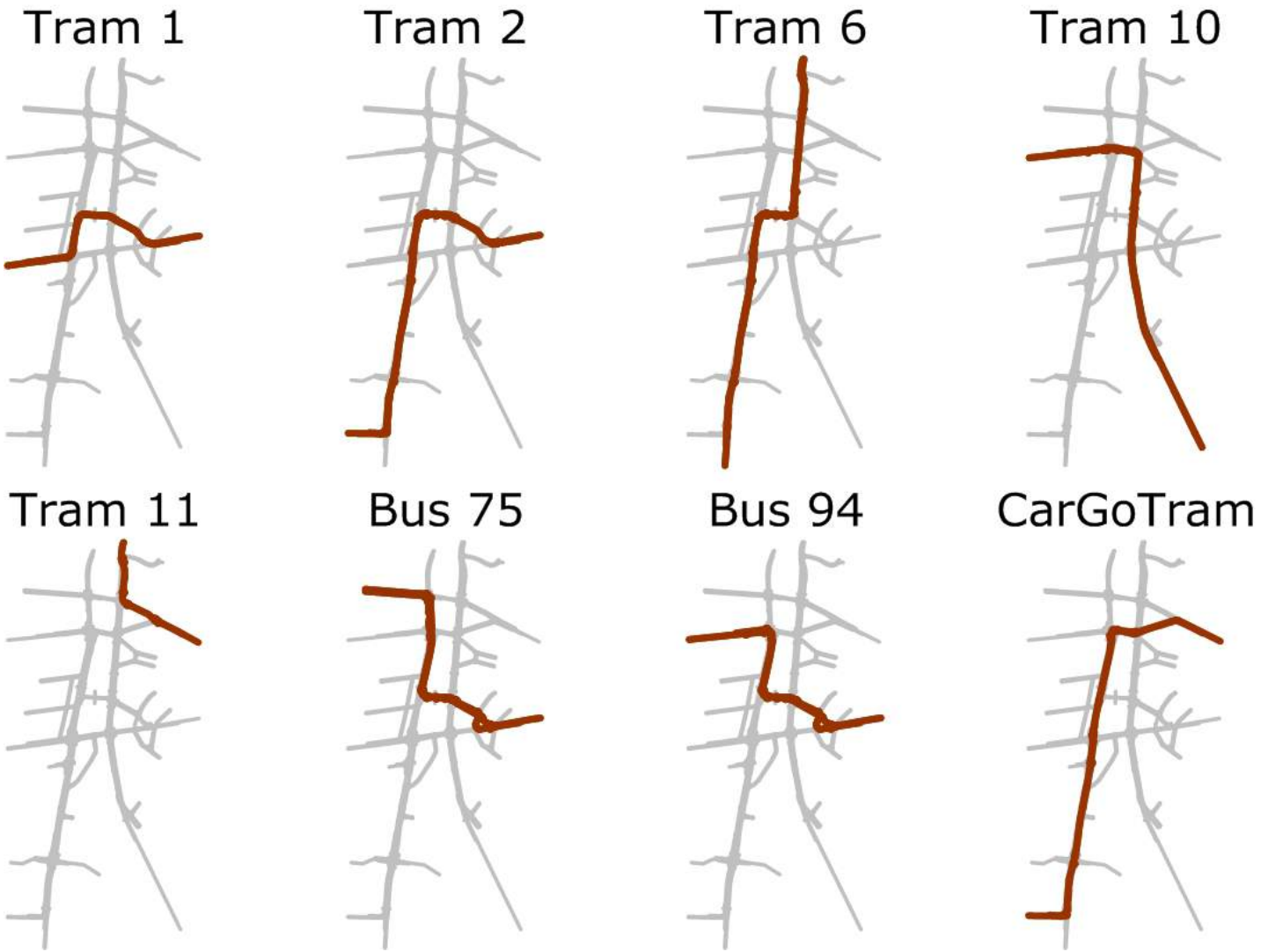
The Challenge of Traffic Control in the Center of Dresden, Germany



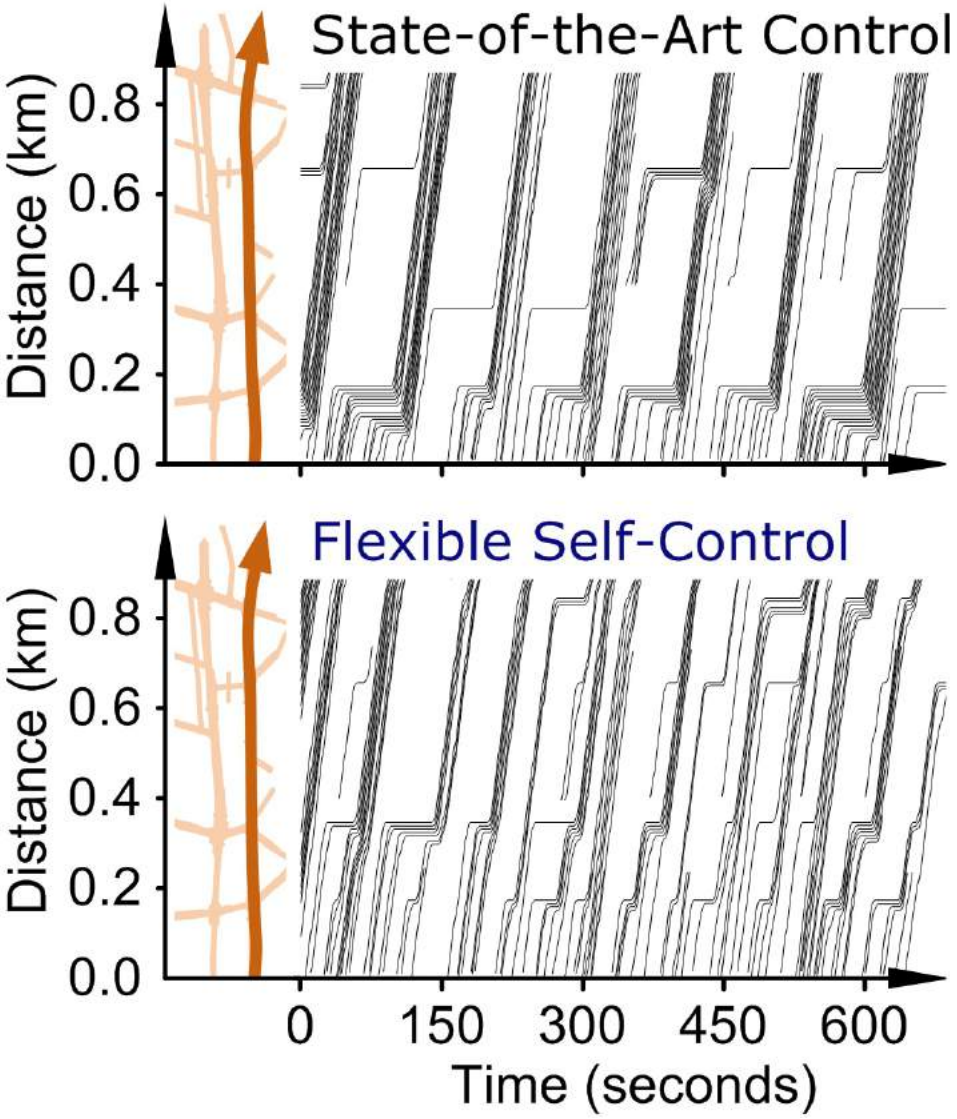
Self-Organized Traffic Light Control in Dresden, Germany: A Pilot Study



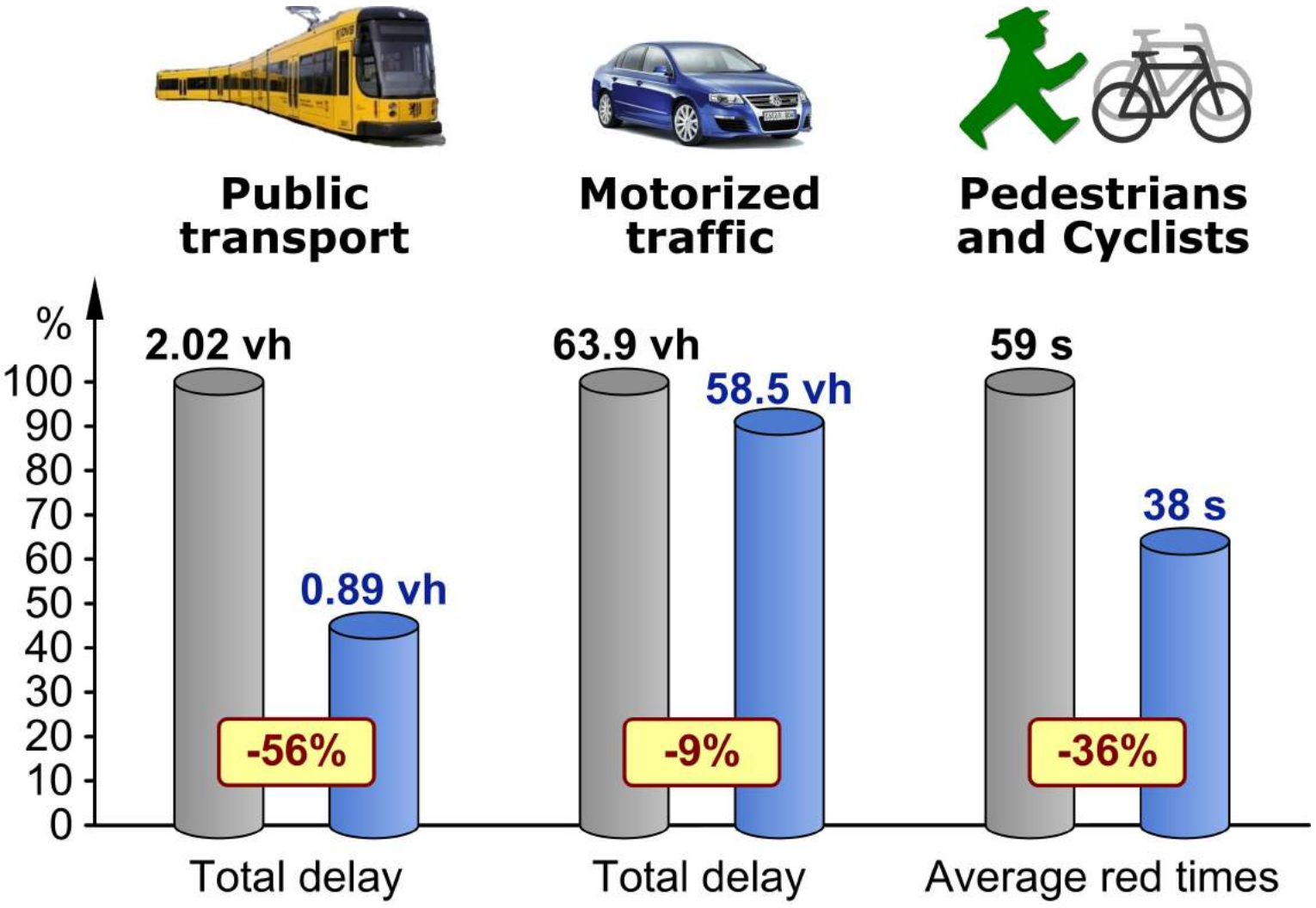
Disturbance of Traffic Coordination by Bus and Tram Lines



Synchronize Traffic by Green Waves or Use Gaps as Opportunities?



Decentralized Can Outsmart Centralized Control



An Agent-Based Approach to Self-organized Production

Thomas Seidel[1], Jeanette Hartwig[2], Richard L. Sanders[3], and Dirk Helbing[4,5,6]

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Future Generation Computer Systems
Volume 76, November 2017, Pages 73-91

Self-regulating supply–demand systems

Evangelos Pournaras [a], Mark Yao [b], Dirk Helbing [a]

Show more

https://doi.org/10.1016/j.future.2017.05.018

Highlights

- Internet of Things technologies enable an automated, online and bottom-up regulation.
- A decentralized self-regulatory framework for supply–demand systems is proposed.
- A evaluation methodology allows the systematic assessment of optimality.
- Higher informational diversity in agent selections result in higher performance.
- Agents' selection strategies show striking measurable performance trade-offs.

Social self-organization

Understanding Complex Systems

Springer COMPLEXITY

Dirk Helbing *Editor*

Social Self-Organization

Agent-Based Simulations and Experiments to Study Emergent Social Behavior

Springer

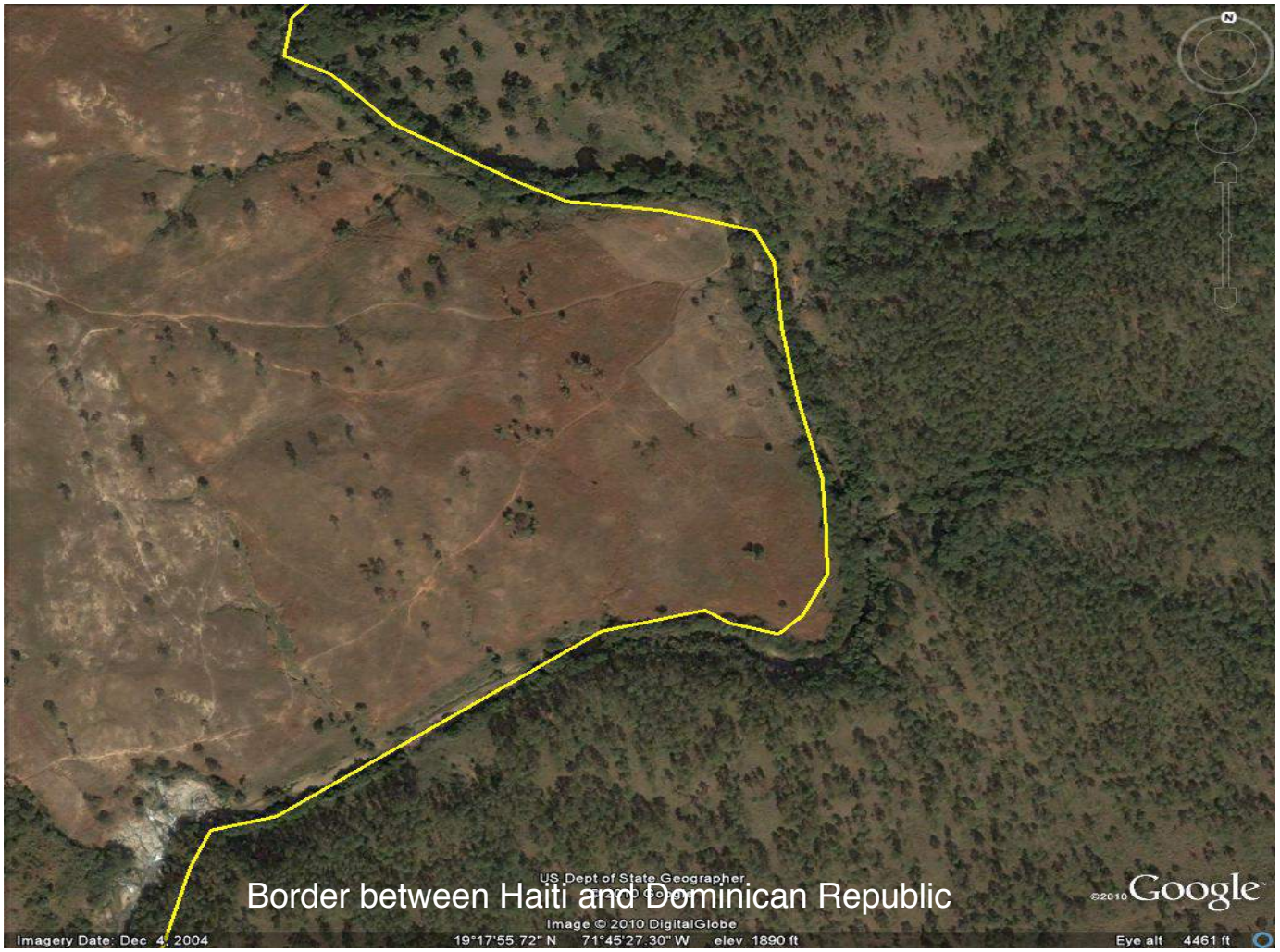
THE AUTOMATION OF SOCIETY IS NEXT

How to survive the digital revolution

Dirk Helbing

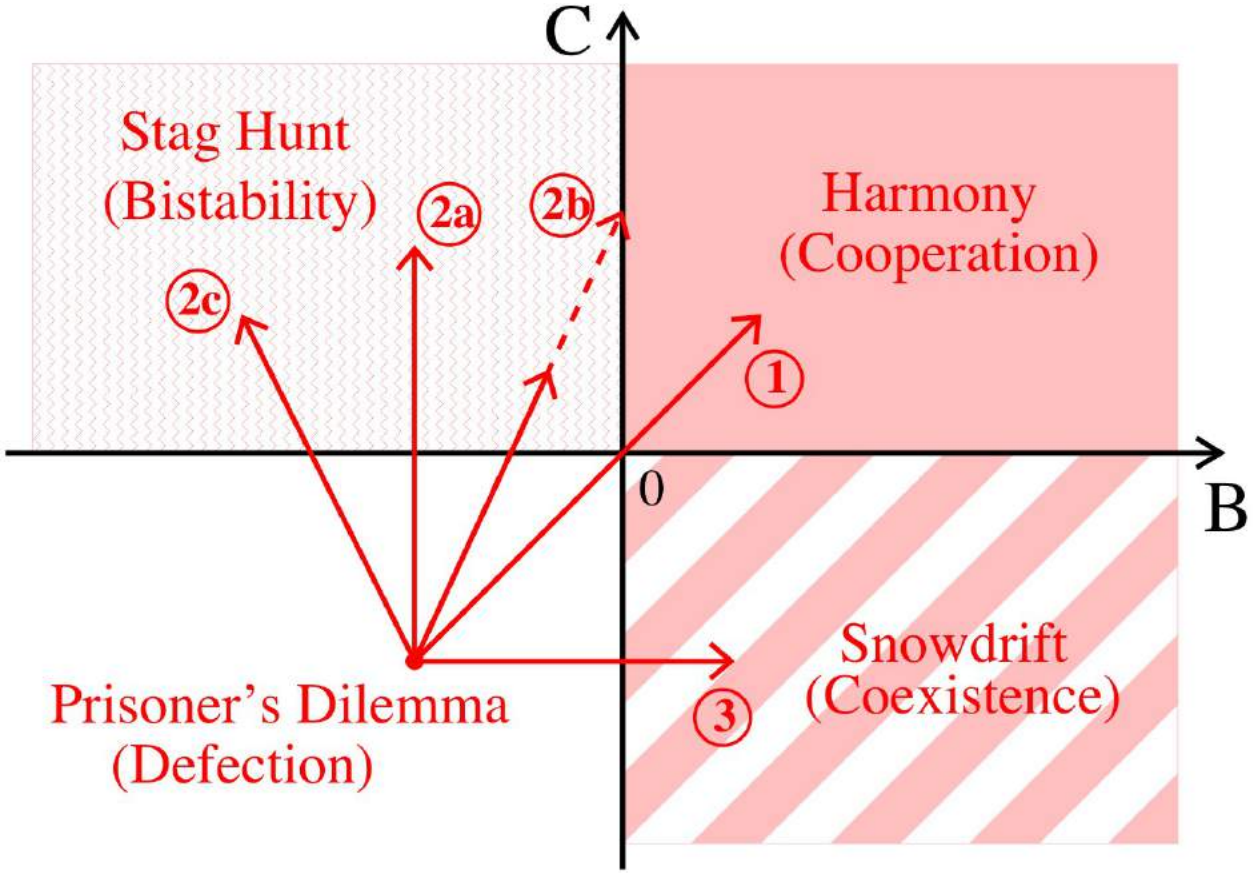
Empirical Studies of Self-Governance Confirm Efficiency, Given Proper Design Principles

Tragedies of the Commons



Border between Haiti and Dominican Republic

How to Overcome Social Dilemmas by Transforming them into other Games



Route 1: Kin selection, 3: Network interactions (don't support norms)

2a: Direct reciprocity, 2b: Indirect reciprocity, 2c: Punishment (support norms)

Decentralized approaches supporting cooperation

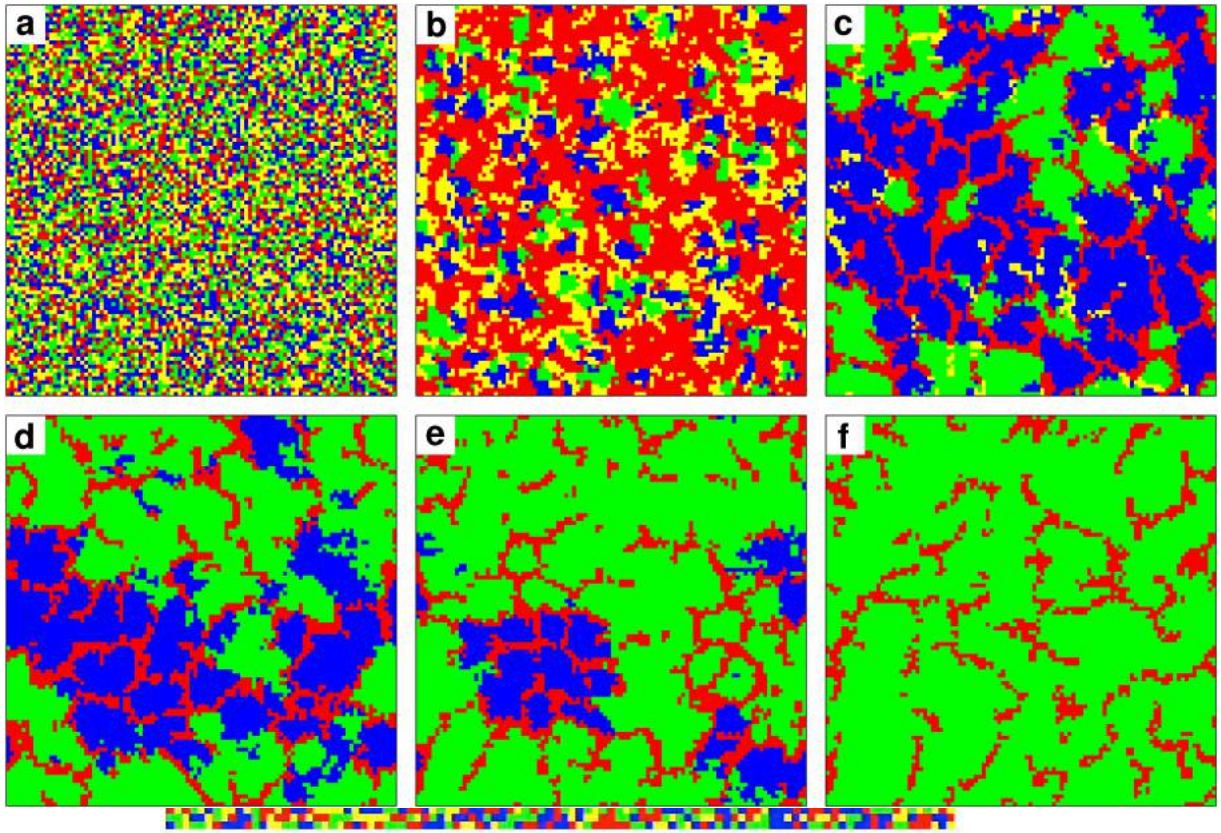
Direct Reciprocity

Peer Punishment

"We're from the Neighborhood Watch committee. We've heard you're wearing a fake Rolex."

Leo Cullum, The New Yorker, February 23, 1998.

