

The future and what to do about it

Mark Stevenson

@optimistontour











@atlasfuture @wearewtdt

^ 0



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0 – 45



> 0



0 - 45



< 0



0 – 45



> 45



$\wedge 0$



$0 - 45$



$\vee 45$



- My Home
- Inbox (3)
- My Health
 - Disease Risk
 - Carrier Status
 - Drug Response
 - Traits
 - Health Labs
- My Ancestry
 - Relative Finder
 - Ancestry Composition
 - Maternal Line
 - Paternal Line
 - Ancestry Labs
- Sharing & Community
 - Family Tree
 - Family Inheritance
 - Compare Genes
 - 23andMe Community
 - Genome Sharing
- 23andWe
 - Research Surveys (34)
 - Research Snippets
 - Research Initiatives
 - Research Discoveries

health overview

[Print my health overview](#) | [Share my health results](#)

To ensure that the information on this page is as accurate as possible, please [set your ancestry](#)

Show results for Mark Stevenson [See new and recently updated reports »](#)

23andWe Discoveries were made possible by 23andMe members who took surveys.

Disease Risks (120, 2 locked reports)

Elevated Risks	Your Risk	Average Risk
Atrial Fibrillation	41.6%	27.2%
Prostate Cancer	31.6%	17.8%
Colorectal Cancer	7.5%	5.6%
Rheumatoid Arthritis	4.5%	2.4%
Chronic Kidney Disease	4.2%	3.4%

[See all 120 risk reports...](#)

Carrier Status (48)

Hemochromatosis (HFE-related)	Variant Present
Alpha-1 Antitrypsin Deficiency	Variant Absent
Bloom's Syndrome	Variant Absent
BRCA Cancer Mutations (Selected)	Variant Absent
Canavan Disease	Variant Absent
Cystic Fibrosis	Variant Absent
DPD Deficiency	Variant Absent
Familial Dysautonomia	Variant Absent

[See all 48 carrier status...](#)

Traits (57)

Alcohol Flush Reaction	Does Not Flush
Bitter Taste Perception	Unlikely to Taste
Earwax Type	Wet
Eye Color	Likely Blue
Hair Curl	Slightly Curlier Hair on Average