How Second-Order Free-Riders Are Eliminated and Punishment and Morals Spread



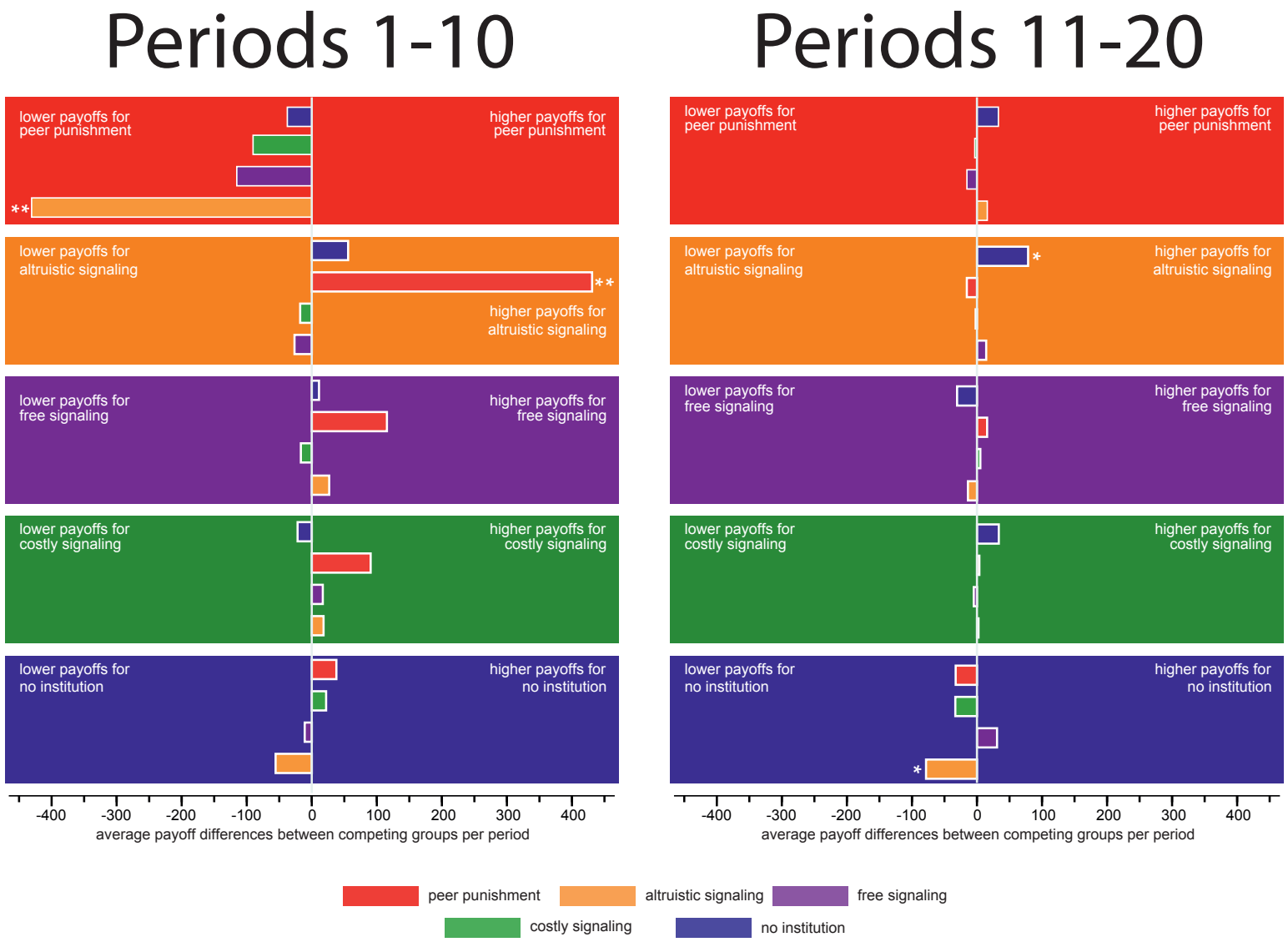
D = Defectors (free-riders), M = Moralists = cooperators punishing defectors, C = non-punishing Cooperators (second-order free-riders), I = Immoralists = defectors punishing other defectors

Is Peer Punishment or Signaling the Superior Mechanism?

Characteristics of the game:

- Intergroup conflict
- Subjects are endowed with 1000 points in every period
- Each member of winning group gets 1000 points
- Chances of winning correspond to sum of contributions
- Nash equilibrium: 250 points per group

Comparing the Efficiency of Mechanisms

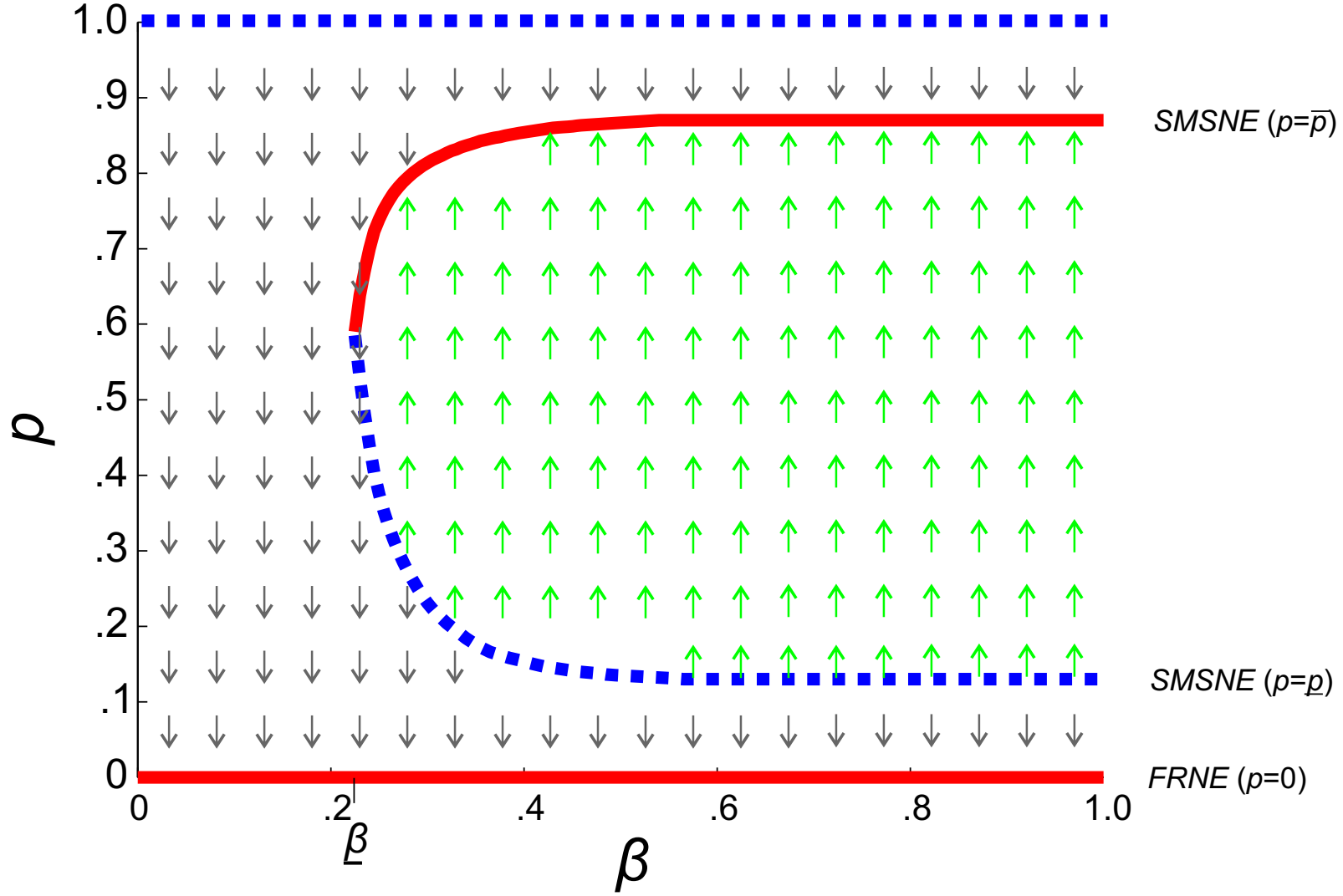


The Outbreak of Cooperation with Imitation, Noise, and Success-Driven Migration

Red, yellow: defectors (cheaters)
Blue, green: cooperators
Yellow, green: changed in last time step

Initial configuration

Meritocratic Matching:
Everyone Can Be Better Off



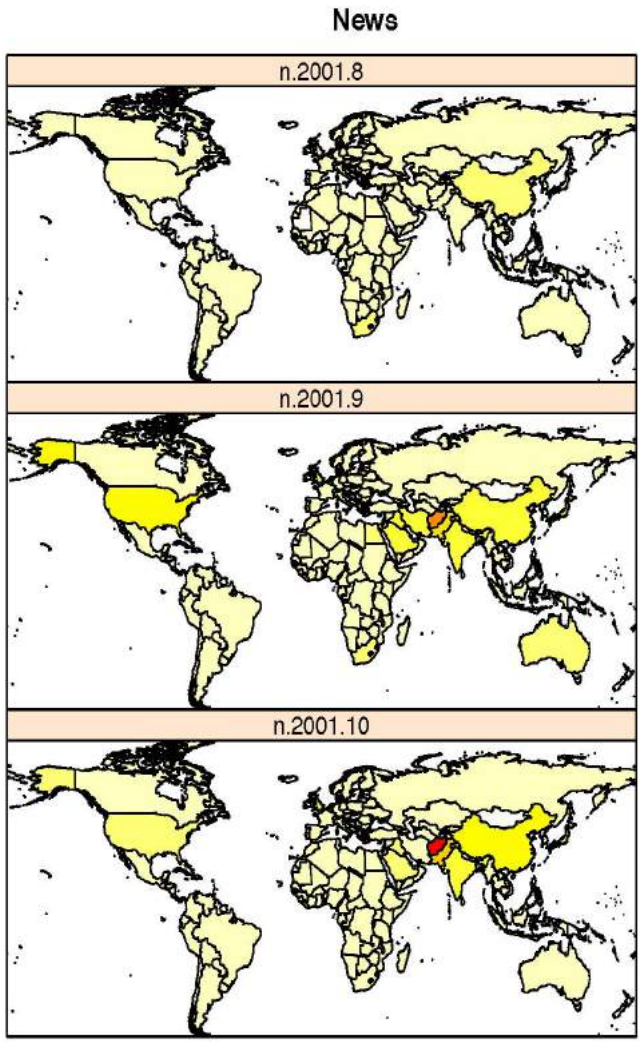
DH, with Heinrich Nax and Ryan Murphy

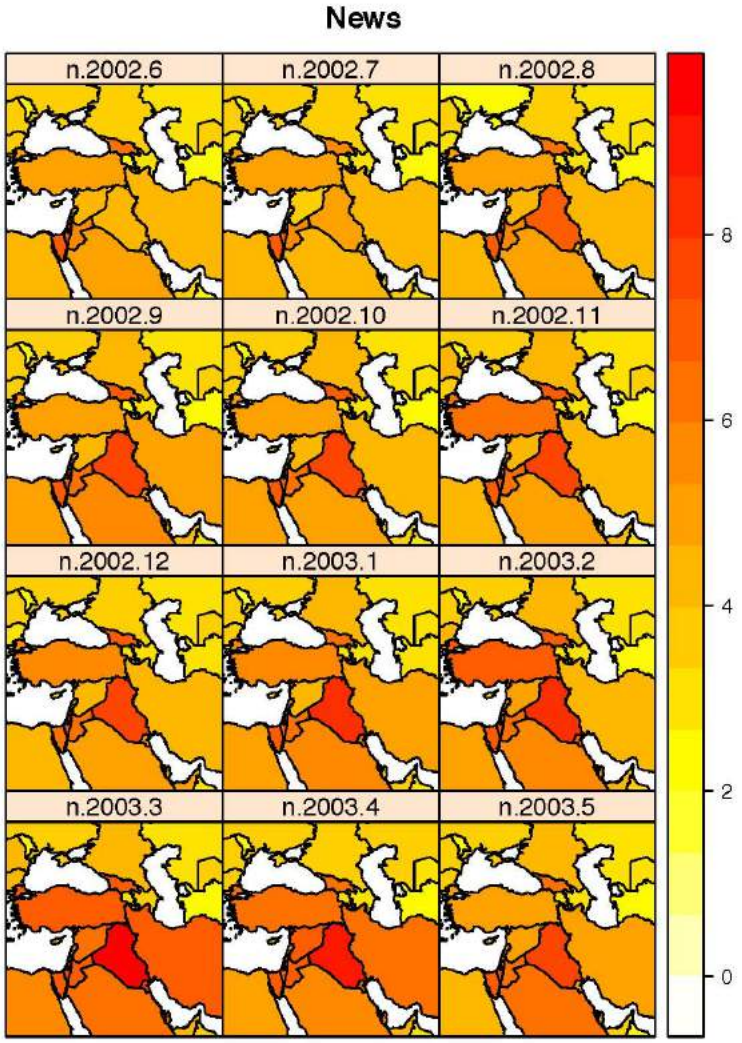
Reputation Systems

We strive to provide 5 star service.

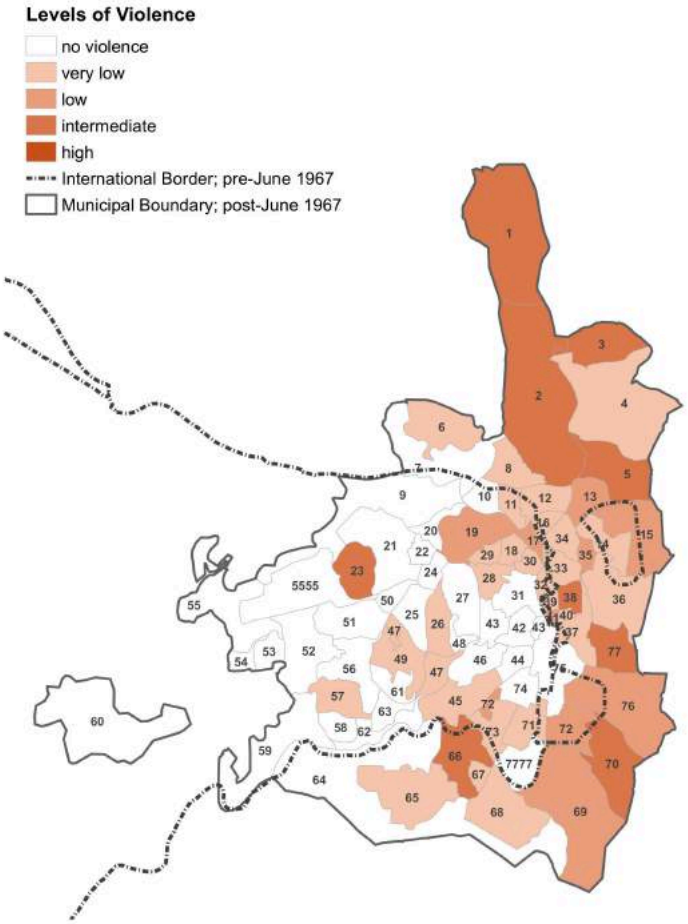
Mitigating Conflict

Spreading of International Tensions

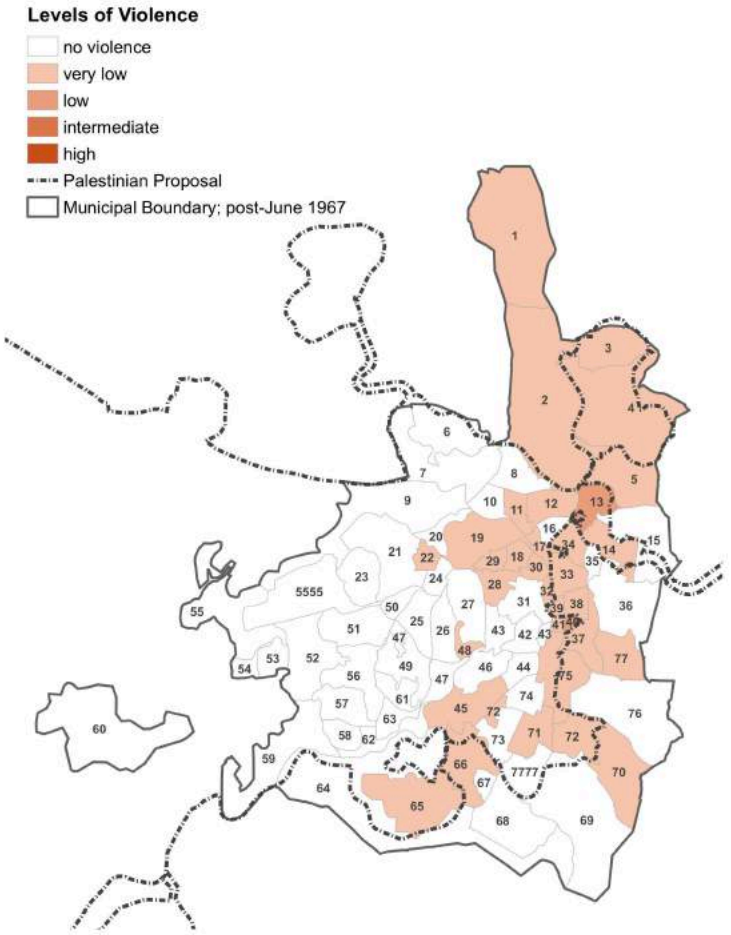




Overcoming Conflict by Segregation (or More Tolerance!)



‘Business as Usual’



Clinton Parameters

AJPS AMERICAN JOURNAL of POLITICAL SCIENCE

ARTICLE

Group Segregation and Urban Violence

Ravi Bhavnani, Karsten Donnay, Dan Miodownik, Maayan Mor, Dirk Helbing

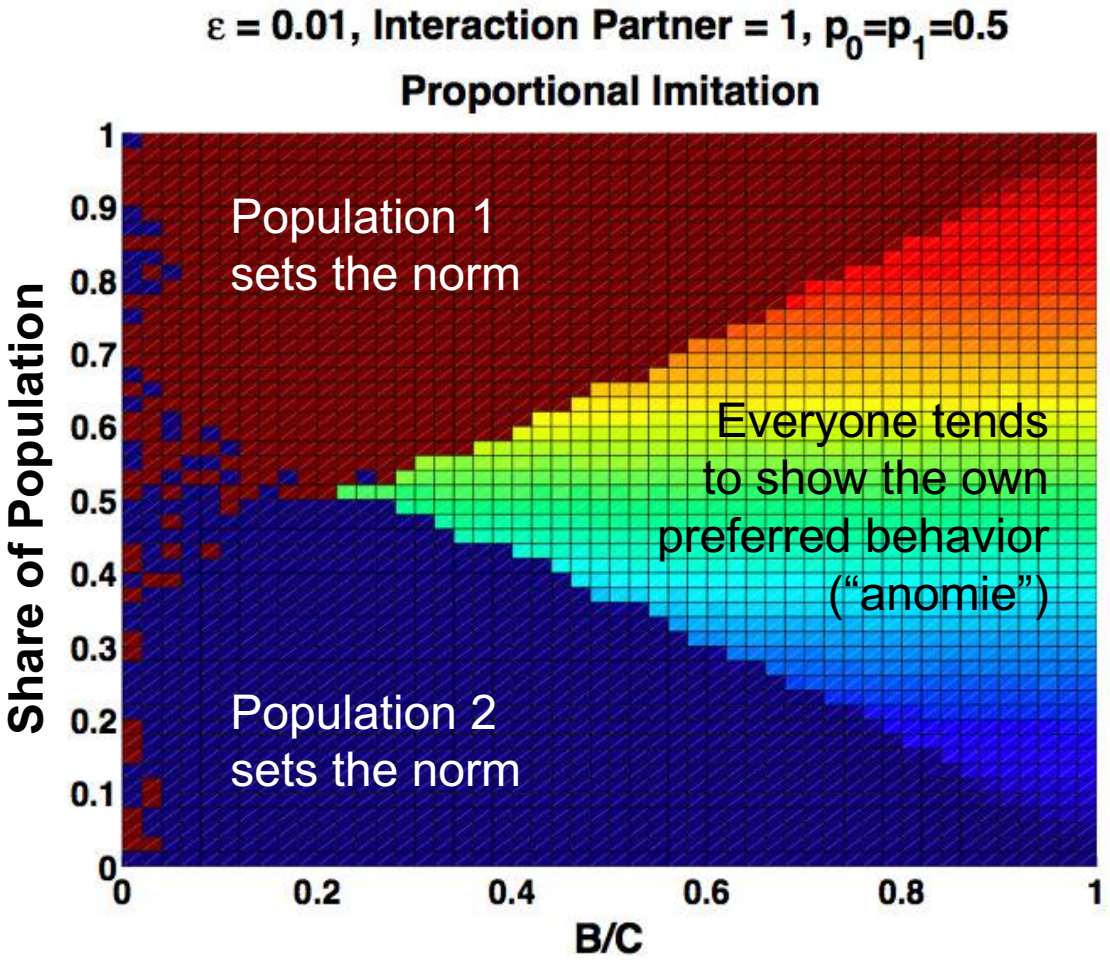
First published: 27 June 2013 | https://doi.org/10.1111/ajps.12045 | Cited by: 14

Replication data can be found at http://dvn.iq.harvard.edu/dvn/dv/ajps

Abstract

How does segregation shape intergroup violence in contested urban spaces? Should nominal rivals be kept separate or instead more closely integrated? We develop an empirically grounded agent-based model to understand the sources and patterns of violence in urban areas, employing Jerusalem as a demonstration case and seeding our model with microlevel, geocoded data on settlement patterns. An optimal set of parameters is selected to best fit the observed spatial distribution of violence in the city, with the calibrated model used to assess how different levels of segregation, reflecting various proposed "virtual futures" for Jerusalem, would shape violence. Our results suggest that besides spatial proximity, social distance is key to explaining conflict over urban areas: arrangements conducive to reducing the extent of intergroup interactions —including localized segregation, limits on mobility and migration, partition, and differentiation of political authority—can be expected to dampen violence, although their effect depends decisively on social distance.

Overcoming Conflict by Consensus Formation: Emergence of Shared Norms



Computer simulations:

Red = individuals preferring behavior 1

Yellow = individuals adjusting to behavior 1

Blue = individuals preferring behavior 2

Green = individuals adjusting to behavior 2

Reward of showing preferred behavior / Reward of conforming

Cooperation, Norms, and Revolutions: A Unified Game-Theoretical Approach

Dirk Helbing, Anders Johansson

Published: October 12, 2010 • https://doi.org/10.1371/journal.pone.0012530

Abstract

Background

Cooperation is of utmost importance to society as a whole, but is often challenged by individual self-interests. While game theory has studied this problem extensively, there is little work on interactions within and across groups with different preferences or beliefs. Yet, people from different social or cultural backgrounds often meet and interact. This can yield conflict, since behavior that is considered cooperative by one population might be perceived as non-cooperative from the viewpoint of another.

AI for Good:

Artificial Intelligence that empowers people, turns beginners into professionals.

AI that helps us to help ourselves, and to coordinate and help each other.

Coming Era of Socio-Inspired Technologies

Understanding socially interactive systems facilitates socio-inspired ICT

- Cooperation,
- adaptability and self-regulation,
- conflict resolution,
- resilience,
- trust,
- reputation,
- social norms,
- values, ethics, and
- culture

Economic benefits!
New solutions to societal problems!

Edge *To arrive at the edge of the world's knowledge, seek out the most complex and sophisticated minds, put them in a room together, and have them ask each other the questions they are asking themselves.*

Thu, Feb 12, 2015 | CONVERSATIONS | VIDEOS | ANNUAL QUESTION | EVENTS | NEWS

CONVERSATION : TECHNOLOGY

A NEW KIND OF SOCIO-INSPIRED TECHNOLOGY

Dirk Helbing [6.19.12]

There's a new kind of socio-inspired technology coming up, now. Society has many wonderful self-organization mechanisms that we can learn from, such as trust, reputation, culture. If we can learn how to implement that in our technological system, that is worth a lot of money; billions of dollars, actually. We think this is the next step after bio-inspired technology.

Eur. Phys. J. Special Topics **214**, 401–434 (2012)

DOI: 10.1140/epjst/e2012-01700-6

THE EUROPEAN PHYSICAL JOURNAL SPECIAL TOPICS

Regular Article

Socio-inspired ICT

Towards a socially grounded society-ICT symbiosis

A. Ferscha[1,a], K. Farrahi[2], J. van den Hoven[3], D. Hales[4], A. Nowak[5], P. Lukowicz[6], and D. Helbing[7]

In A Diverse World
We Need to Create Interoperability

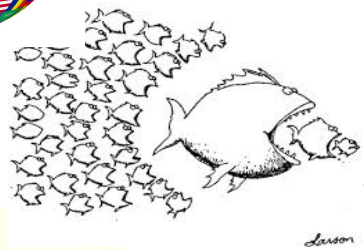
Different Types of Interactions

There are four possible scenarios:

	Socially unfavorable	**Socially favorable**
Symmetric	**Lose-lose** Avoid	**Win-win** Improve fairness, if needed
Asymmetric	**Bad win-lose** Protect from exploitation	**Good win-lose** Turn into win-win by value transfer

Support Favorable Interactions with Personal Digital Assistants

Task	Technology
Support situational / context awareness	**Social Mirror**
Facilitate profitable interactions	**Social Adapter**
Avoid lossful interactions	**Social Protector**
Incentivize favorable interactions / support value transfer	**Social Money**



The „Social Mirror“ Would Give Personal Feedback

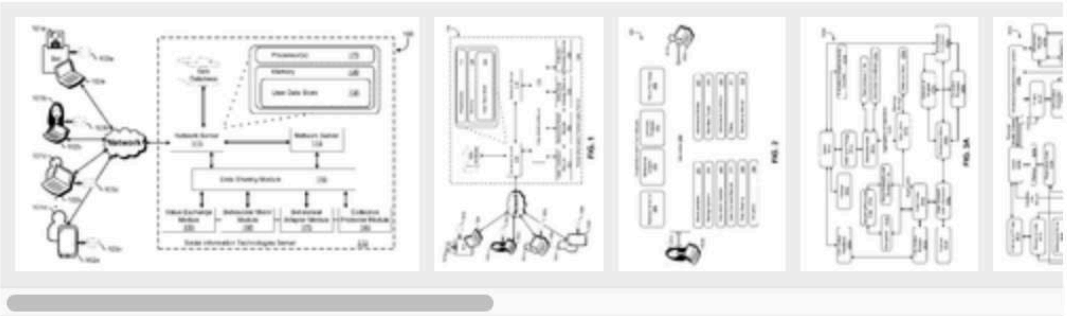
Patent „Interaction Support Processor“

Interaction support processor

Abstract

Disclosed are various embodiments for creating technological systems and methods to support favorable kinds of interactions in techno-socio-economic-environmental systems by determining the value of interactions between components of a system, raising awareness for value-changing interactions, supporting a more successful execution of value-increasing interactions while avoiding value-decreasing ones, and facilitating value exchange, with the aim of increasing the component and systemic benefits, while protecting sensitive information where needed.

Images (11)



US20160350685A1

US Application

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Inventor: Dirk Helbing

Original Assignee: Dirk Helbing

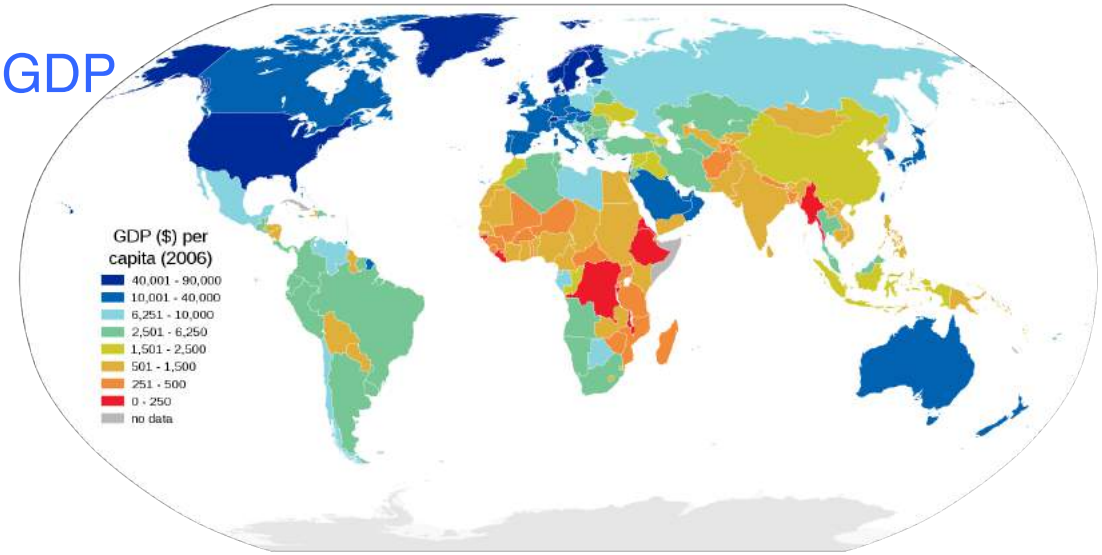
Priority date : 2014-02-04

Family: US (1) EP (1) CN (1) WO (1)

Date	App/Pub Number	Status
2015-02-04	US15116772	Pending
2016-12-01	US20160350685A1	Application

Build Social Capital

GDP



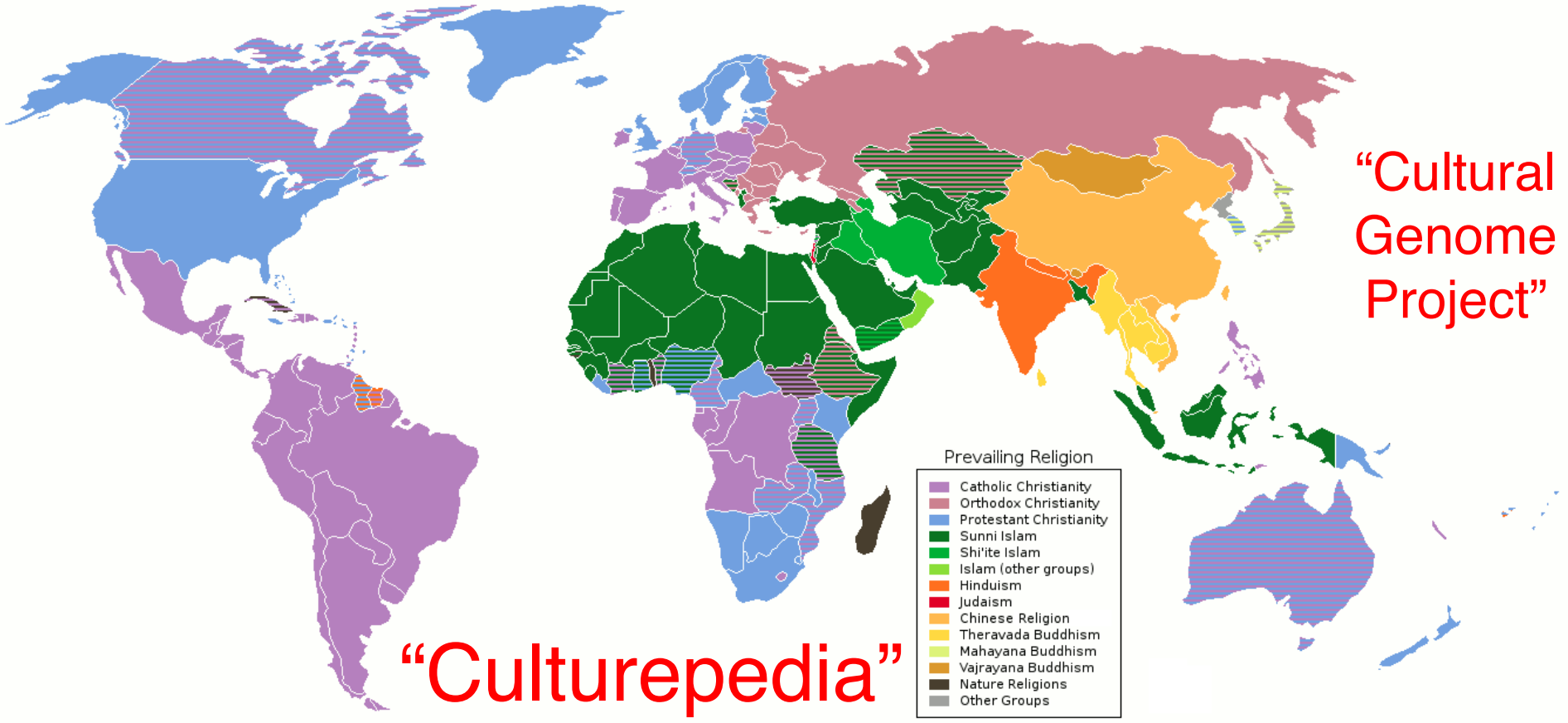
Gross Domestic Product per capita in 2006, world map. Bamse, CC-BY-SA 3.0. Wikimedia Commons.

Measure social capital:
Reputation, trust, solidarity, compliance, …

Happiness

Satisfaction with Life Index Map - Map was published in White, A. (2007). A Global Projection of Subjective Well-being: A Challenge To Positive Psychology? Psychtalk 56, 17-20.

Discover, Use and Combine the Success Principles Underlying Different Cultures



"Cultural Genome Project"

"Culturepedia"

Overcome the large degree of "cultural analphabetism"

Digital Democracy:
Boosting collective intelligence

Dirk Helbing, Contributor
Professor of Computational Social Science, complex systems expert, member of the German Academy of Sciences "Leopoldina"

How to make democracy work in the digital age

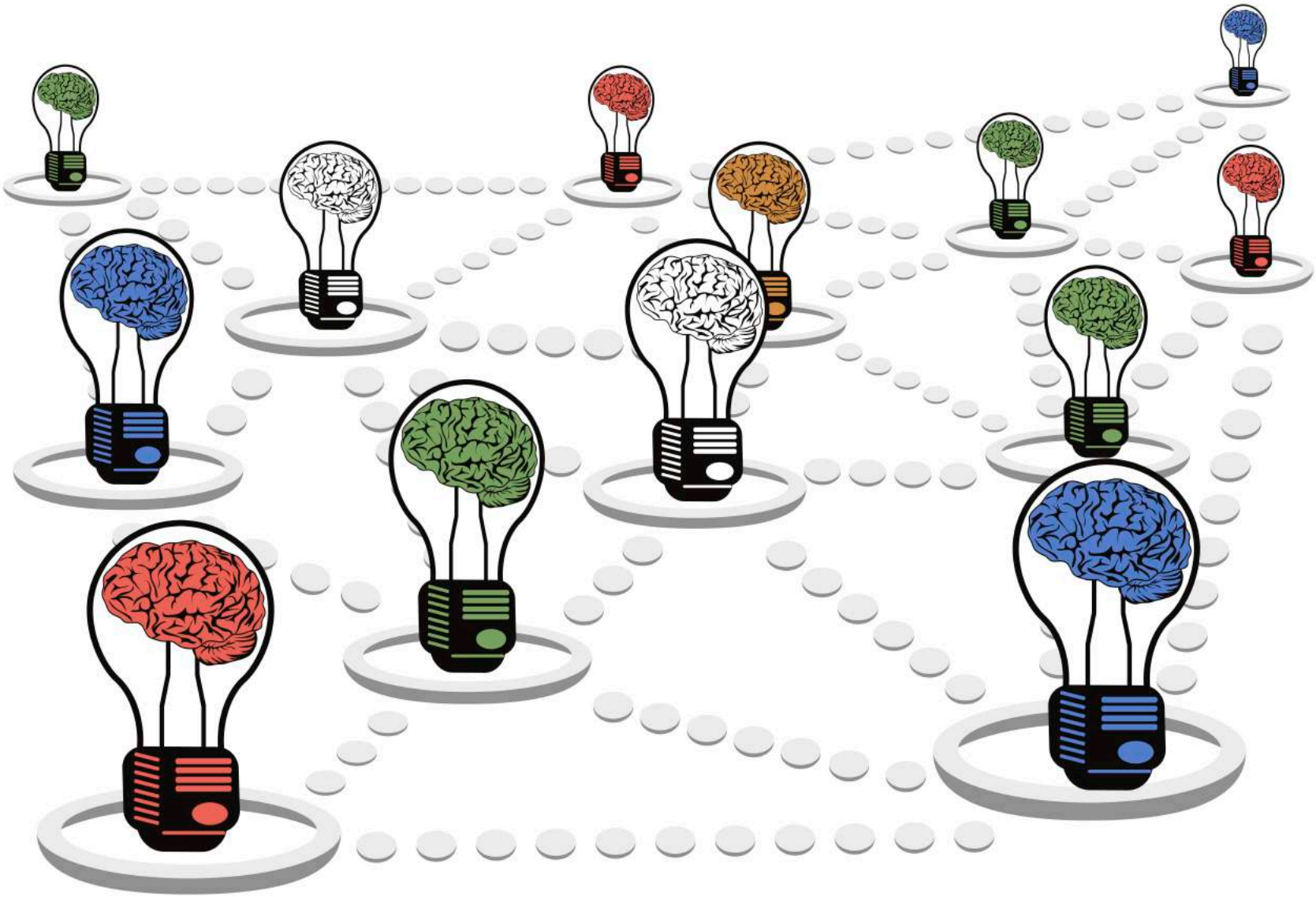
08/04/2016 06:44 am ET

By Prof. Dirk Helbing and Stefan Klauser, ETH Zurich

Recently, we have heard many complaints about how democracy works these days – or maybe rather why it doesn't work. In a recent Huffington post article, Dhruva Jaishankar, a Fellow at the Brookings Institution in India, claimed that digital democracy is the evil that makes our world ungovernable.[1] We argue that Iaishankar defines digital democracy in a flawed and misleading way. This could cause serious misunderstandings of what the problems are and what are the possible solutions. In the following we will show that digital democracy – if properly understood[2] – is the most promising way to build prosperous societies in the digital age.

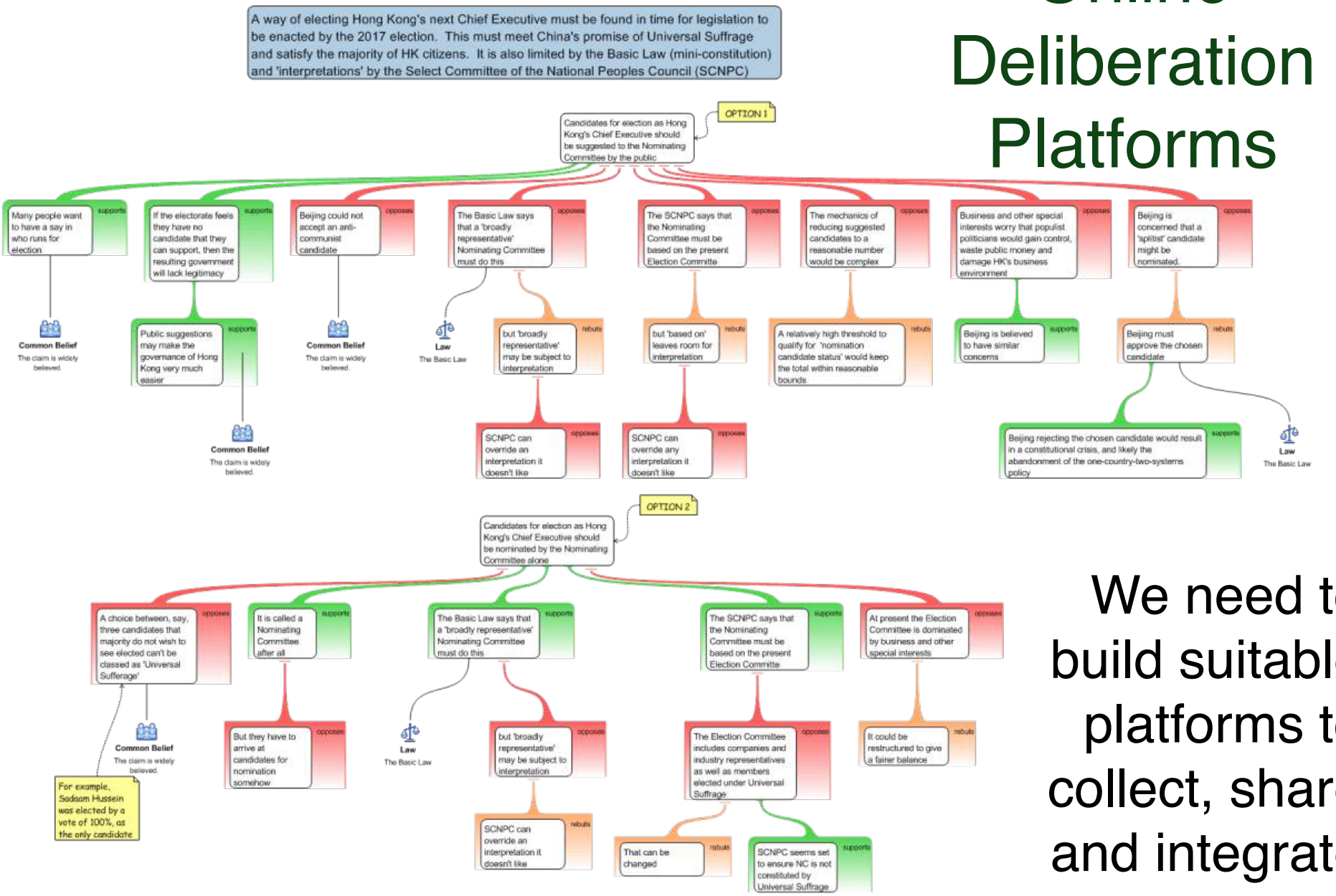
Brexit, Trump, AfD - is the Internet creating protest voters?

Bring the Best Ideas of Many Minds Together



http://medialniproroci.blogspot.ch/2013/04/sharing-is-new-shoppingand-working.html

Online Deliberation Platforms



We need to build suitable platforms to collect, share and integrate ideas

IMAGINECHINA/CORBIS

Many choices that people consider their own are already determined by algorithms.

Build digital democracy

Open sharing of data that are collected with smart devices would empower citizens and create jobs, say **Dirk Helbing** and **Evangelos Pournaras**.


Empower Polis
Digital Agora

Diversity Wins, Not the Best

Leaderboard

Display top 20 leaders.

Rank	Team Name	Best Score	% Improvement	Last Submit Time
1	BellKor's Pragmatic Chaos	0.8558	10.05	2009-06-26 18:42:37
Grand Prize - RMSE <= 0.8563				
2	PragmaticTheory	0.8582	9.80	2009-06-25 22:15:51
3	BellKor in BigChaos	0.8590	9.71	2009-05-13 08:14:09
4	Grand Prize Team	0.8593	9.68	2009-06-12 08:20:24
5	Dace	0.8604	9.56	2009-04-22 05:57:03
6	BigChaos	0.8613	9.47	2009-06-23 23:06:52
Progress Prize 2008 - RMSE = 0.8616 - Winning Team: BellKor in BigChaos				
7	BellKor	0.8620	9.40	2009-06-24 07:16:02
8	Gravity	0.8634	9.25	2009-04-22 18:31:32
9	Opera Solutions	0.8638	9.21	2009-06-22 05:53:30
10	xlvector	0.8639	9.20	2009-06-26 13:49:04
11	xiangliang	0.8639	9.20	2009-06-26 07:47:34
12	BruceDengDaoCiYiYou	0.8641	9.18	2009-06-02 17:08:31
13	Ces	0.8642	9.17	2009-06-24 14:34:14
14	majia2	0.8642	9.17	2009-06-23 08:07:50

Top-down and majority decisions obstruct collective intelligence

Wisdom of crowds requires independent exploration and then integration

Optimal Incentives for Collective Intelligence

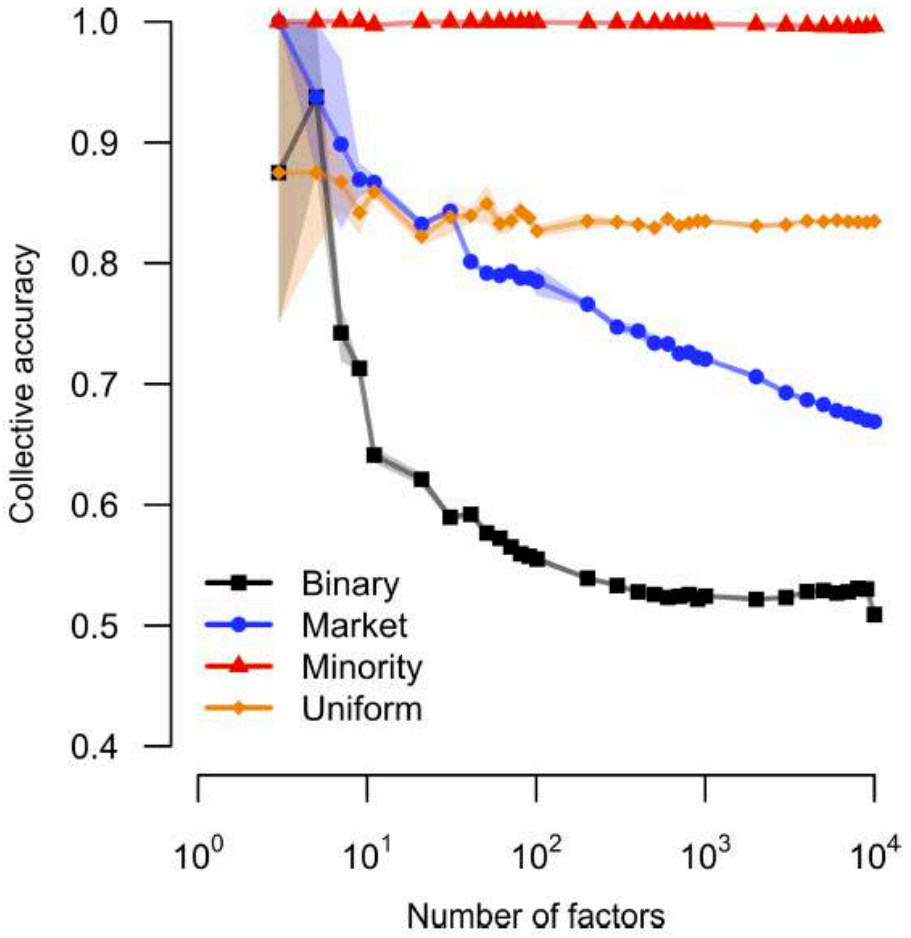
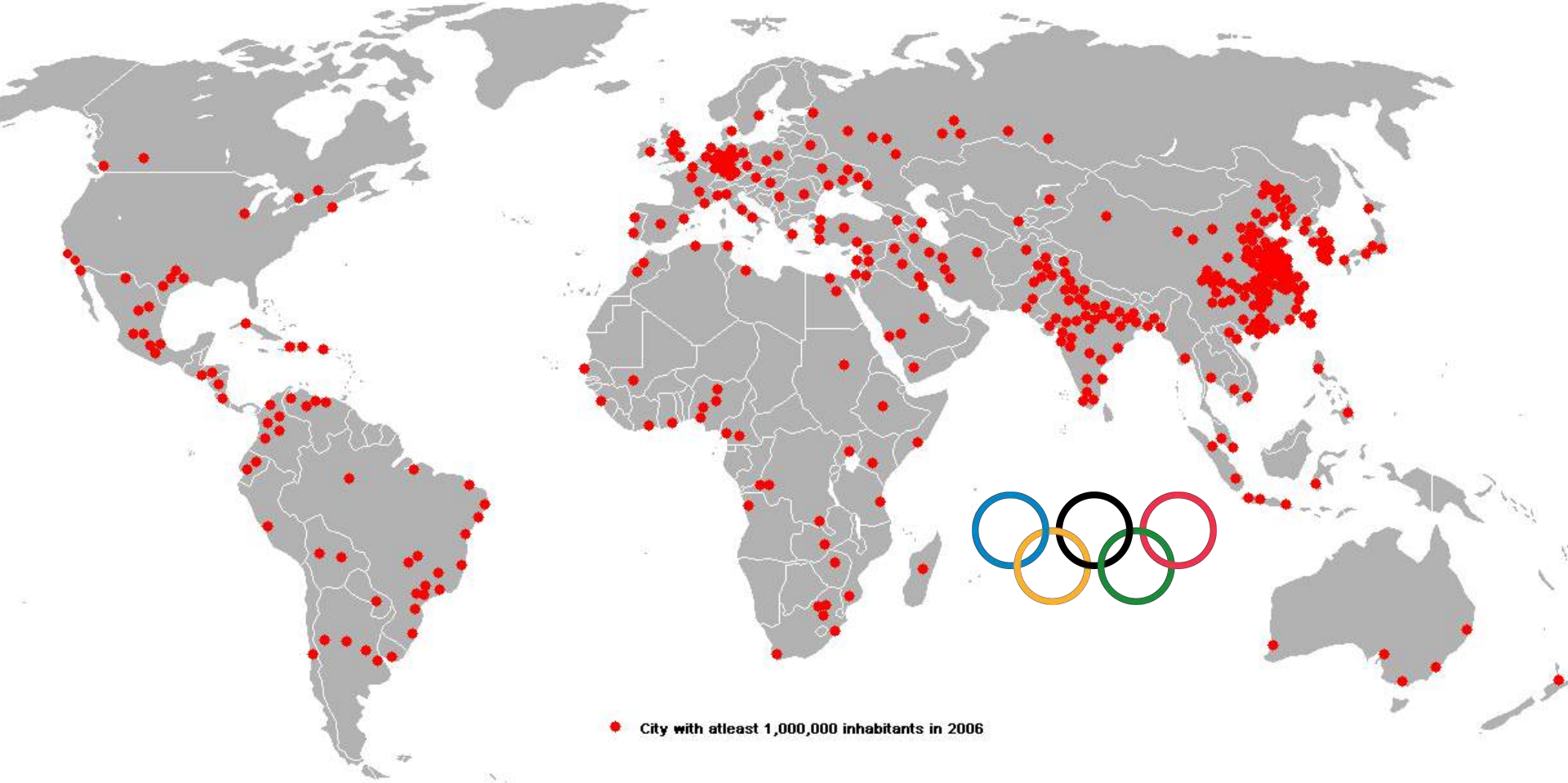


Fig. 2. Collective accuracy at equilibrium as a function of the number of independent factors across different reward systems. Lines and shaded regions show the mean and SD of 10 independent simulations with different randomly generated values for the factor coefficients. Points on each curve show the precise values of *n* for which simulations were carried out equally spaced within each multiple of 10.