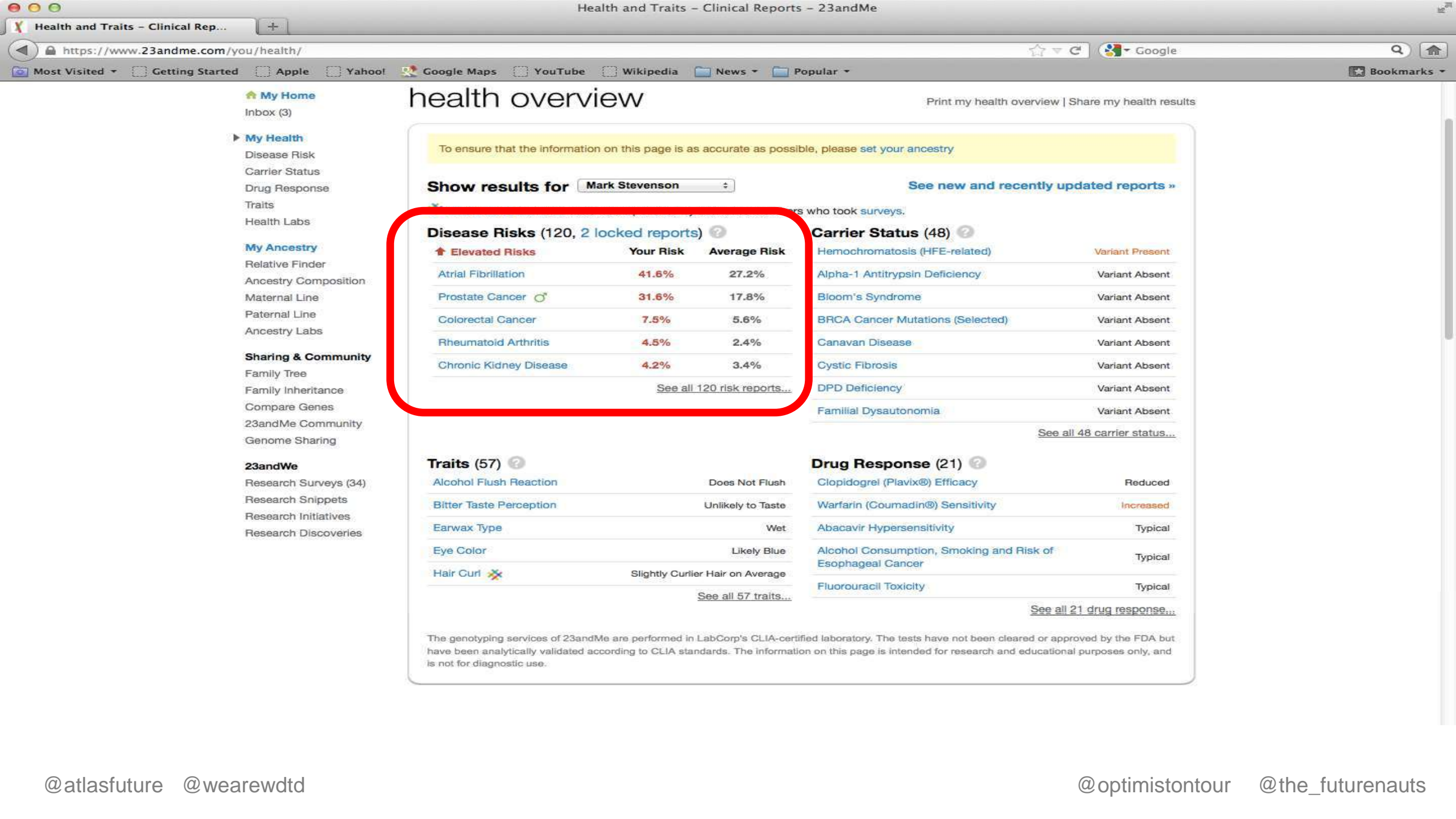
[See all 57 traits...](#)

Drug Response (21)

Clopidogrel (Plavix®) Efficacy	Reduced
Warfarin (Coumadin®) Sensitivity	Increased
Abacavir Hypersensitivity	Typical
Alcohol Consumption, Smoking and Risk of Esophageal Cancer	Typical
Fluorouracil Toxicity	Typical

[See all 21 drug response...](#)

The genotyping services of 23andMe are performed in LabCorp's CLIA-certified laboratory. The tests have not been cleared or approved by the FDA but have been analytically validated according to CLIA standards. The information on this page is intended for research and educational purposes only, and is not for diagnostic use.



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Show information for assuming ethnicity

[Why are there limited choices of ethnicity in risk reports?](#)

and an age range of



Mark Stevenson

31.6 out of 100

men of European ethnicity who share Mark Stevenson's genotype will develop Prostate Cancer between the ages of 35 and 79.



Average

17.8 out of 100

men of European ethnicity will develop Prostate Cancer between the ages of 35 and 79.

What does the Odds Calculator show me?

Use the ethnicity and age range selectors above to see the estimated incidence of Prostate Cancer due to genetics for men with **Mark Stevenson's** genotype. The 23andMe Odds Calculator assumes that a person is free of the condition at the lower age in the range. You can use the name selector above to see the estimated incidence of Prostate Cancer for the genotypes of other people in your account.

The 23andMe Odds Calculator only takes into account effects of markers with known associations that are also on our genotyping chip. Keep in mind that aside from genetics, environment and lifestyle may also contribute to one's risk for Prostate Cancer.

Genes vs. Environment

42-57 %

Attributable to
Genetics

The [heritability](#) of [prostate cancer](#) is estimated to be 42-57%. This means that genetic and [environmental factors](#) contribute nearly equally to differences in risk for this condition. (If you are a woman, you have no chance of getting this type of cancer, but if you have sons, their risk may be affected by what they inherit from you.) Genetic factors that play a role in prostate cancer include both unknown factors and known factors such as the SNPs we describe. Other factors that can increase your risk include being older, having African ancestry, or living in North

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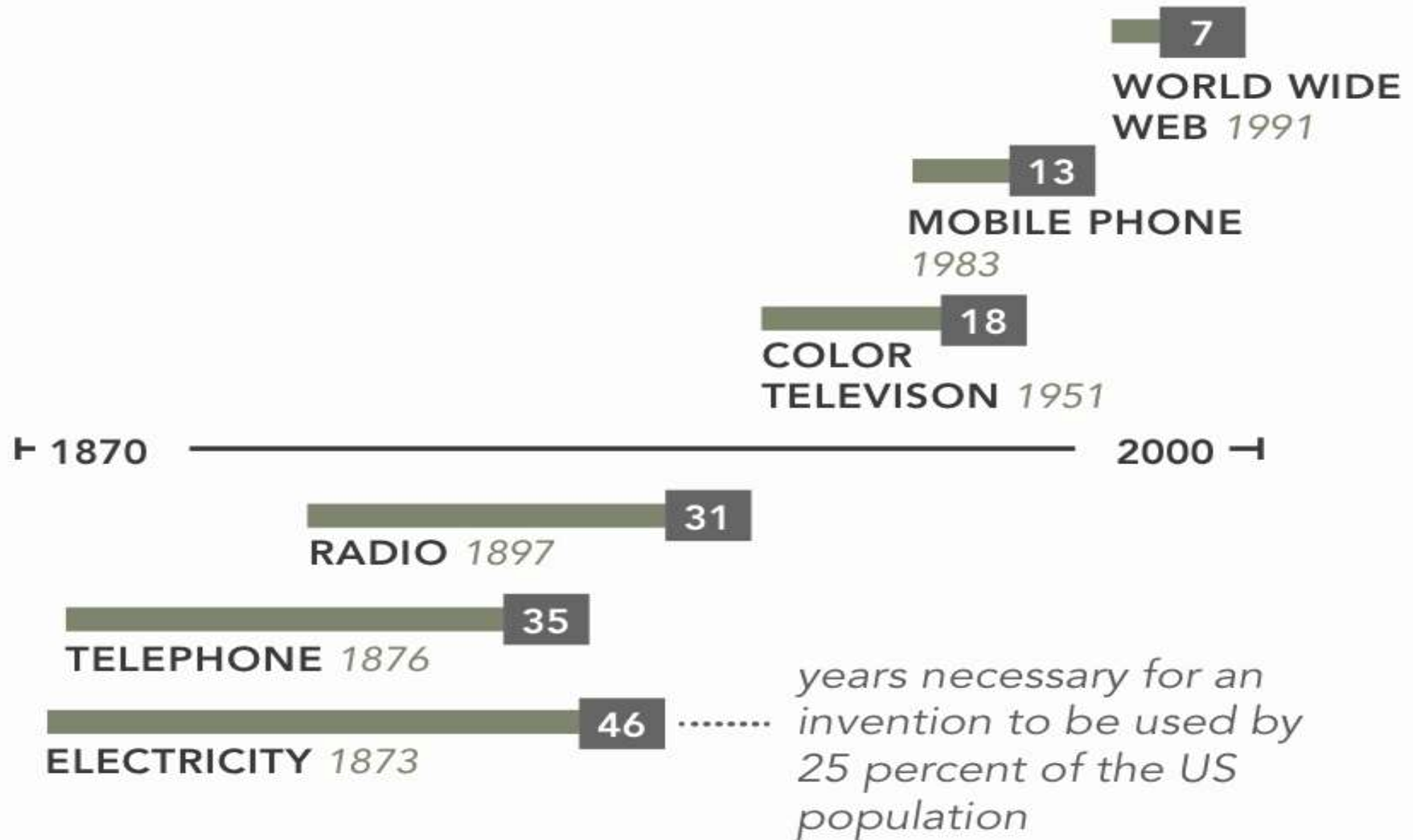
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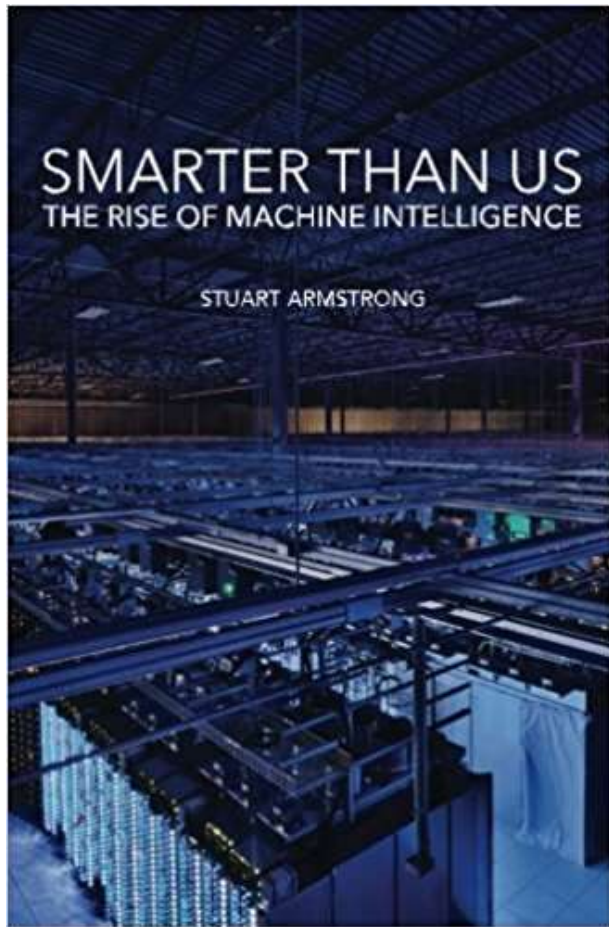
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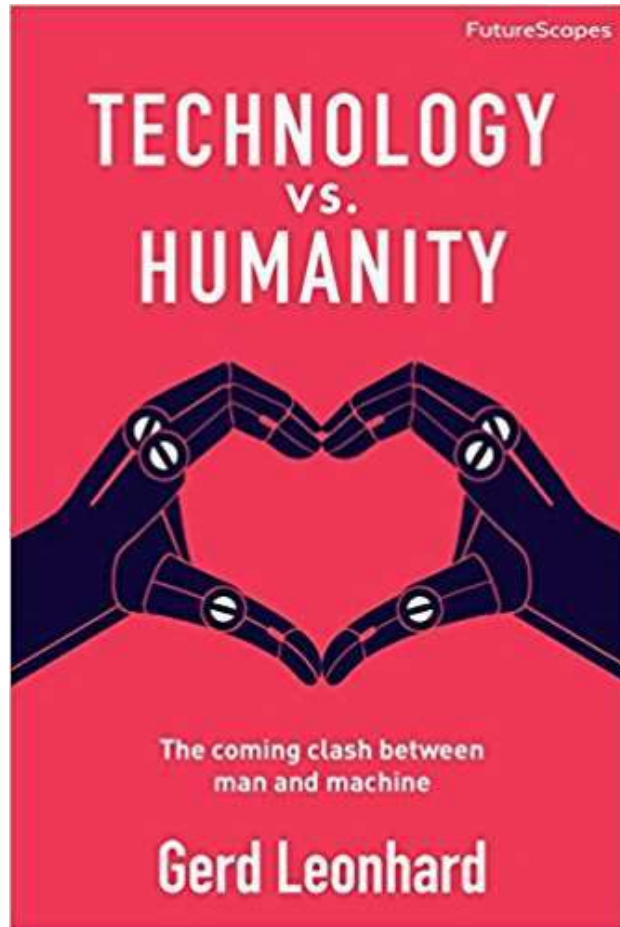
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SMARTER THAN US
THE RISE OF MACHINE INTELLIGENCE