R. Mann and DH, PNAS (2017)

Countering Global Problems Bottom-Up: City Olympics for Better Climate, Energy, Sustainability + Resilience Solutions



Public domain (SoccerFan (update to a map done by Bogdan)

Open Source Urbanism

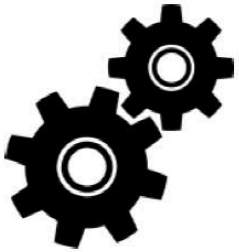
Sergei Zhilin and DH

Openness

Collaboration

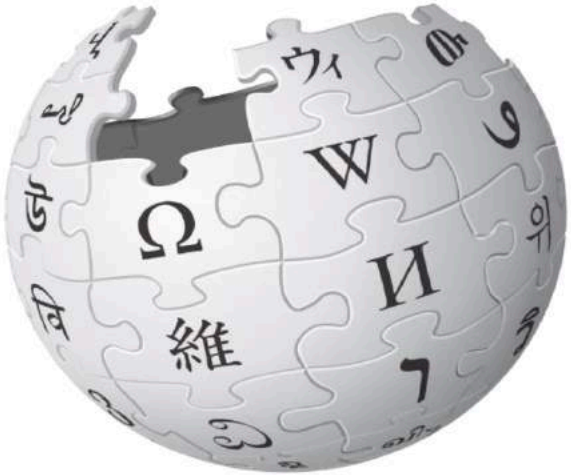
Modularity

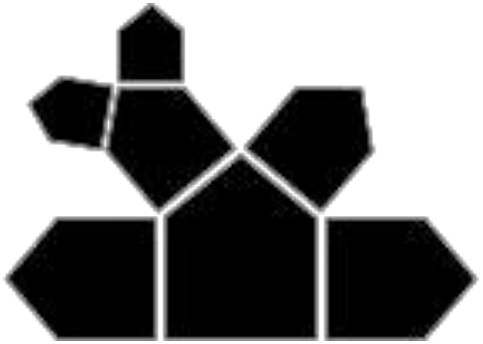
Granularity

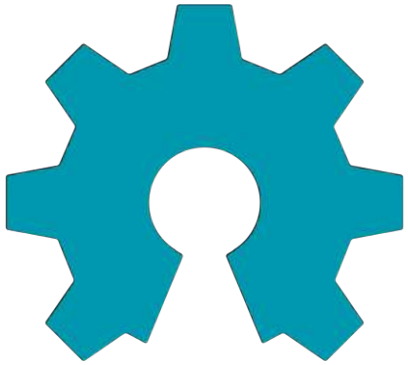


Low-cost integration

creative commons







open source hardware

WIKIPEDIA
The Free Encyclopedia

open source architecture

GitHub

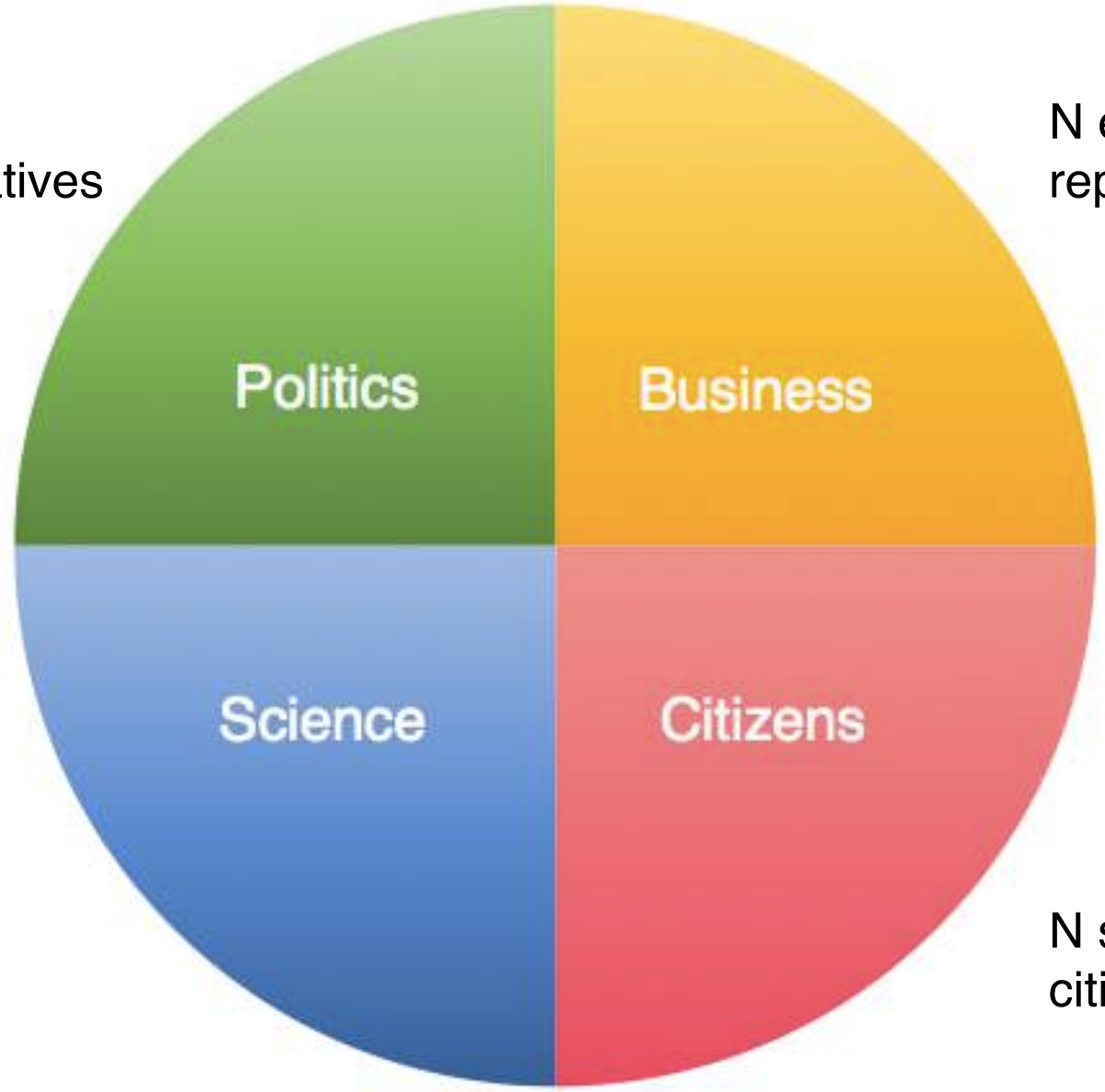
Glocalisation Rather than Globalisation

- Think global
- Act local (and diverse)
- Experiment
- Learn from each other
- Help each other

A Proposal for a New Organization of the World

N regional representatives

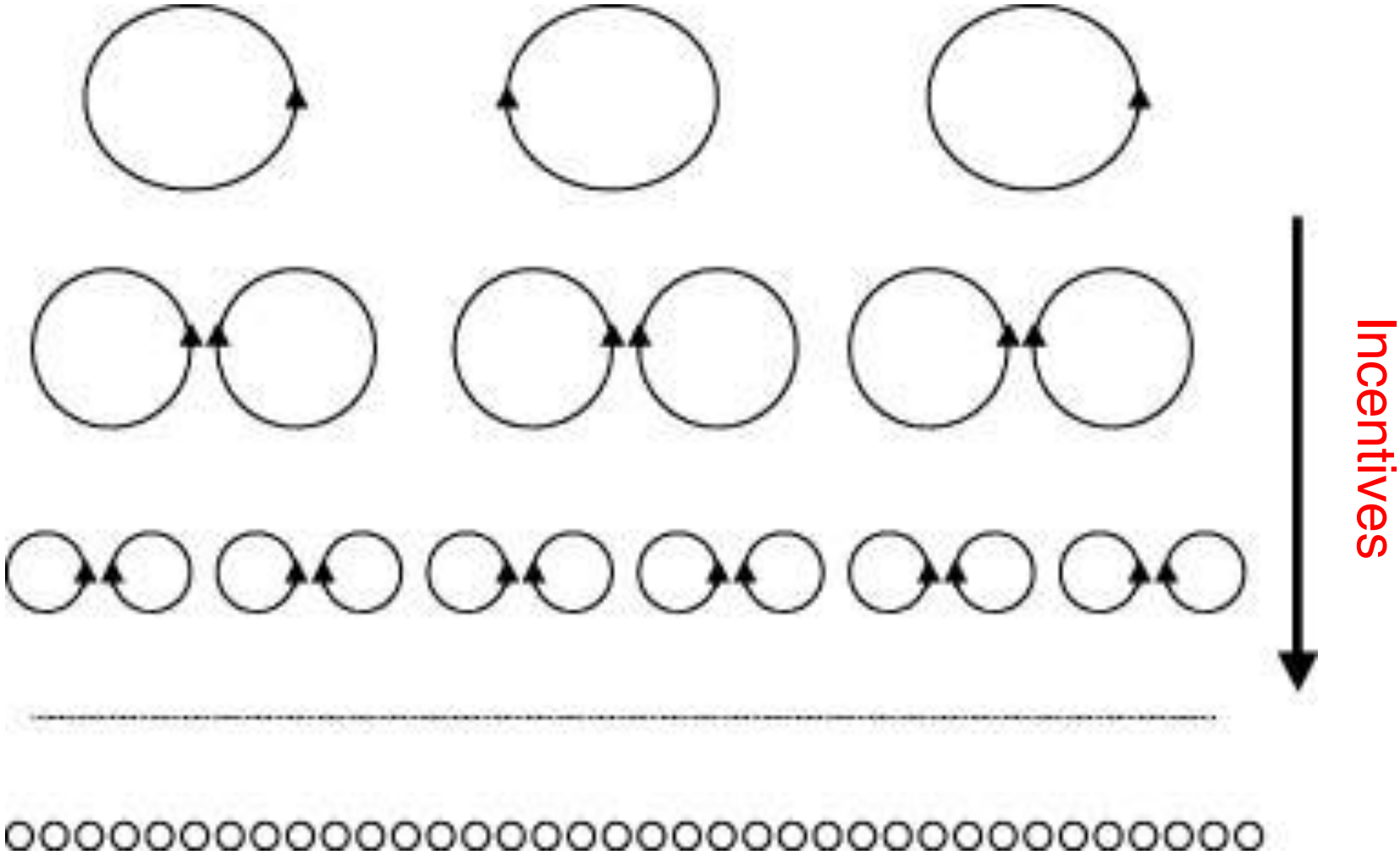
N elite representatives



N best scientists

N smart citizens

Multi-Level Organization of Society

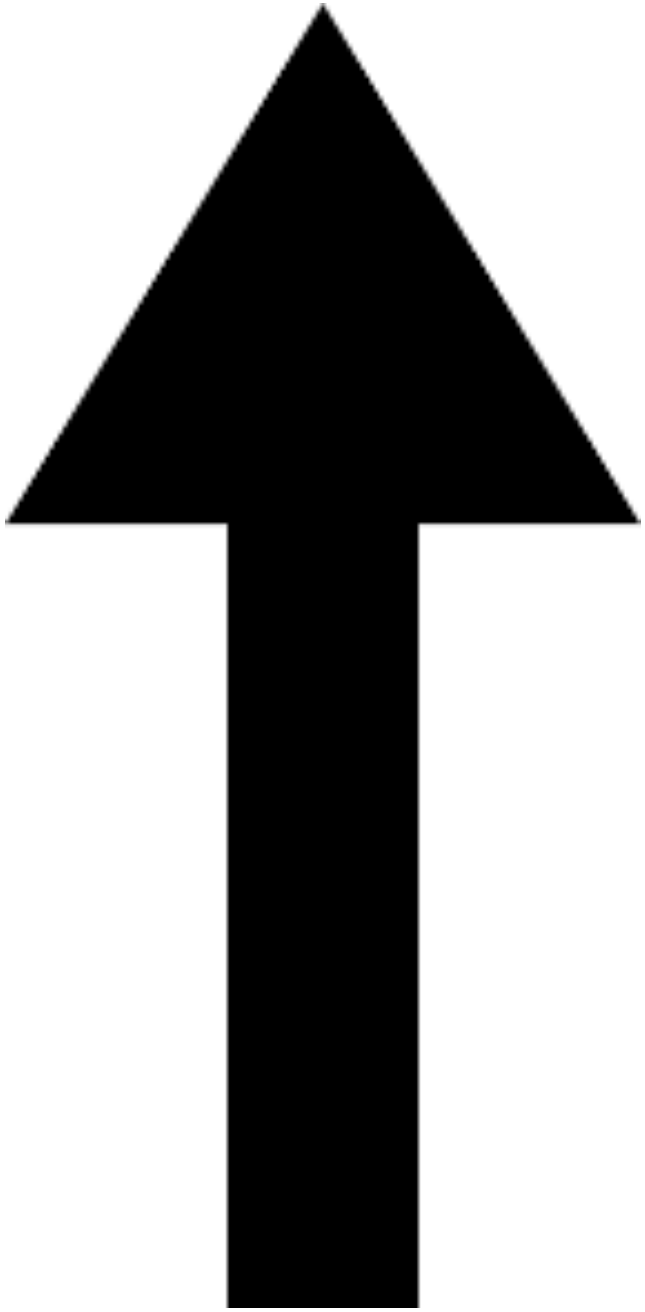


Technology-supported subsidiarity principle

MONEY, MONEY, MONEY!

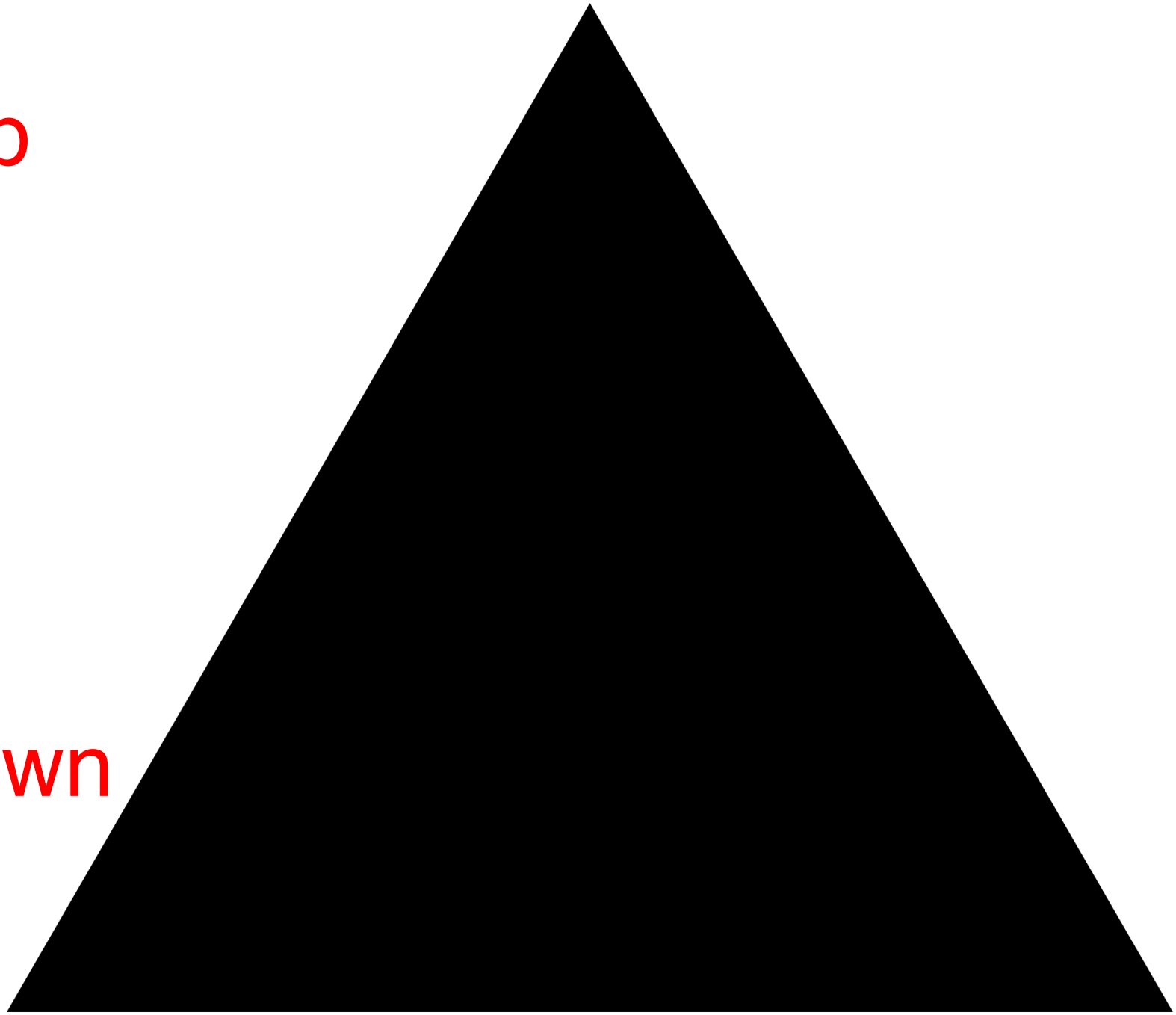
Money makes the world go round. But it's now the biggest obstacle to the progress of humanity.