STUART ARMSTRONG



FutureScopes

TECHNOLOGY
vs.
HUMANITY

The coming clash between
man and machine

Gerd Leonhard



MARTIN FORD

RISE OF
THE
ROBOTS

TECHNOLOGY AND THE THREAT
OF A JOBLESS FUTURE



CALUM CHACE

SURVIVING
AI

The promise and peril
of artificial intelligence

MARCH OF THE MACHINE MAKES IDLE HUNDREDS OF THOUSANDS OF HANDS

By EVANS CLARK.

A FEW days ago the General Motors Corporation reported the largest post-war earnings ever made by a single concern in the history of America. Three days later Governor Smith made public a report from the New York Industrial Commission which called public attention to serious unemployment throughout the State since the depression of 1921, it was disclosed, have conditions been as bad.

The people of the United States—in the shadow of a Presidential election—are presented with a social

Prevalence of Unemployment With Greatly Increased Production Points to the Influence of Labor-Saving Devices



have gone far to make construction a machine industry instead of a craft of hand trades. One gasoline crane takes the place of ten or twelve laborers. The hot-carrier has disappeared before the furnace of the material hoist. In concrete construction building materials are mixed, the dough, in a machine and literally poured into place without the touch of a human hand. The Ohio State record these results: with four men, fewer men employed, cranes put up 21 per cent more feet of finished buildings last year in 1927.

Steel Mixed by Machine.

News > Business > Business News

Automation: A third of London jobs to be taken by robots within 20 years, says report

Brexit could accelerate the adoption of new technologies to replace human labour, according to report

Ben Chapman | @b_c_chapman | 16 hours ago | 0 comments

DOES TECHNOLOGY REPLACE MEN IN THE LONG RUN?

Technology called threat to 5 mln. jobs Imminent 'Robot Age' Awakens Concern Computers: Worker Menace?

PM acts to counter 'chips' that kill jobs

Workers See 'Robot Revolution' Depriving Them of Jobs



THE FUTURE OF EMPLOYMENT: HOW SUSCEPTIBLE ARE JOBS TO COMPUTERISATION?

Carl Benedikt Frey¹ and Michael A. Osborne²

September 17, 2013

Abstract

We examine how susceptible jobs are to computerisation. To assess this, we begin by implementing a novel methodology to estimate the probability of computerisation for 702 detailed occupations, using a Gaussian process classifier. Based on these estimates, we examine expected impacts of future computerisation on US labour market outcomes, with the primary objective of analysing the number of jobs at risk and the relationship between an occupation's probability of computerisation, wages and educational attainment. According to our estimates, about 47 percent of total US employment is at risk. We further provide evidence that wages and educational attainment exhibit a strong negative relationship with an occupation's probability of computerisation.

Keywords: Occupational Choice, Technological Change, Wage Inequality, Employment, Skill Demand

JEL Classification: E24, J24, J31, J62, O33

*We thank the Oxford University Engineering Sciences Department and the Oxford Martin Programme on the Impacts of Future Technology for hosting the "Machines and Employment" Workshop. We are indebted to Stuart Aernsberg, Nick Bostrom, Eric Christlato, Mark Cattamini, Daniel Dewey, David Dries, Alex Flint, Claudia Golda, John Muellbauer, Vincent Mueller, Paul Newman, Seán Ó hÉigeartaigh, Anders Sandberg, Murray Shanahan, and Keith Wooldock for their excellent suggestions.

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carl.frey@oxfordmartin.ox.ac.uk