More



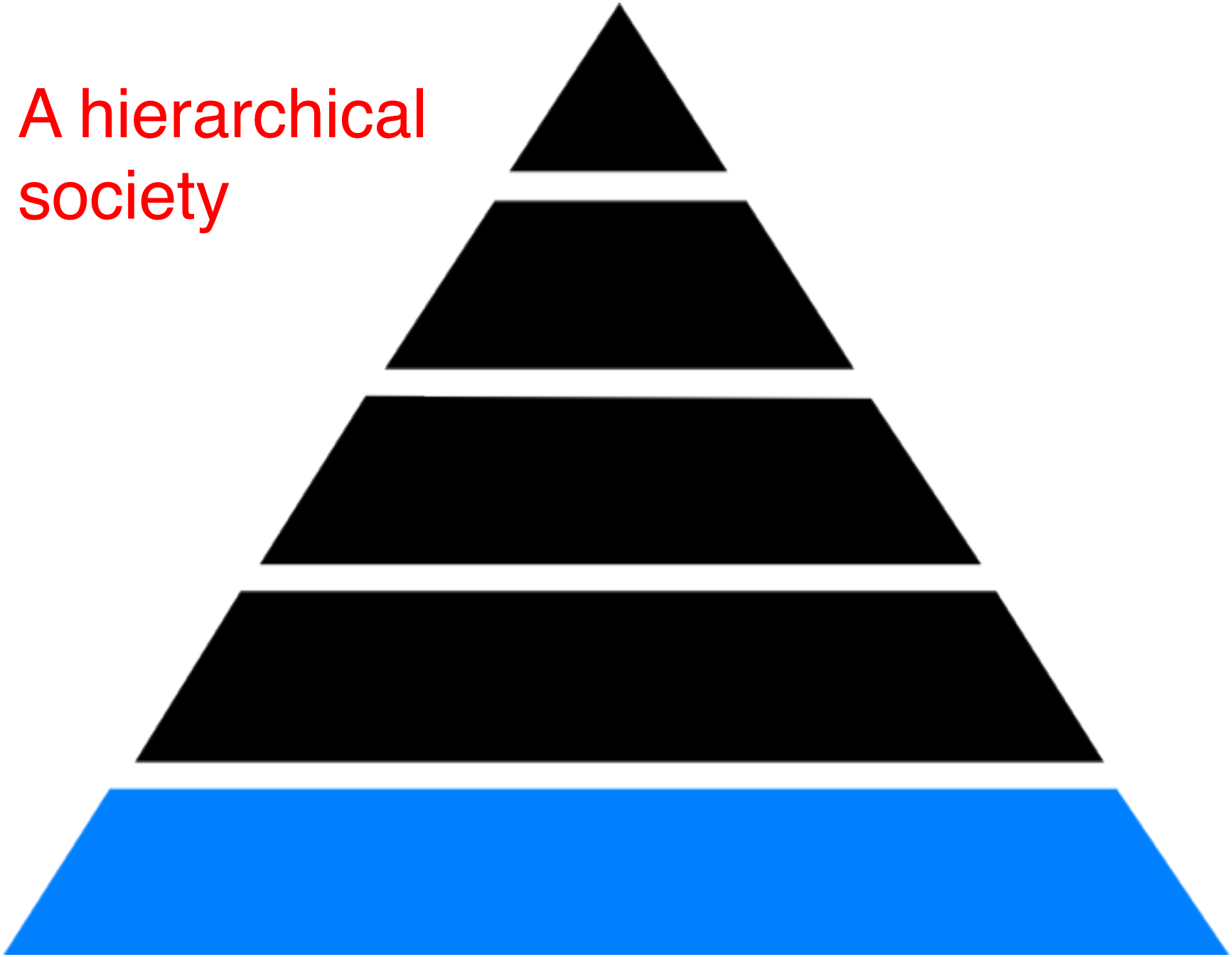
Less

Top



Down

A hierarchical society

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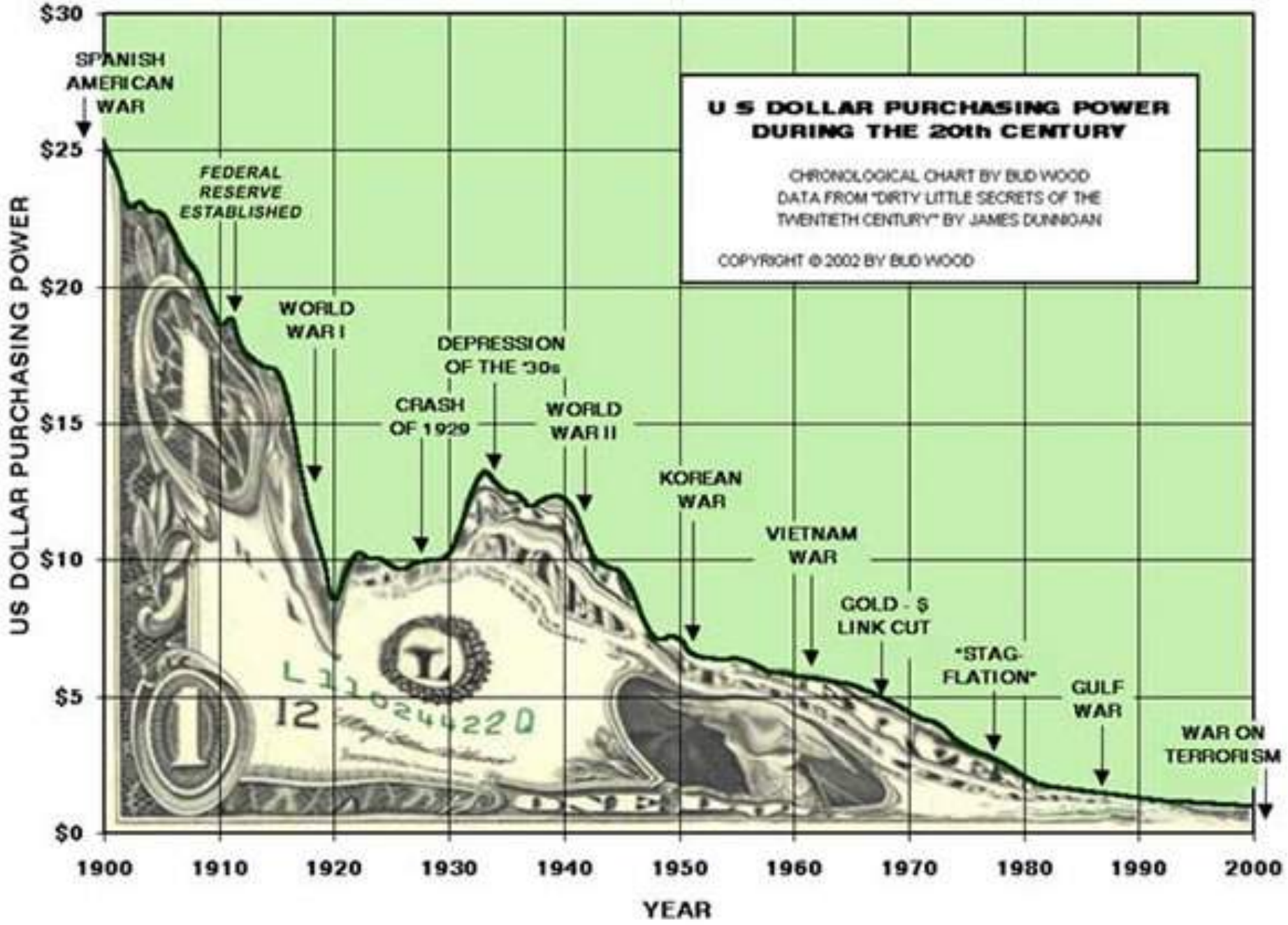
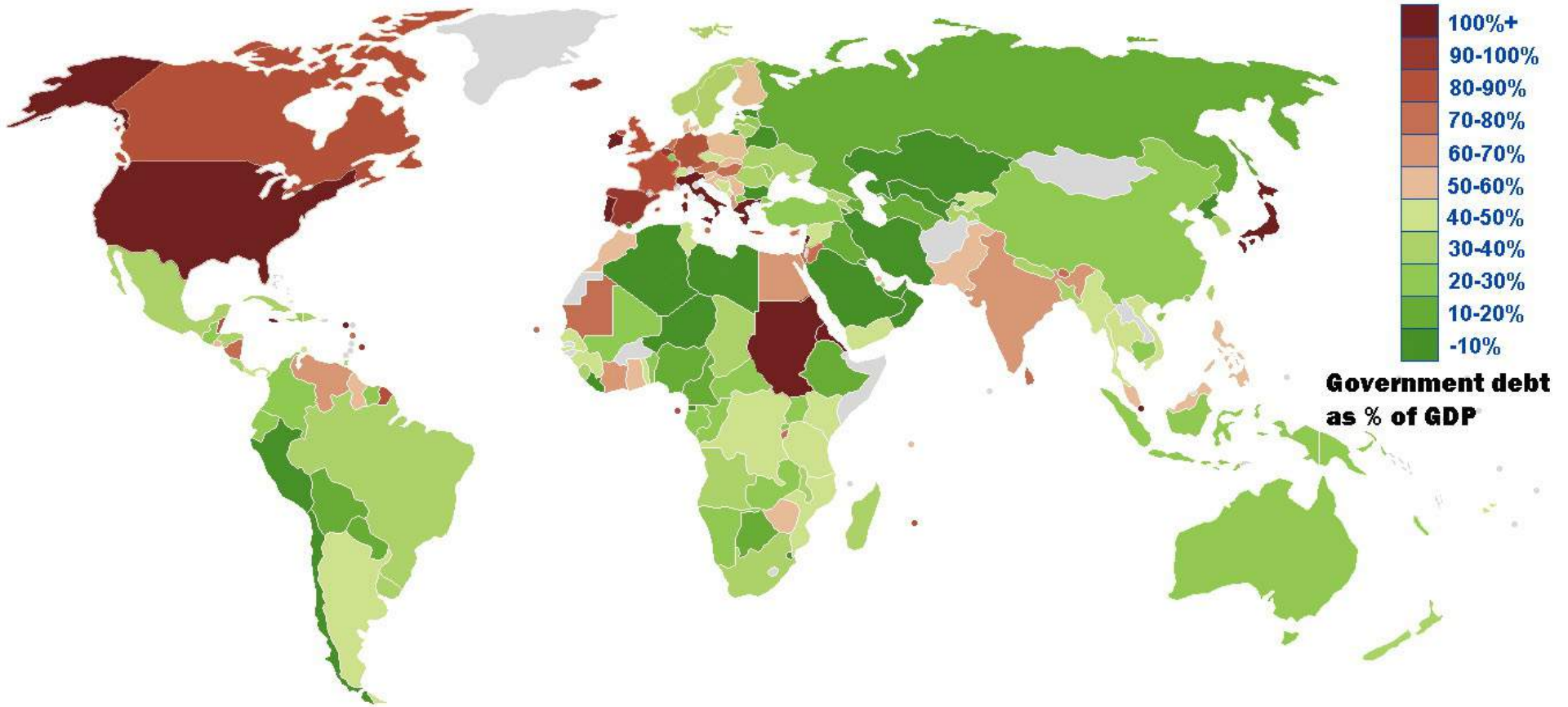
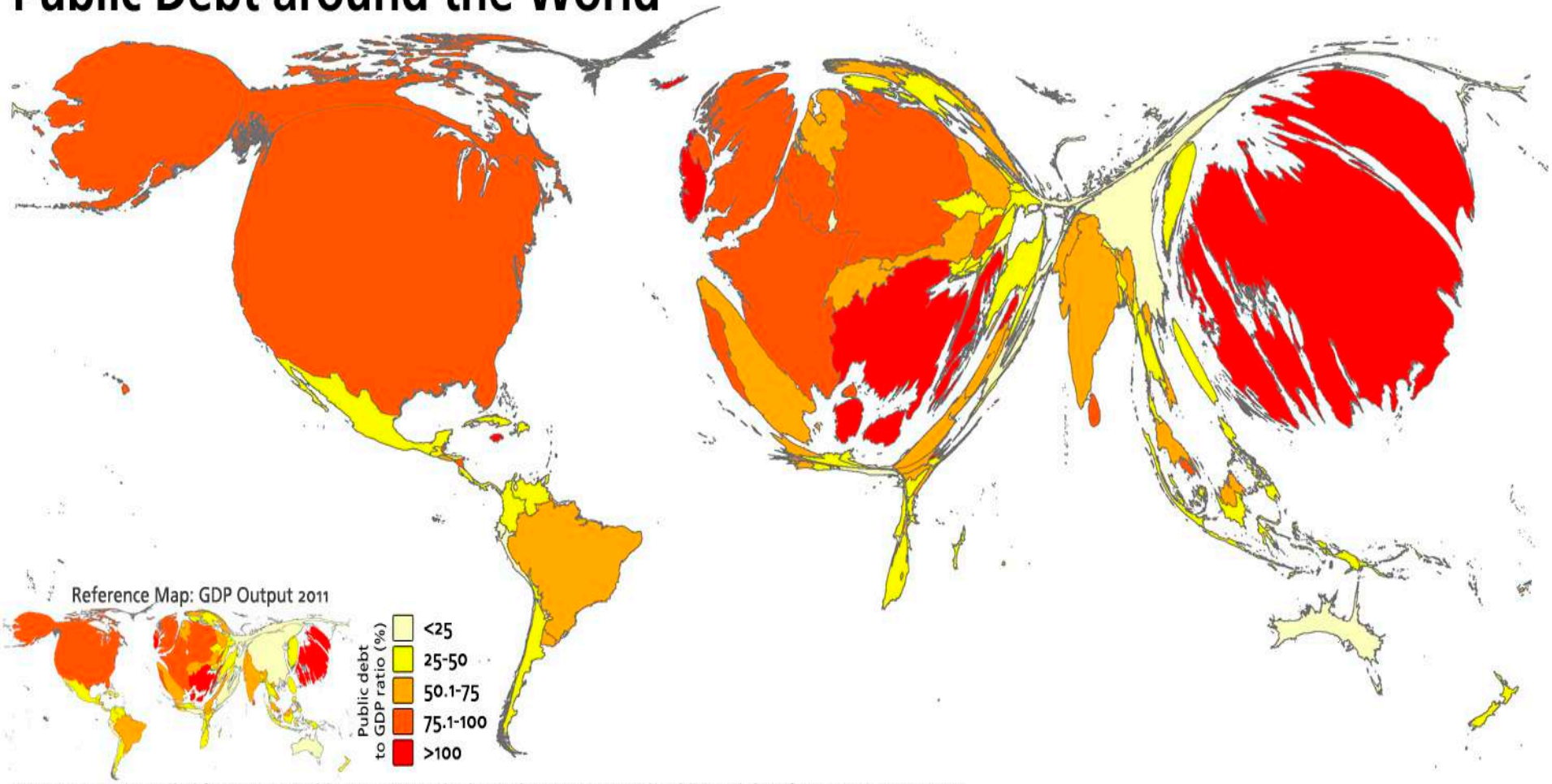

U S DOLLAR PURCHASING POWER
DURING THE 20th CENTURY
CHRONOLOGICAL CHART BY BUD WOOD
DATA FROM "DIRTY LITTLE SECRETS OF THE TWENTIETH CENTURY" BY JAMES DUNNIGAN
COPYRIGHT © 2002 BY BUD WOOD
US DOLLAR PURCHASING POWER
$30
$25
$20
$15
$10
$5
$0
SPANISH AMERICAN WAR
FEDERAL RESERVE ESTABLISHED
WORLD WAR I
DEPRESSION OF THE '30s
CRASH OF 1929
WORLD WAR II
KOREAN WAR
VIETNAM WAR
GOLD - $ LINK CUT
"STAG-FLATION"
GULF WAR
WAR ON TERRORISM
1900
1910
1920
1930
1940
1950
1960
1970
1980
1990
2000
YEAR

Government Debt in GDP



$54 Trillion

Public Debt around the World



Data Sources: Compiled from IMF, World Economic Outlook Database 04/2011, with additional data from IMF & EUROSTAT
Map created by Benjamin D. Hennig, Sasi Research Group, University of Sheffield

www.viewsoftheworld.net

DEBT

THE FIRST
5,000 YEARS

DAVID GRAEBER

"FRESH...FASCINATING...
THOUGHT-PROVOKING...
AND EXCEEDINGLY TIMELY."
—GILLIAN TETT,
FINANCIAL TIMES

THANK YOU! COME AGAIN!

MELVILLE HOUSE
PUBLISHING

Who Owns the Central Banks?

Land	Notenbank	Wem gehört die Notenbank?	börsennotiert?
USA	Federal Reserve	regionale Notenbanken: 100 % private Banken / Board of Governors: staatlich	nein
Eurozone	Europäische Zentralbank (EZB)	100 % nationale Notenbanken, davon 25 rein staatlich, zwei rein privat und eine gemischt	nein
Italien	Banca d'Italia	100 % Banken und Versicherungen	nein
Griechenland	Bank of Greece	100 % private Aktionäre	ja: GRS004013009
Belgien	Banque Nationale de Belgique	50 % Staat, 50 % private Aktionäre	ja: BE0003008019
Schweiz	Schweizer Nationalbank	rund 55 % Kantone und Kantonalbanken, rund 45 % Privatbesitz	ja: CH0001319265
Japan	Bank of Japan	55 % Staat, 45 % Privatbesitz	ja
Südafrika	South African Reserve Bank	zu 100 % im Privatbesitz	nein, aber OTC-Handel
Türkei	Central Bank of the Republic of Turkey	Staat (mind. 51 %), Rest: türkische Banken, Unternehmen und Privatpersonen	nein

http://www.godmode-trader.de/artikel/wem-gehoeren-die-notenbanken-wirklich,4843326

The more debts governments make, the more is earned by those who own the Central Banks. This creates a conflict of interest.

15. Februar 2016 14:00 Uhr

Das totale Versagen von „Quantitative Easing“ in Zahlen

FMW-Redaktion

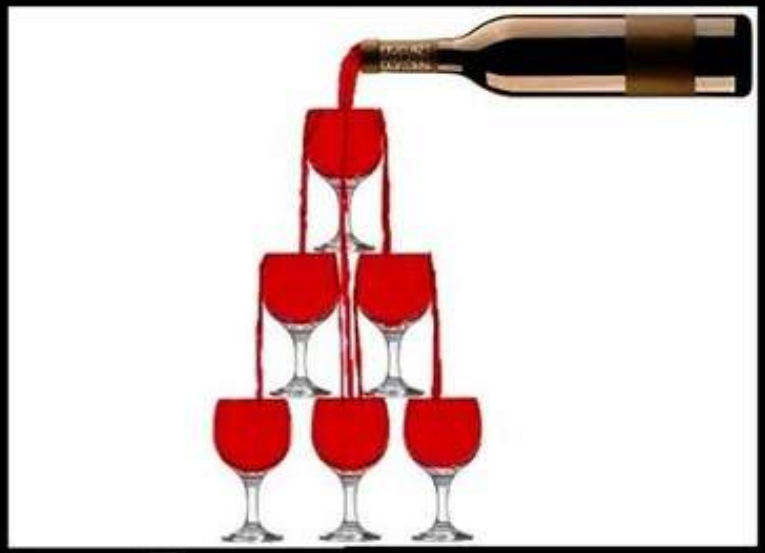
Es ist ein offenes Geheimnis, dass das „Quantitative Easing“ (QE), also die Anleihekaufprogramme der Notenbanken nicht funktionieren, auch wenn diese konstant das Gegenteil behaupten. Ein Schwergewicht der US-Analystenszene hat jetzt Daten veröffentlicht, die aus seiner Sicht das totale „Quantitative Failure“ besser illustrieren sollen...

Quantitative Easing

Alan Greenspan, von 1987 bis 2006 Chef der Federal Reserve, war nach Meinung vieler Beobachter der Auslöser der Zinssenkungsspirale und gilt vielen damit als einer der Hauptverantwortlichen der negativen Folgen. Foto: White House photo by Shealah Craighead – Whitehouse.gov / Gemeinfrei.

Trickle down economics

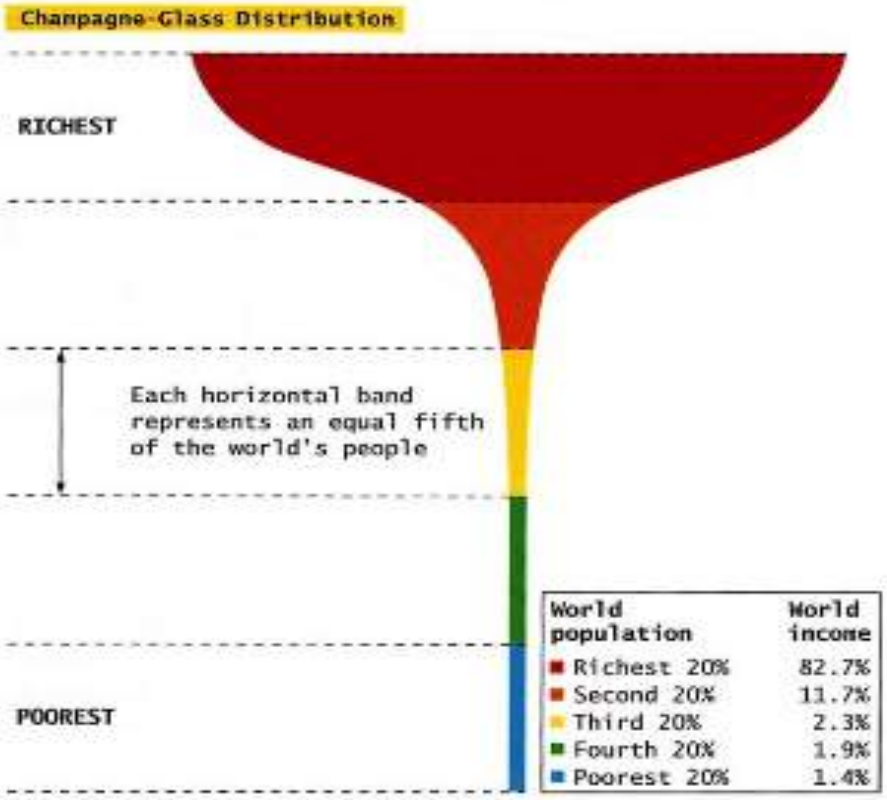
How we're told it works



What actually happens

Distribution of Wealth

- Nearly half of American families earned the minimum amount needed for a decent standard of living
- Unequal distribution meant most consumers had too little money to buy the goods produced by American factories

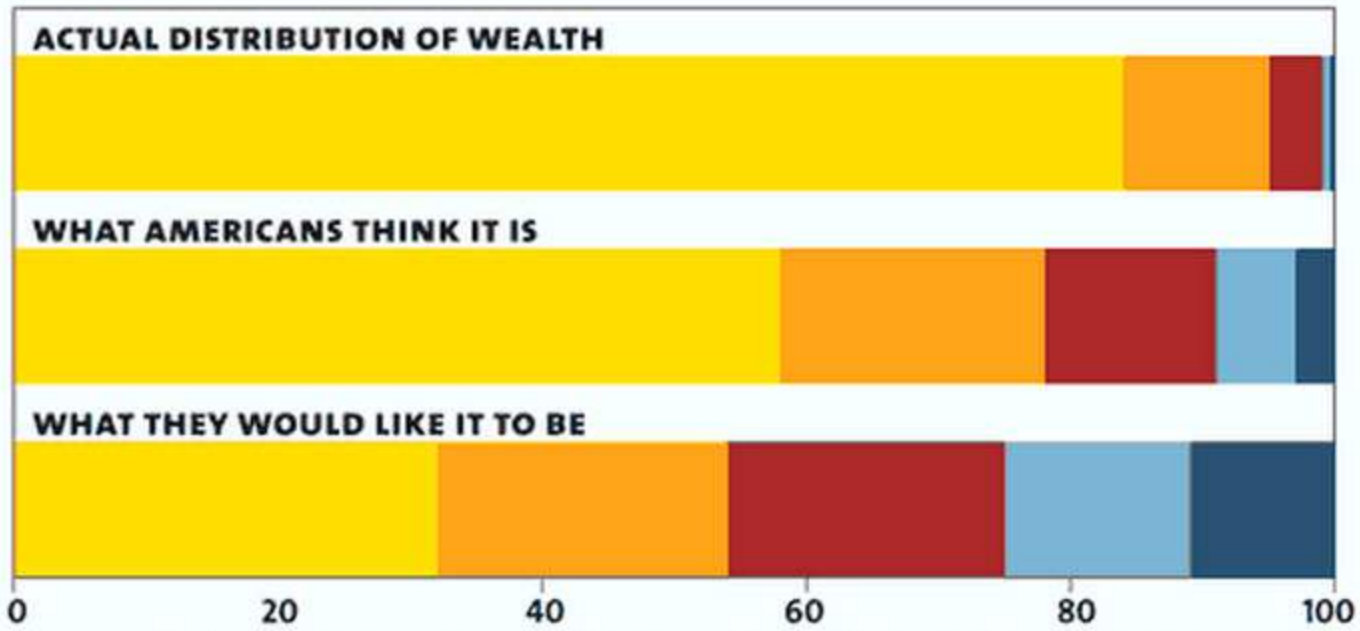


A world in which one percent of humanity controls as much wealth as the other 99 percent will never be stable.

http://time.com/4501910/president-obama-united-nations-speech-transcript/

OUT OF BALANCE

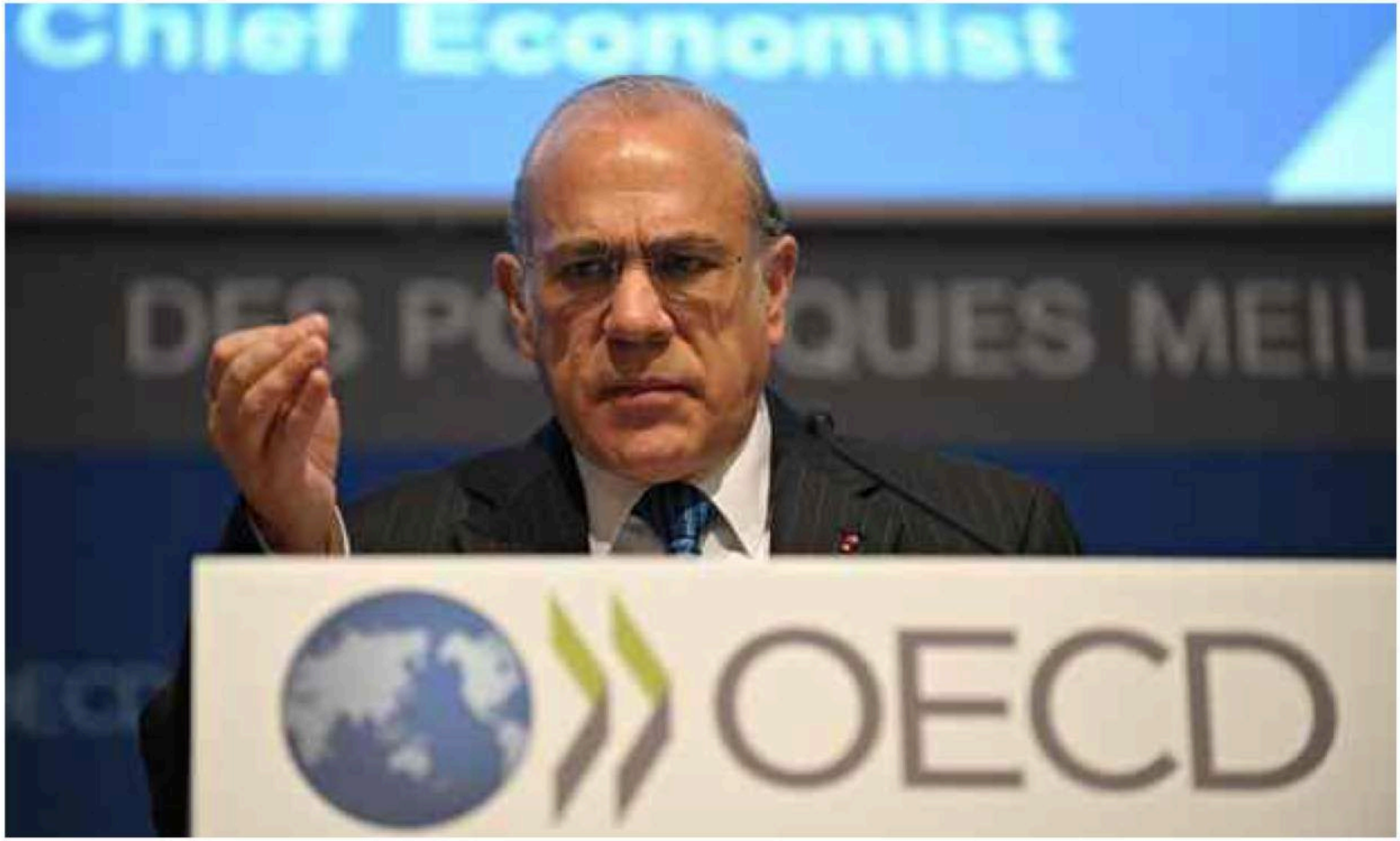
A Harvard business prof and a behavioral economist recently asked more than 5,000 Americans how they thought wealth is distributed in the United States. Most thought that it's more balanced than it actually is. Asked to choose their ideal distribution of wealth, 92% picked one that was even more equitable.



Source: Michael I. Norton, Harvard Business School; Dan Ariely, Duke University

Revealed: how the wealth gap holds back economic growth

OECD report rejects trickle-down economics, noting 'sizeable and statistically negative impact' of income inequality



OECD secretary-general Angel Gurría said that 'addressing high and growing inequality is critical to promote strong and sustained growth'. Photograph: Eric Piermont/AFP/Getty Images

DEMOCRATIC CAPITALISM

brand eins Thema

Innovation

Der Branchenreport von brand eins Wissen und Statista

Können wir von Algorithmen eine höhere Moral als von Menschen erwarten?
(Seite 6)

Die Jungs in Shenzhen bauen dir ein neues Handy, wie dir die Jungs in Palo Alto eine neue Website bauen.
(Seite 68)

Es gibt eben Dinge, die können Roboter besser.
(Seite 12)

Innovation ist, in einem Satz, der berechtigte Anlass für die Hoffnung, dass es besser wird.
(Seite 24)

Was wirklich gebraucht wird, beweist sich erst mit der Zeit.
(Seite 44)

Schöner, höher, weiter – über Sicherheit reden wir später.
(Seit 84)

Die Macht von Systemen ist groß.
(Seite 130)

Die Besten ihres Fachs: **DIE 496 INNOVATIVSTEN FIRMEN DEUTSCHLANDS 2018**

www.brandeinswissen.de 5. Jahrgang Heft 8 Februar – April 2018 Euro 9,50 CHF 13,50

4 198760 109500 08

edition brand eins 1. Jahrgang Heft 1 Februar - April 2018 Euro 15 CH

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NEU

Was würdest Du arbeiten, wenn Du nicht musst?

Grundeinkommen

Eine kapitalistische Utopie

Die Digitalisierung wird alles verändern. Kennen wir,

1. Basic income

2. Investment premium

3. Multi-dimensional finance system

A Visionary, Future Money and Finance System

- Cancellation of income taxes, interest rates and debts (”great jubilee”).
- New money would be a public good that belongs 100% to The People.
- This money would be lent by individuals, corporations and governments.
- Exchange rates of regional currencies would be adapted to create a trade balance.
- The principle should be to keep money flowing rather than storing it.
- Imagine, each virtual coin had a programmable inflation rate or a finite life time. Then, money not spent would disappear and could be channeled where it is needed.

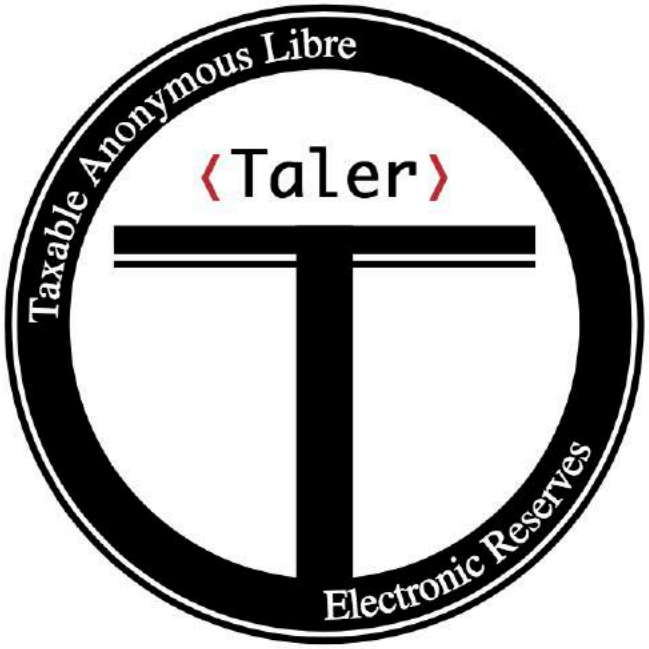

How Would This New System Come About?

Global Currency Reset – How to Do It?

If Banks Do Not Do Their Job…

Gaming

M PESA etc.



One-Click Cash Payments!

GNU Taler is an electronic payment system under development at Inria. We expect to make it operational in 2018. You can learn about Taler on this website, try the demo and look at our documentation.

Disaster Response App

1. Introduce basic income

Generate money to everyone’s benefit.

Overcome poverty. Satisfy basic needs.

Covering Basic Needs in the Robotic Age

- People would get a basic income covering their basic needs – this money would be just enough to cover monthly expenses, but no luxury. It would, therefore, be fully spent.
- There are at least three variants: (1) everyone gets the same monthly rate, (2) everyone gets 60% of the previous annual income according to the last three tax declarations, divided by 12 months, (3) a solution smoothly transitioning from (2) to (1).
- The basic income would not be paid from taxes, but created by the new money system.
- There would be no income tax, just a <20% VAT.
- Rented apartments would be “owned” by the people now renting them, more precisely lent from The People.

FuturICT @FuturICT · 4 May 2016

Robert **Reich**: **basic** income is the solution to 3 problems: lack of aggregate demand, inequality, insecurity #FoW

Future Corporations

- Privileged kings were replaced by privileged banks and corporations (“legal persons”)
- Corporation should serve the public interest
- Not only stock holders should control companies, but also normal people
- (Remember, future money would be lent from The People)
- Involving staff, suppliers, buyers, and local people in the decision-making can create systemic solutions that work for everyone – and are more profitable!

CATERPILLAR®

Executive Summary

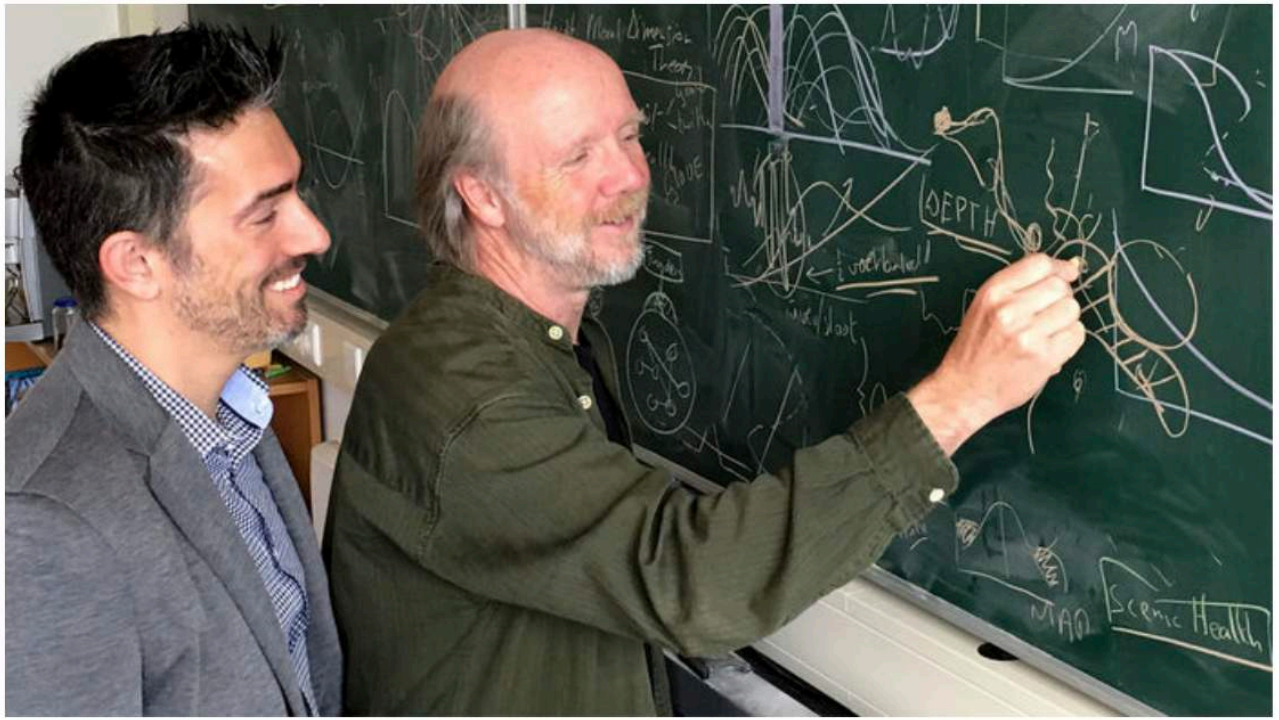
This document highlights the major breakthroughs and successes that praneo cofounders' have achieved over many years working within the Caterpillar group. The praneo way – *see annex 6* - originates from this field experience. It has been "objectivized", then further validated and enriched through other customers' transformational experiences: Nestlé, Cotecna, Valais canton, American Science of Engineering and many more.

Systemic context	**Operational** context
Caterpillar designs, produces and markets trucks, machines and engines to independent dealers who are licensed to sell to the final end-user. Culturally, growth is product driven meaning to improve machines with more functionalities, increased quality, safety and lower consumption.	Selling means pushing into the markets as many big profitable machines as possible to drive population market share. Strong focus on front-line operational excellence and product knowledge. The one-size-fits-all mindset drives very efficient global deployments which are somehow adapted locally via price actions and marcom.

2. Introduce investment premium

Unleash mass innovation by crowd funding for all.


ONLY 1%
OF ALL THINGS
HAVE BEEN INVENTED



Johan Bollen (left) and Marten Scheffer (right) say scientists should give each other money instead of writing and reviewing grants. INGRID VAN DE LEEMPUT

With this new system, scientists never have to write a grant application again

By **Jop de Vrieze** | Apr. 13, 2017 , 3:00 PM

AMSTERDAM—Almost every scientist agrees: Applying for research funding is a drag. Writing a good proposal can take months, and the chances of getting funded are often slim. Funding agencies, meanwhile, spend more and more time and money reviewing growing stacks of applications.

Investment Premium

- The investment premium would be an additional kind of money not usable for own consumption. It is intended to enable the support of great ideas, innovations, and social, economic, ecological or cultural projects.
- The projects would be realized by means of crowd funding.
- People would propose projects and compete for (shares of the) investment premiums. Projects that manage to collect enough funding / support would go forward.
- People with great ideas and engaging in projects that others appreciate would earn additional money.
- The investment premium could either be the same for everyone or depend on the level of education.
- It should not be given to friends or relatives, otherwise it will be reduced.

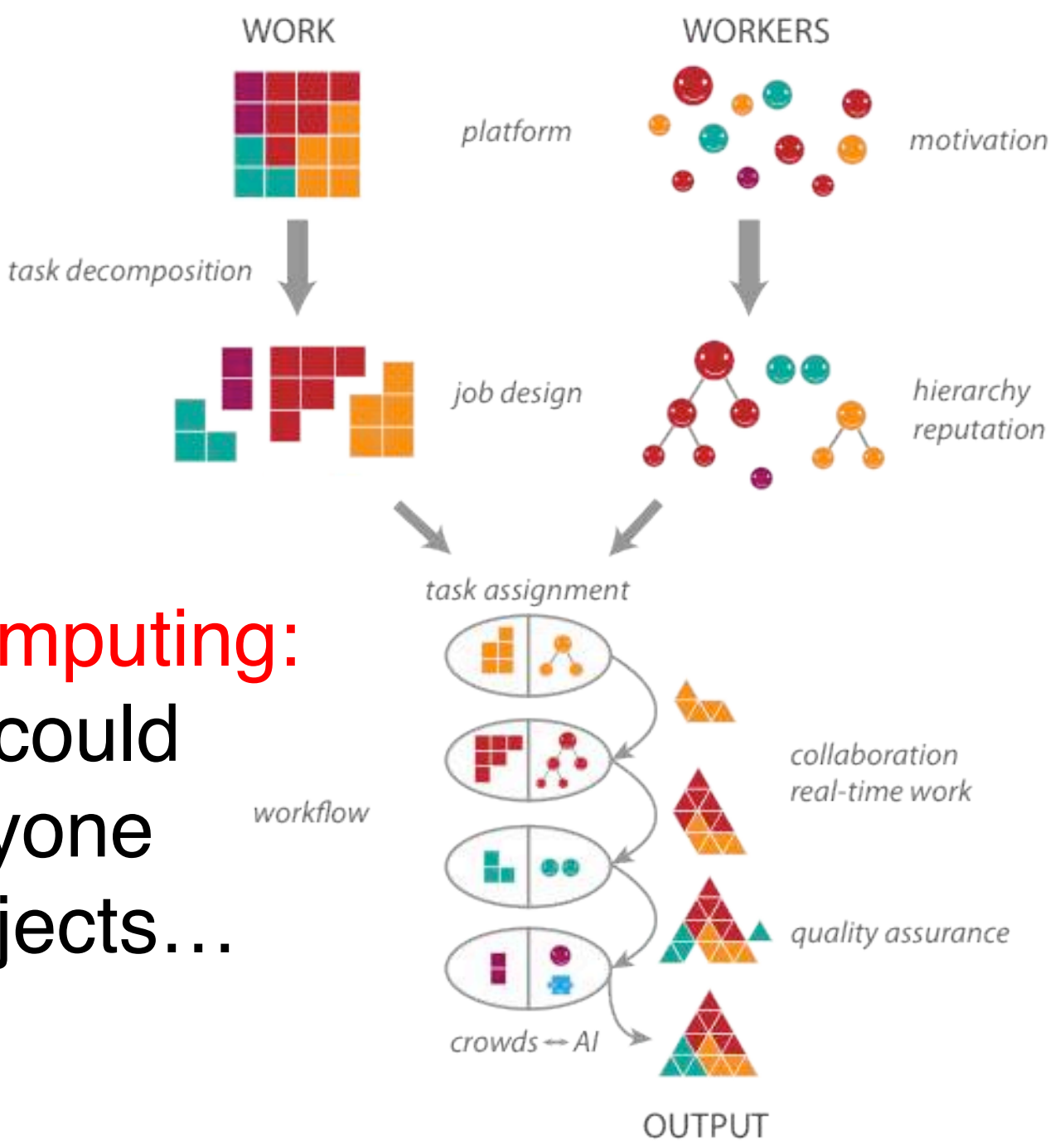

Shutterstock

The First Crowdfunded Skyscraper Is Almost Finished, and More Are Coming

Kelsey Campbell-Dollaghan
9/11/15 5:45pm • Filed to: ARCHITECTURE

24.0K 6

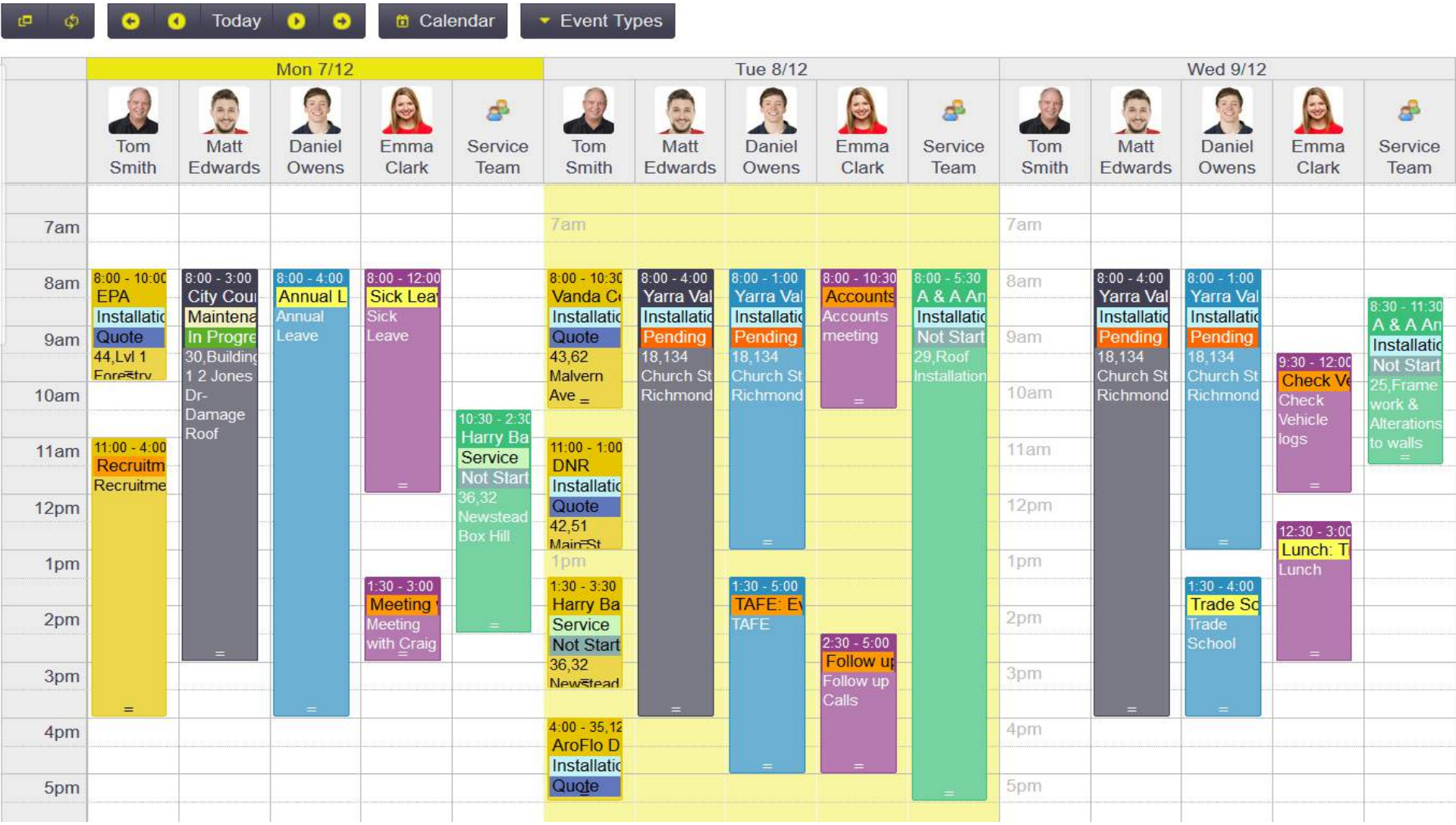
Similarly: Crowd funded medicine, technology!



Social Computing:

Software could help everyone to run projects…

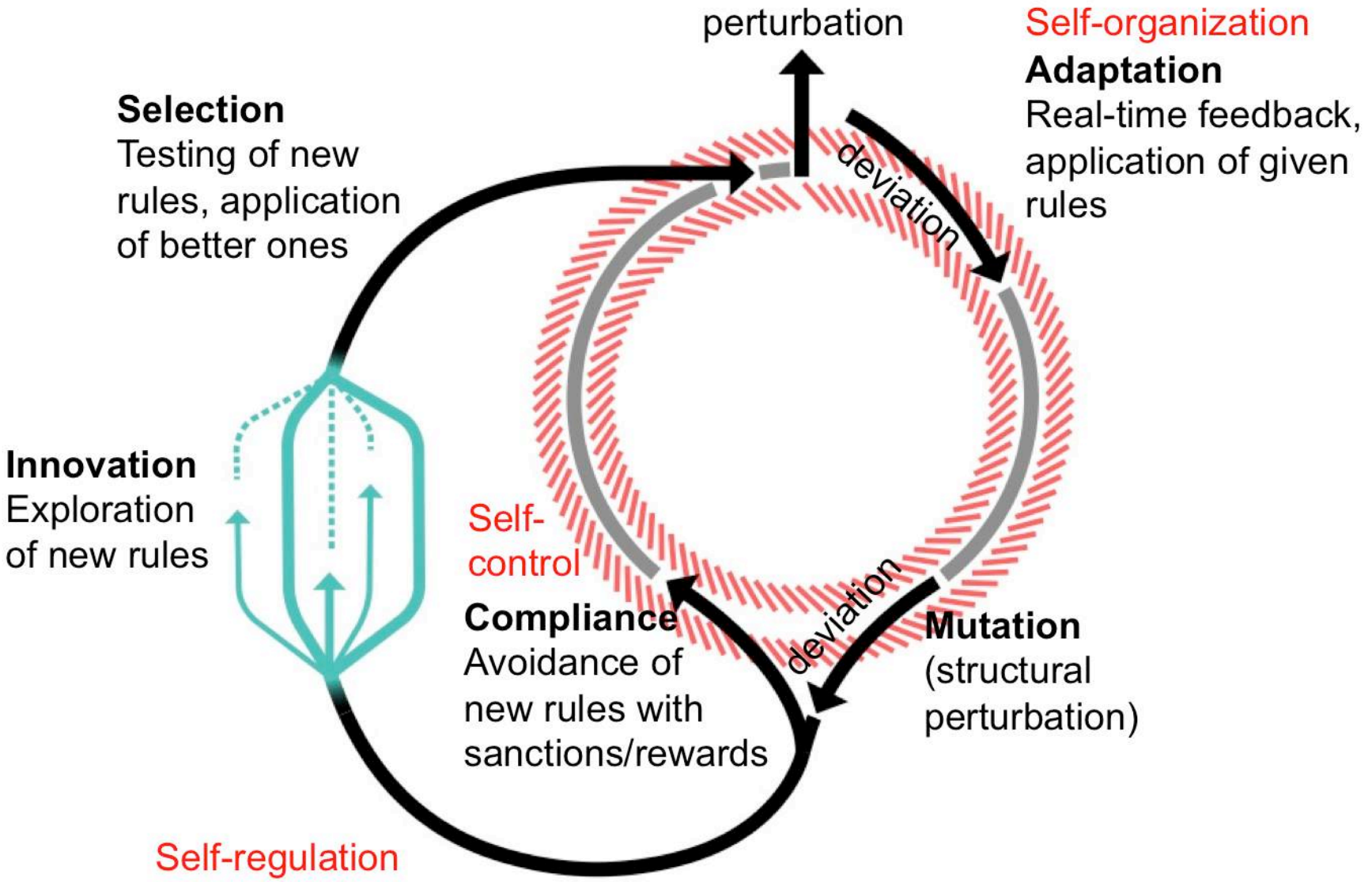
… and be a successful entrepreneur



Augmented Reality

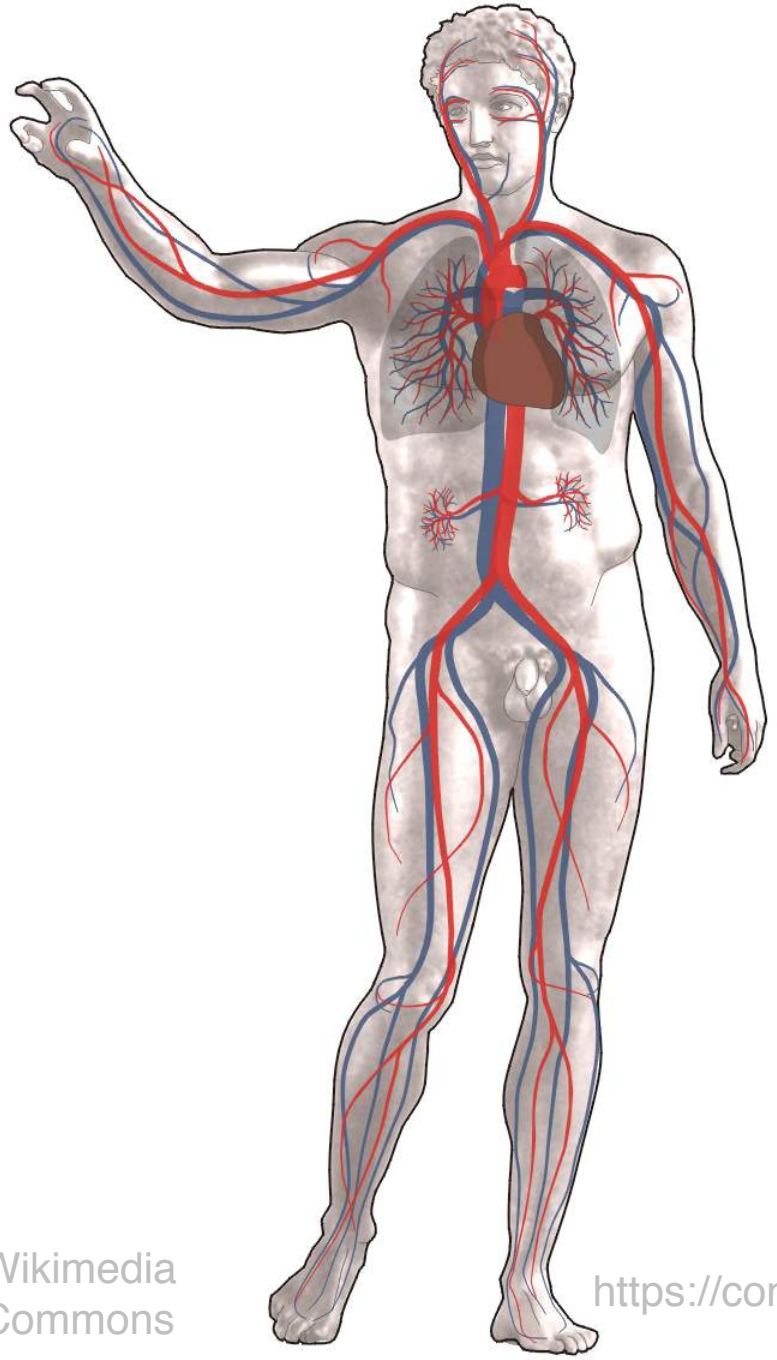
Turn beginners into professionals

Bottom-Up Organization Allows for Creativity and Innovation



3. Introduce multi-dimensional money

Overcome unsustainability with a socio-ecological finance system.



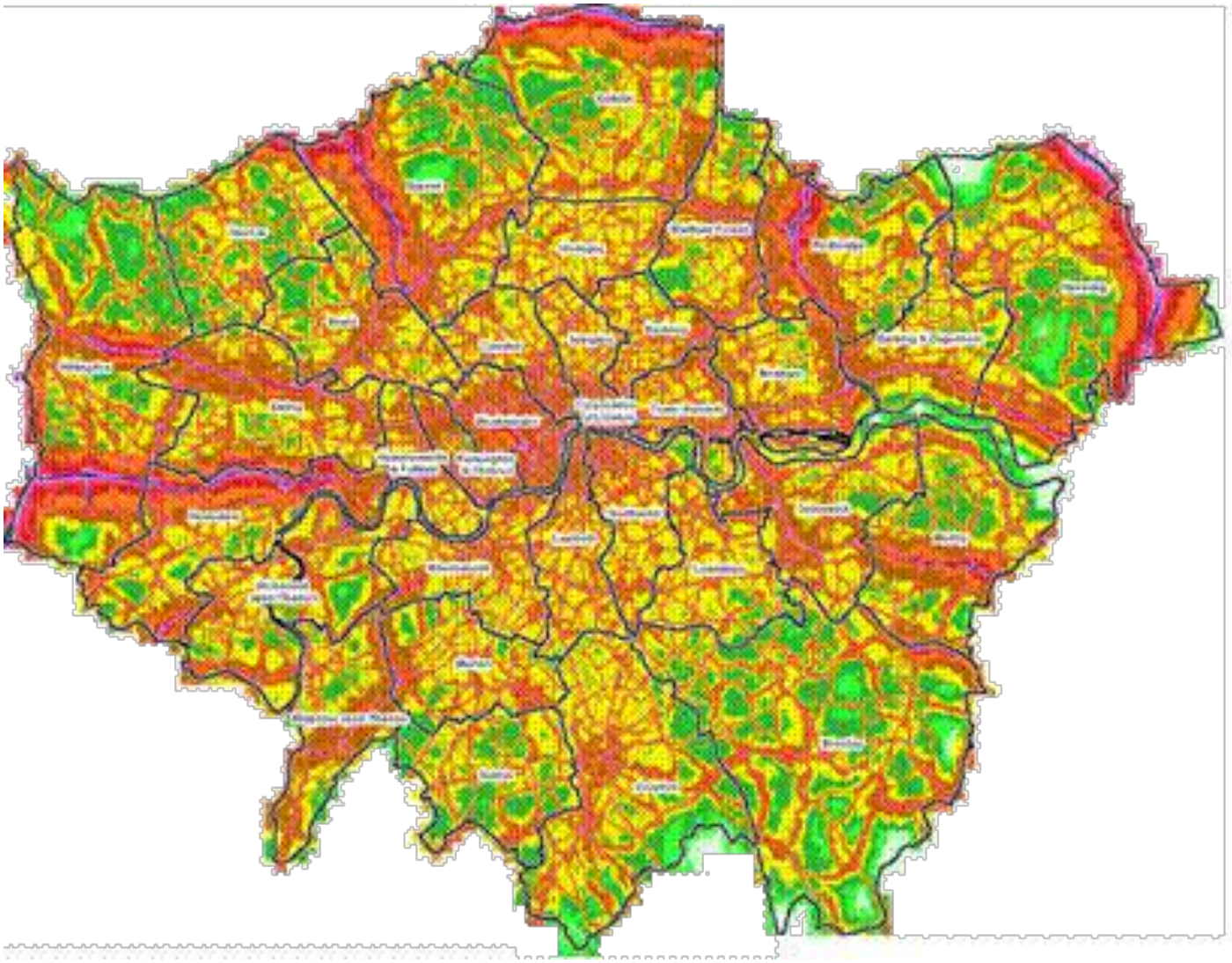
We are living not just on one thing, say water. We need

- carbohydrates
- proteins
- vitamins
- minerals

Wikimedia Commons

https://commons.wikimedia.org/wiki/File:Grafik_blutkreislauf.jpg

Measure the Effects of Our Behavior on the Environment and on Others



The Internet of Things in Our Pocket

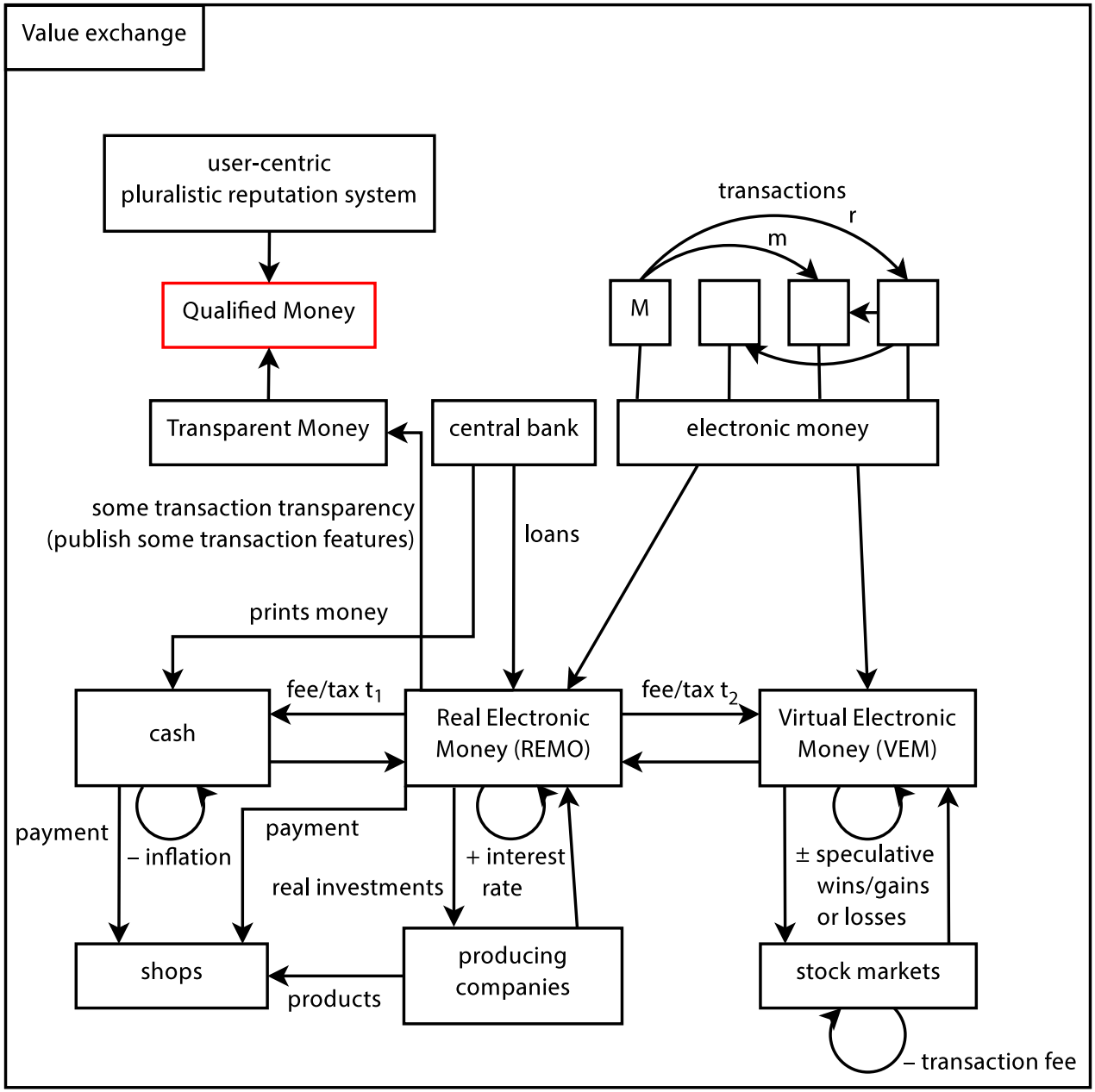
BLOCKCHAIN AND IOT SCHOOL

ETH ZÜRICH | 12-16 FEBRUARY | 2018

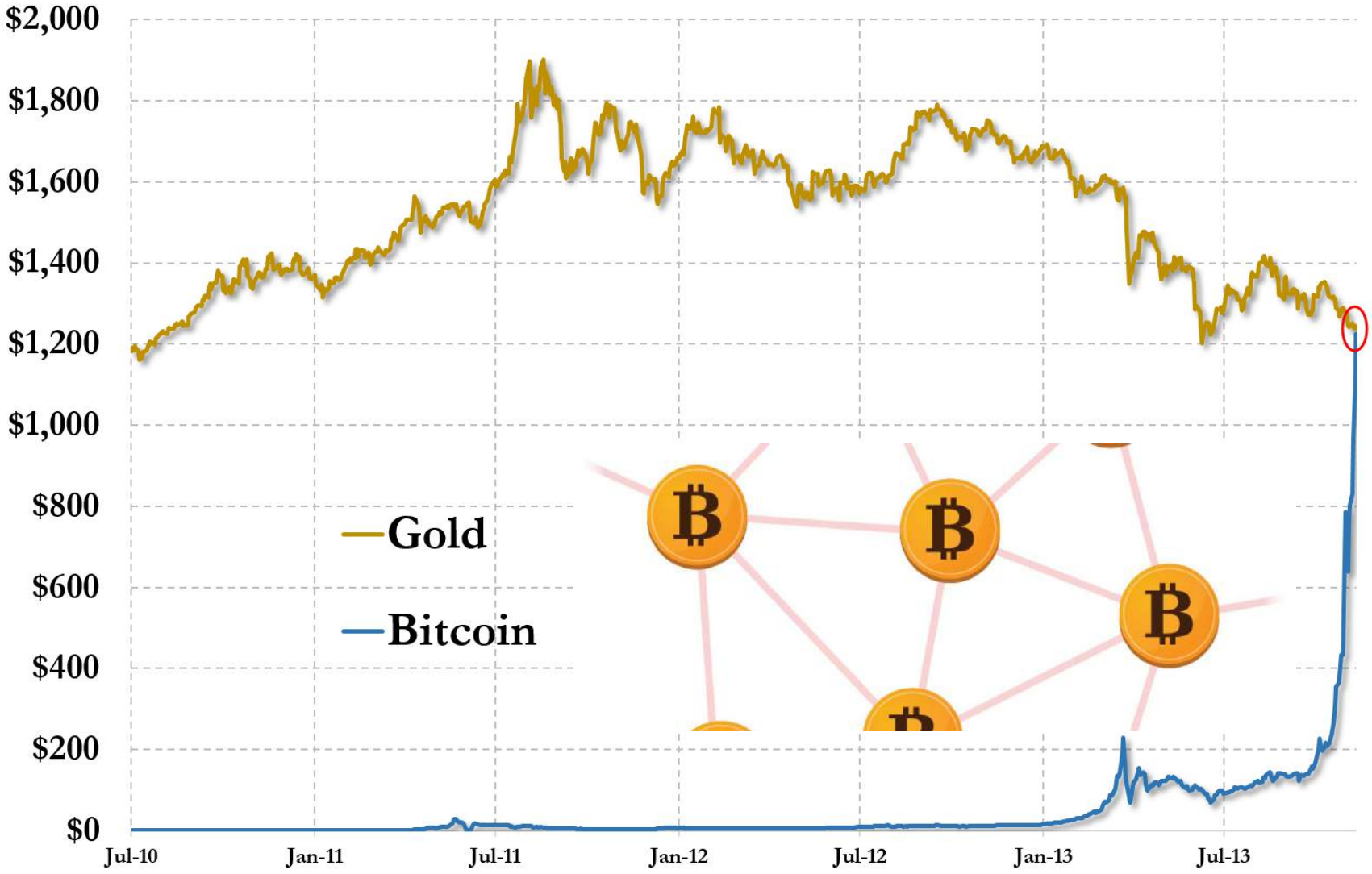
The No. 1 Principle: Don‘t Harm!

Increase positive externalities, reduce negative ones, and ensure fair compensation

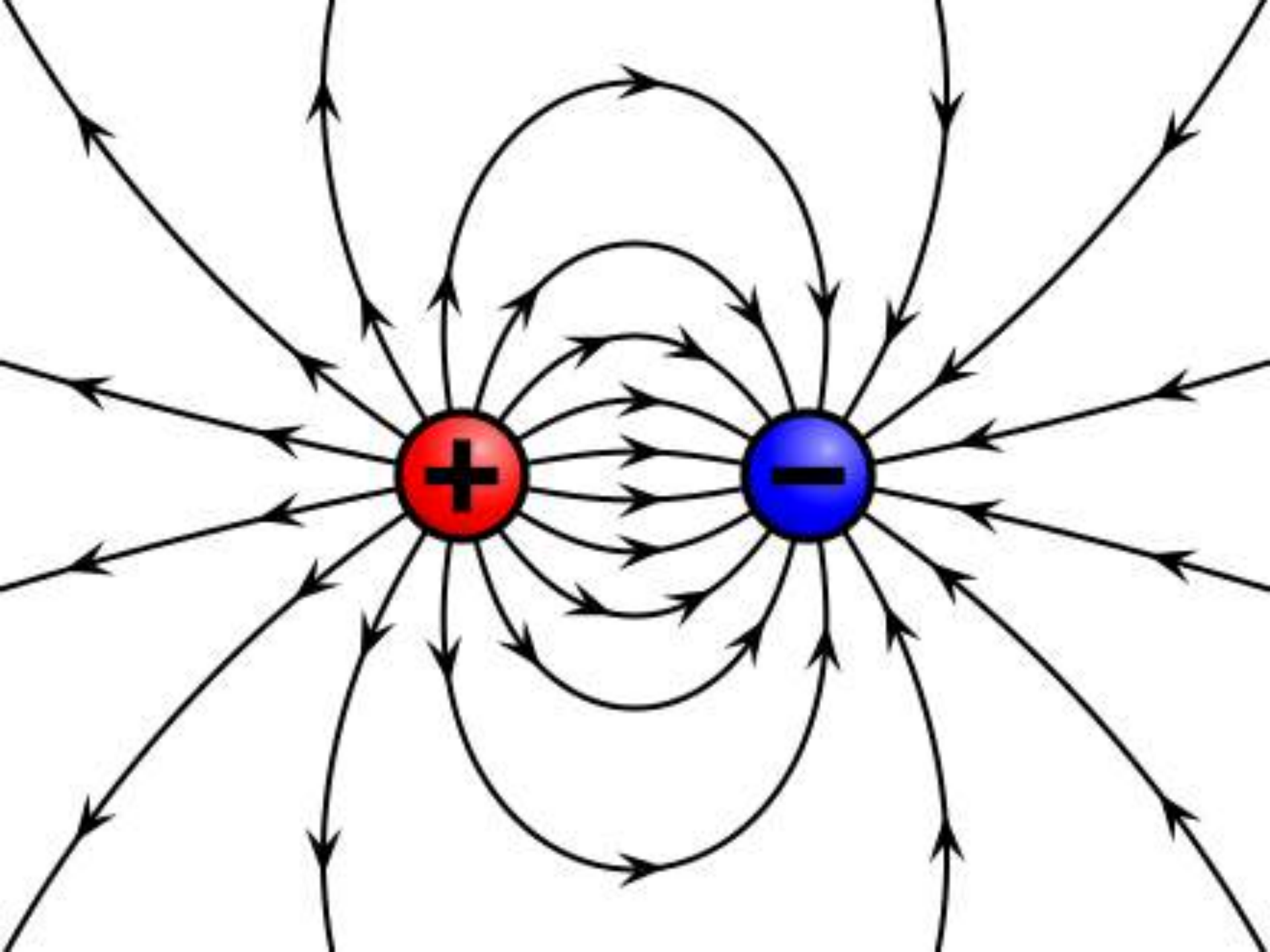
We Need a Multi-Dimensional Incentive/Reward System: „Qualified Money“



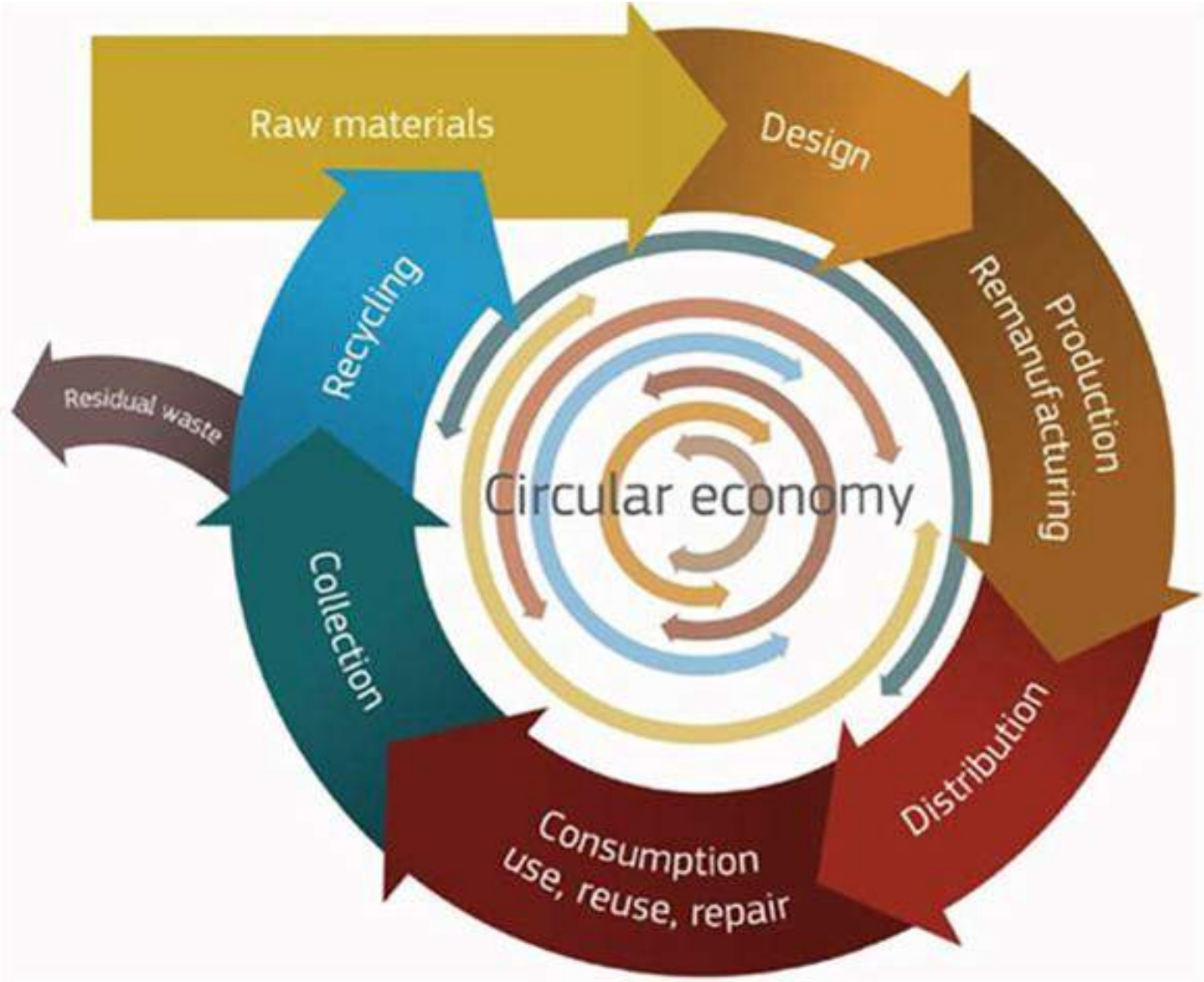
Create A Multi-Dimensional Money, Feedback and Incentive System



A real-time coordination system for our complex world!



Circular + Sharing Economy



https://www.researchgate.net/publication/315337655_Ceramic_Industry_contribution_to_a_Circular_Economy

Part II: Rethinking the World Economy: From Push to Pull

If we changed our throw-away society, there would be enough resources for everyone.

By Dirk Helbing, August 21, 2017

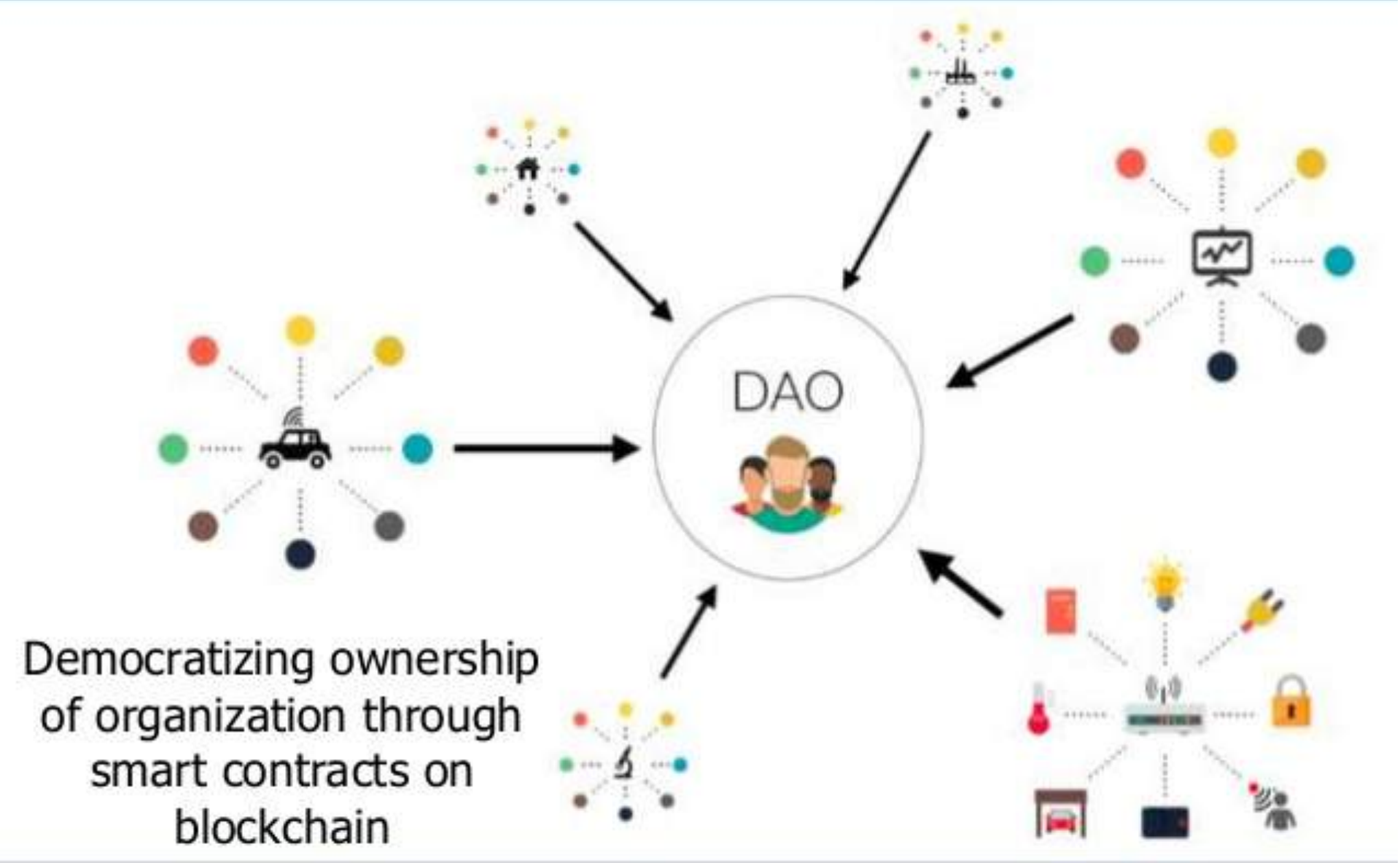
Credit: puwanai
Shutterstock.com

The world's supply chains must be organized in a completely different way. What we need is a combined circular and sharing economy, as many have pointed out.

Presently, however, because it's often cheaper, we have many "linear" supply chains. In these, fresh resources are used to produce large numbers of products for the sake of economies of scale, which are then sold ("pushed") to as many customers as possible using massive marketing campaigns.

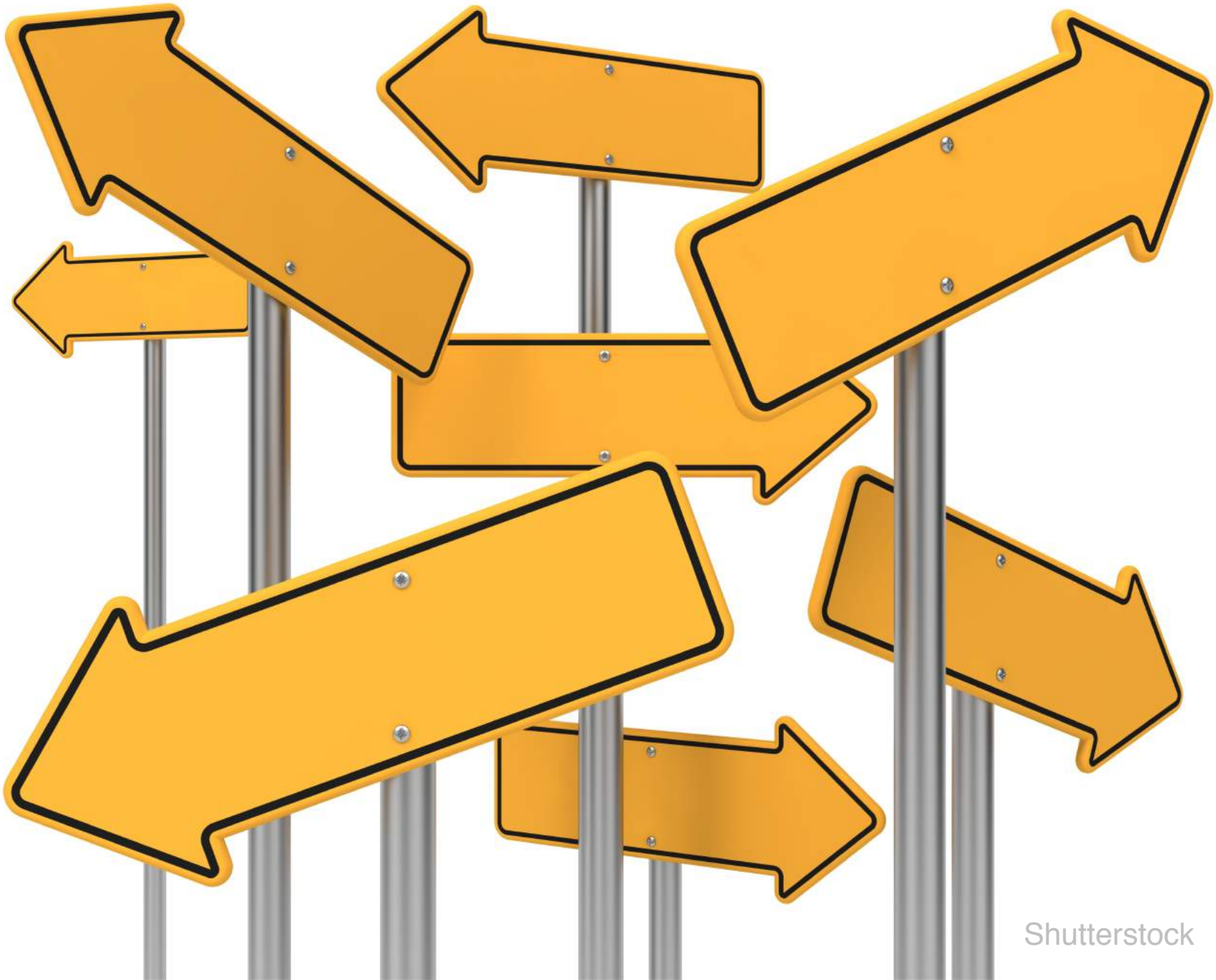
The customers will then consume the products — and eventually throw them away. Supply chains must hence be organized in a better way.

DAO:
Decentralized autonomous organization



Democratizing ownership of organization through smart contracts on blockchain

Transport as a service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The Grand Transformation of Our Society

Digitization 2.0:
A New Game Begins

Das neue Spiel

Foren wie die G 20 setzen bei der Weltrettung immer noch auf die alten Spielregeln der Politik und Wirtschaft. Die Digitalisierung 2.0 bietet sich hier als Alternative an.

Von Dirk Helbing

Kürzlich stellte Technologie-Visionär Elon Musk, Chef von Tesla und Space X, die Frage: „Was, wenn die Welt eine Computersimulation wäre?“ Ja, dann wäre es so etwas wie ein Spiel, in dem man lernen muss, kreativ auf das nächste Level zu kommen, um zu gewinnen. Aber was sind dann die Spielregeln?

Die Herausforderungen des Spiels sollten uns eigentlich allen bekannt sein. Vor mehr als 40 Jahren befand die „Club of Rome“-Studie „Grenzen des Wachstums“, dass die Welt angesichts begrenzter materieller Ressourcen unweigerlich in einen Wirtschafts- und Bevölkerungskollaps hineinlaufen würde. Milliarden von Menschen würden sterben. Seitdem versucht man, so viel Ressourcen wie möglich unter Kontrolle zu bringen. Wir haben uns entschieden, „Monopoly“ zu spielen. Und es begann eine Ära, die von Globalisierung und Kriegen geprägt war.

Auf dem G-20-Gipfel in Hamburg wurde weiter nach diesen Spielregeln gespielt – und so blieb man auf dem alten Level. Mühsam rangen die Regierungschefs der 20 größten Volkswirtschaften um eine dürre Erklärung zum Klimaschutz und einigten sich am Ende darauf, dass es wichtig sei, den Ausstoß von Treibhausgasen zu reduzieren. So weit, so bekannt. Wir müssen radikaler denken: Neue digitale Technologien, demokratisch gesteuert und eingesetzt in einem völlig neuen Wirtschafts- und Finanzsystem, könnten unsere Ressourcenprobleme lösen. Künstliche Intelligenz kann uns viele Arbeiten abnehmen und uns Spielraum geben für ökologisch-soziales Engagement und das Entwickeln neuer Problemlösungen.

Offenbar dachte keiner daran, dass man die Art und Weise, wie Wirtschaft und Gesellschaft organisiert sind, auch ändern könnte. Dabei wäre es gar nicht so schwer gewesen. Wir hätten unseren Ressourcenverbrauch jährlich nur um drei Prozent reduzieren müssen.

Aber das gefiel den Industrievertretern nicht. Die Bürger sollten weiter konsumieren. Die Devise war „Brot und Spiele“ für das Volk, Ablenkung vom bevorstehenden Weltuntergang. Politik und Industrie versprachen, sich um alles zu kümmern. Wir müssten sie nur machen lassen. Und

Was heute technisch möglich ist, übersteigt Orwells „1984“ und Huxleys „Schöne neue Welt“

ein kooperatives Spiel, nicht das „Monopoly“ der alten, materiellen Ökonomie. An die Stelle von Besitzen tritt das Prinzip des Nutzens und des Teilens. Und so wird es plötzlich möglich, dass auch die begrenzten Ressourcen der materiellen Welt für alle reichen. Wir müssen nur lernen, Ressourcen zu recyceln und zu „sharen“. Es braucht eine Kreislaufwirtschaft statt linearer Produktionsketten, bei denen frische Ressourcen verbraucht werden, um Konsumartikel herzustellen, die man am Ende wegwirft. Doch wie kommen wir dahin?

Die Digitalisierung 2.0 wird drei miteinander eng verflochtene Transformationen mit sich bringen: die digitale, die ökologische und die des Finanzsystems. Das Internet der Dinge und die sogenannten „Blockchain-Technologien“ sind dabei die technologischen Treiber. Unter dem Internet der Dinge versteht man die Ausstattung von Alltagsgegenständen mit Mess-Sensoren – gewissermaßen Sinnen – und mit Kommunikation. Eine Blockchain wiederum ist eine dezentrale Datenbank, die ständig durch neue Datensätze erweitert wird, die wie in einer Kette hinzugefügt werden – eine für alle einsehbare Registratur. Darauf basiert zum Beispiel die Internetwährung Bitcoin. Sie ermöglichen das sichere Weitergeben von Daten oder digitalem Geld, ohne dass es einen zentralen Sicherheitsgaranten, etwa den Staat oder eine Bank, braucht.

Das größte Potenzial besteht darin, diese Technologien miteinander zu verbinden und dabei die Wissenschaft komplexer Systeme zu berücksichtigen, die uns sagen kann, welche Anreizsysteme und Interaktionen zu welchen Ergebnissen führen.

Früher oder später wird die digitale Transforma-

Wir müssen die halbe Wirtschaft neu erfinden und ein gerechteres Finanzsystem einführen

tion rund 50 Prozent der heutigen Tätigkeiten durch Künstliche-Intelligenz-Systeme und Roboter ersetzen. Das ist zweifellos eine Herausforderung, aber auch eine Chance, denn damit können wir uns endlich mehr auf jene Themen konzentrieren, die bisher vernachlässigt wurden: Umwelt und Soziales.

Wir müssen die halbe Wirtschaft neu erfinden. Die Nachhaltigkeit können wir durch ein neues,

MONOPOLY
COMMUNITY CHEST
CHANCE
GO
COLLECT NO SALARY AS YOUR EMPLOYER IS IN ADMINISTRATION
POUNDLAND (USED TO BE BORDERS)
PRICE £50
FOLLOW INSTRUCTIONS ON TOP CARD
COMMUNITY CHEST
POUNDLAND (USED TO BE JESSOPS)
PRICE £60
BUSINESS TAX
PAY ANYTHING BETWEEN £10,000 AND 2P
STARBUCKS
PRICE £200
TESCO METRO
PRICE £100
CHANCE
TESCO EXTRA
PRICE £100
AN EXTRA TESCO METRO
PRICE £120
Takeover
administration
Seeking Hostile
DERELICT HMV
PRICE £140
PRICE FIXED POWER COMPANY
PRICE £150
THE EMPTY SHOP FORMERLY KNOWN AS ZAVVI
PRICE £140
I REMEMBER WHEN THIS WAS ALL WOOLIES
PRICE £160
ANOTHER STARBUCKS
PRICE £200
WORRIED LOOKING PC WORLD
PRICE £180
COMMUNITY CHEST
FOLLOW INSTRUCTIONS ON TOP CARD
SICKLY LOOKING DIXONS
PRICE £180
THE OLD ABANDONNED COMET (POSSIBLY HAUNTED)
PRICE £200
EVER SEEN DAWN OF THE DEAD? THE MALL FROM THAT, BASICALLY.
PRICE £400
PAY YOUR ACCOUNTANT
PAY £200
EMPTY VIRGIN MEGASTORE ECHOING WITH THE MOANS OF TORTURED SOULS
PRICE £350
CHANCE
CHRIST ALMIGHTY NOT ANOTHER ONE
PRICE £200
RBS (MOVE ALONG, NOTHING TO SEE HERE)
PRICE £320
COMMUNITY CHEST
FOLLOW INSTRUCTIONS ON TOP CARD
NATWEST (EVERYTHING TICKETY?BOO)
PRICE £300
BARCLAYS (DOING JUST FINE)
PRICE £300
administration
Un-on!
FORMER HABITAT (NOW CRACK DEN)
PRICE £280
LEAKY WATER COMPANY
PRICE £1.50
GAME (HOME TO EERIE NOISES THAT YOU HOPE IS JUST A FOX)
PRICE £260
BOARDED UP JD SPORTS (HOME TO SOME PIGEONS)
PRICE £260
YET ANOTHER STARBUCKS
PRICE £300
EMPTY BOOK SHOP (BOOKS WERE LIKE KINDLES, BUT MADE OF PAPER)
PRICE £240
EMPTY LIBRARY (THEY WERE LIKE BLOCKBUSTERS, BUT FOR BOOKS! IMAGINE!)
PRICE £220
CHANCE
EMPTY BLOCKBUSTER
PRICE £220
OVERPRICED NCP PARKING

JUST VISITING
CONNECTICUT AVENUE
VERMONT AVENUE
CHANCE
ORIENTAL AVENUE
READING RAILROAD
INCOME TAX
BALTIC AVENUE
COMMUNITY CHEST
MEDITERRANEAN AVENUE
COLLECT $200.00 SALARY AS YOU PASS
GO
ST. CHARLES PLACE
ELECTRIC COMPANY
STATES AVENUE
VIRGINIA AVENUE
PENNSYLVANIA RAILROAD
ST. JAMES PLACE
COMMUNITY CHEST
TENNESSEE AVENUE
NEW YORK AVENUE
FREE PARKING
KENTUCKY AVENUE
CHANCE
INDIANA AVENUE
ILLINOIS AVENUE
B. & O. RAILROAD
ATLANTIC AVENUE
VENTNOR AVENUE
WATER WORKS
MARVIN GARDENS
GO TO JAIL
PACIFIC AVENUE
NORTH CAROLINA AVENUE
COMMUNITY CHEST
PENNSYLVANIA AVENUE
SHORT LINE
CHANCE
PARK PLACE
LUXURY TAX
BOARDWALK

To Fix the World by 2030...

… There Are Entirely New Solutions!

- A new wave of technologies
- Digital democracy to boost collective intelligence
- Digital assistants to boost self-organization
- Finance 4.0 to boost sustainability
- Openness to boost co-creation
- Democratic capitalism to boost innovation
- City Olympics to solve global problems

The 7C's:
Success Principles for a Comlex World

- Co-learning
- Co-creation
- Combinatorial innovation
- Co-ordination
- Co-operation
- Co-evolution
- Collective intelligence

How Finally Everything Comes Together: Science, Politics, Business, Society, Religion

- Massively increased efficiency
- Self-organizing, self-improving systems
- More participatory opportunities
- Informational self-determination
- More entrepreneurship
- Protection of the environment
- Consideration of externalities
- Other-regarding and fair
- Digitally assisted cooperation, reduced conflict

Why Politics, Business and Everyone Should Support this

- Politics: overcome social and political instability
- Business: Information, innovation and production ecosystem fueling exponential innovation
- Everyone: Freedom and self-determination, new opportunities

The main problems is that the solutions that can save us are opposed by old industries and “vested interests”/old elites.

Our Current Institutions Haven‘t Protected Us from the Rise of A New Totalitarianism

The institutions of so-called “representative democracies” have often been instrumentalized against the interests of the majority of the people by a few selfish, powerful players. They must be re-invented or replaced.

- Politics (Legislative)
- Administrations (Executive)
- Courts (Jurisdiction)
- Media
- Capitalism
- Science
- Religions
- Other institutions

Classical Ways of Ruling People

- Ruling by fear and force
- Ruling by creating conflict (“divide et impera”)
- Ruling by creating chaos (“ordo ab chao”)
- Ruling by money (“money makes the world go round”)
- Ruling by debt (debt spiral)
- Ruling by information asymmetry (“knowledge is power”)
- Ruling by distraction (”bread and circuses”)
- Ruling by lies and deception, propaganda and censorship

Further Control Mechanisms

- Chemistry: Food, water, air (pollution)
- Biology: DNA, diseases
- Economy: Money, standards
- Politics: Laws, regulations, institutions
- Psychology: Deception
- Sociology: Social norms, conventions
- Education: Values, knowledge (gaps)
- Religion: Values, subordination
- Media: World view, attention economy
- Data: Surveillance, scoring systems
- Technology: Weapons, filter bubbles, algorithms (“code is law”)
- Physics: Laws of nature?

Who Is in Control?

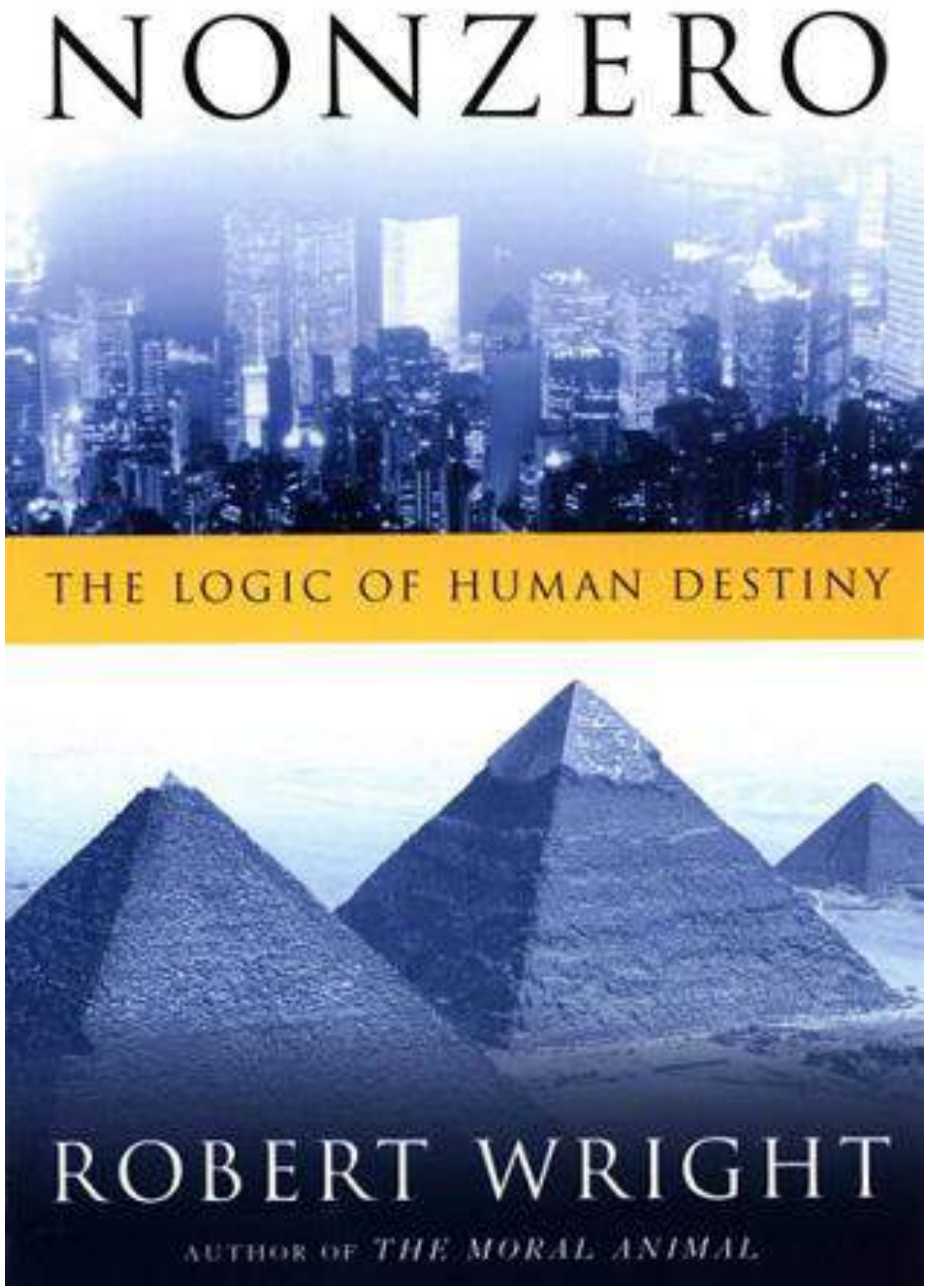
Chemistry: Food, water, air (pollution)	Private companies
Biology: DNA, diseases	Nature, private comp.
Economy: Money, standards	Private companies
Politics: Laws, regulations, institutions	Parliament
Psychology: Deception	Anyone
Sociology: Social norms, conventions	The people
Education: Values, knowledge (gaps)	State
Religion: Values, subordination	Religious leaders
Media: World view, attention economy	Ca. 6 media empires
Data: Surveillance, scoring systems	Secr.serv., priv. comp.
Technology: Weapons, filter bubbles, algorithms (“code is law”)	State, private comp.
Physics: Laws of nature	Nature?


REVELATION

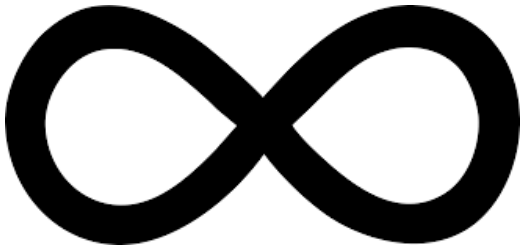
Let’s free ourselves!

The future is about overcoming the limitations of the material age.

"A highly original tour of human history. . . . Immensely readable as well as immensely contentious." —*The Wall Street Journal*



The Digital Age Offers Limitless Opportunities



If we want to be free and harvest our full potentials, we must stop imposing things on others, follow the "no harm" principle, and learn to cooperate.


We are all interconnected.We must learn to
love our planet and every-one living on it!

Domino Effect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