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dorn, mae@robots.ox.ac.uk

OXFORD
MARTIN
SCHOOL



UNIVERSITY OF
OXFORD

1	0.99	Telemarketers	25	0.98	Milling and Planing Machine Setters, Operators, and Tenders, Metal and F
2	0.99	Title Examiners, Abstractors, and Searchers	26	0.98	Credit Analysts
3	0.99	Sewers, Hand	27	0.98	Parts Salespersons
4	0.99	Mathematical Technicians	28	0.98	Claims Adjusters, Examiners, and Investigators
5	0.99	Insurance Underwriters	29	0.98	Driver/Sales Workers
6	0.99	Watch Repairers	30	0.98	Radio Operators
7	0.99	Cargo and Freight Agents	31	0.98	Legal Secretaries
8	0.99	Tax Preparers	32	0.98	Bookkeeping, Accounting, and Auditing Clerks
9	0.99	Photographic Process Workers and Processing Machine Operators	33	0.98	Inspectors, Testers, Sorters, Samplers, and Weighers
10	0.99	New Accounts Clerks	34	0.98	Models
11	0.99	Library Technicians	35	0.97	Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop
12	0.99	Data Entry Keyers	36	0.97	Credit Authorizers, Checkers, and Clerks
13	0.98	Timing Device Assemblers and Adjusters	37	0.97	Payroll and Timekeeping Clerks
14	0.98	Insurance Claims and Policy Processing Clerks	38	0.97	Agricultural and Food Science Technicians
15	0.98	Brokerage Clerks	39	0.97	Telephone Operators
16	0.98	Order Clerks	40	0.97	Real Estate Brokers
17	0.98	Loan Officers	41	0.97	File Clerks
18	0.98	Insurance Appraisers, Auto Damage	42	0.97	Counter and Rental Clerks
19	0.98	Umpires, Referees, and Other Sports Officials	43	0.97	Prepress Technicians and Workers
20	0.98	Tellers	44	0.97	Motion Picture Projectionists
21	0.98	Etchers and Engravers	45	0.97	Camera and Photographic Equipment Repairers
22	0.98	Packaging and Filling Machine Operators and Tenders	46	0.97	Cashiers
23	0.98	Procurement Clerks	47	0.97	Ophthalmic Laboratory Technicians
24	0.98	Shipping, Receiving, and Traffic Clerks	48	0.97	Log Graders and Scalers

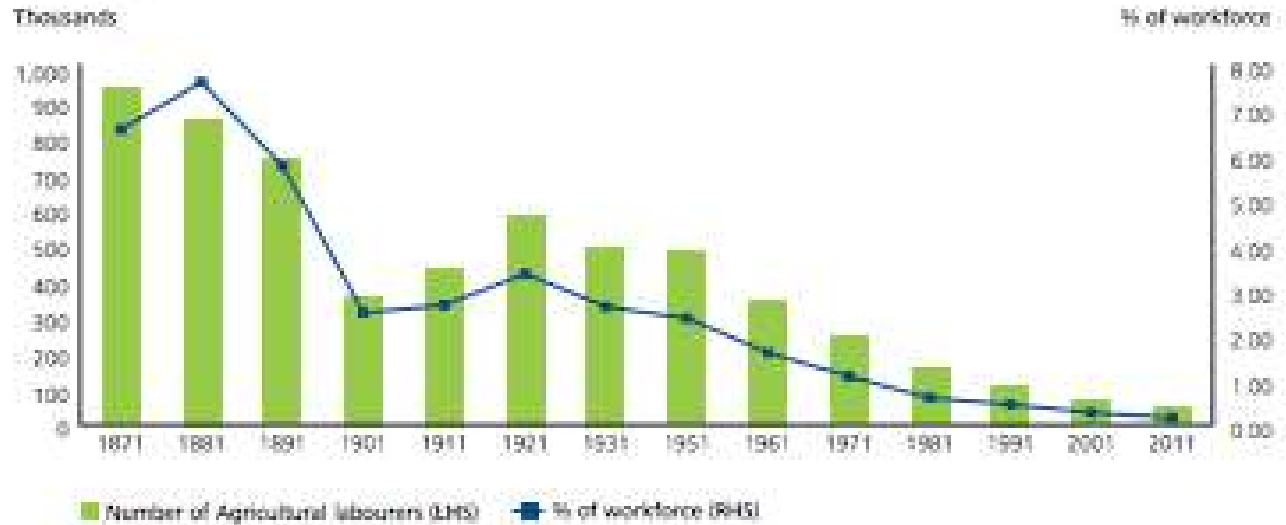
Option 1:

Mass unemployment and civil unrest



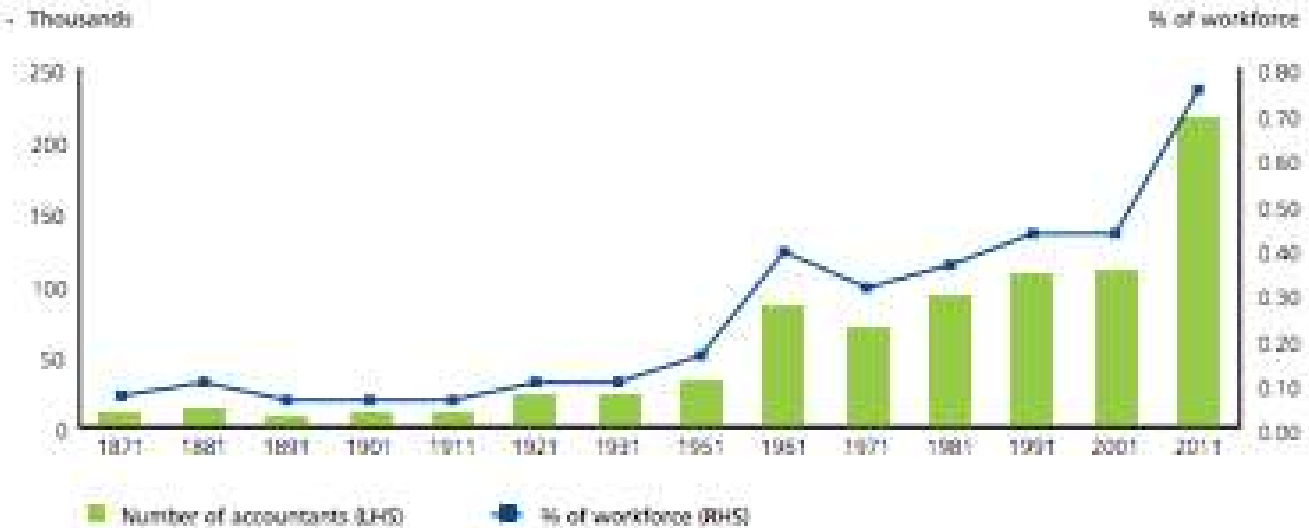
Option 2: From Muscle to Meaning

Chart 1. Agricultural labourers



Source: England and Wales Census records, authors' calculations

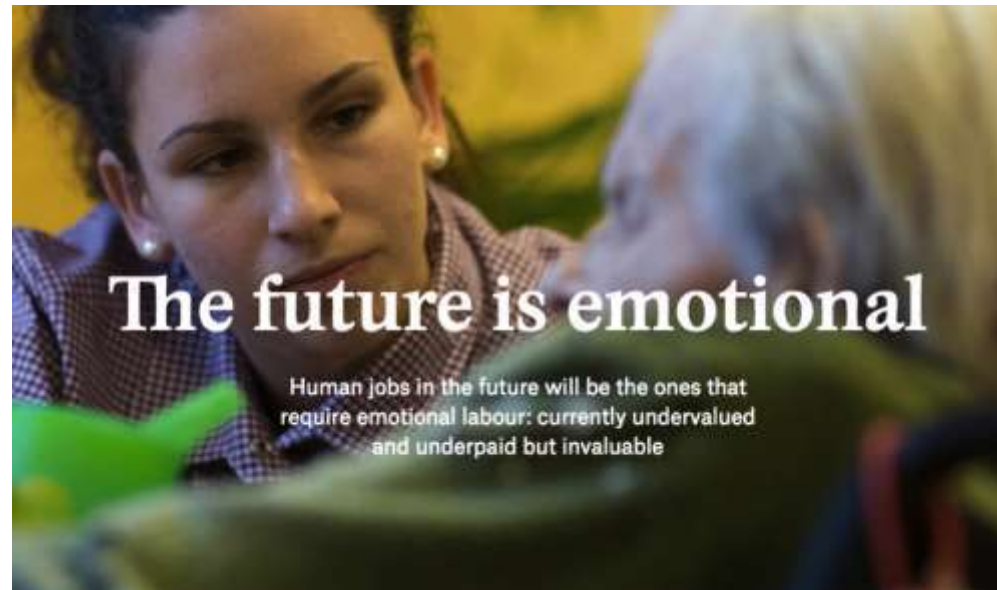
Chart 4. Accountants



The Future of Work: Death of the Single Skill Set In The Age Of Automation

Option 2:

From Muscle to Meaning



Technology \neq Answer

Technology \neq Answer

Technology is a Question

Good



Bad



Ugly





Everything is
broken



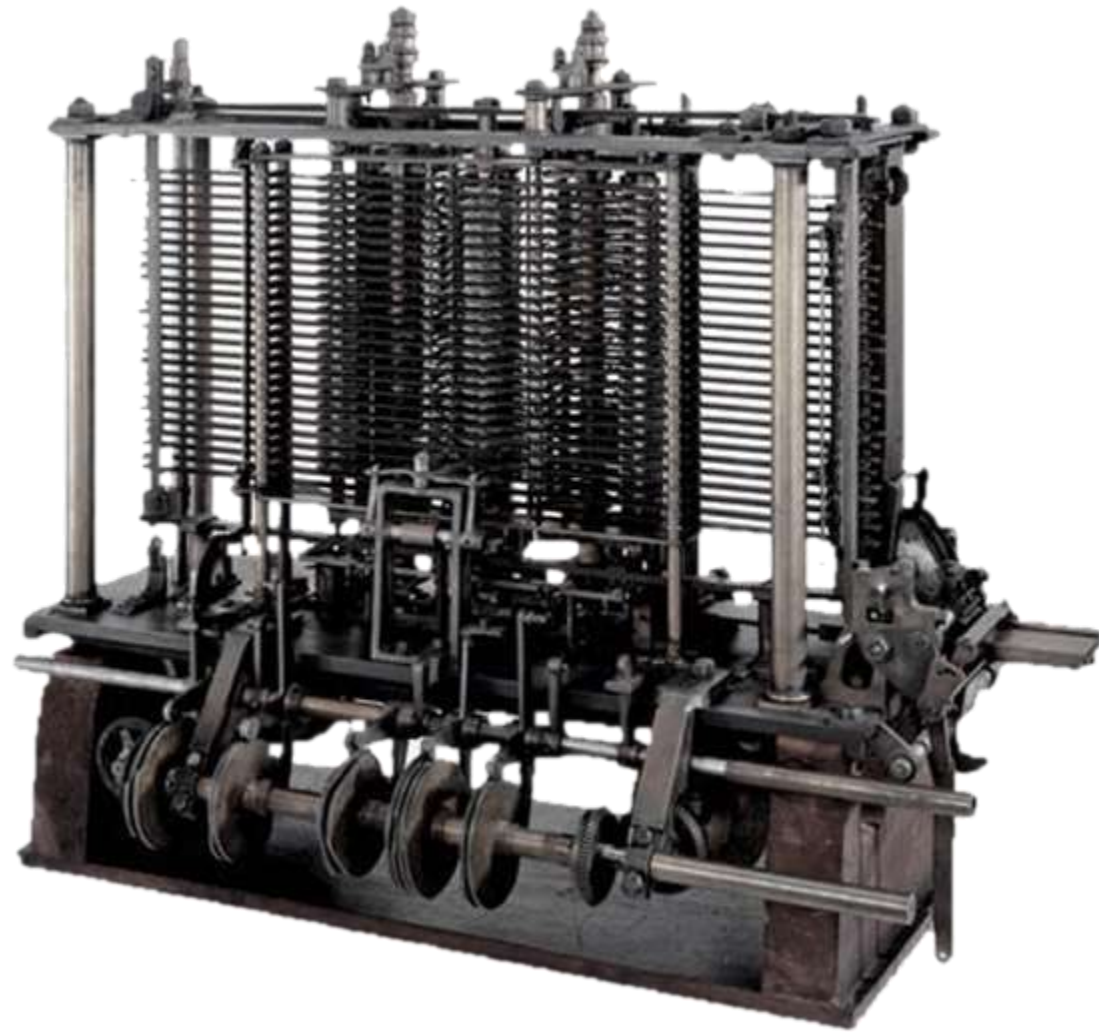
Democracy

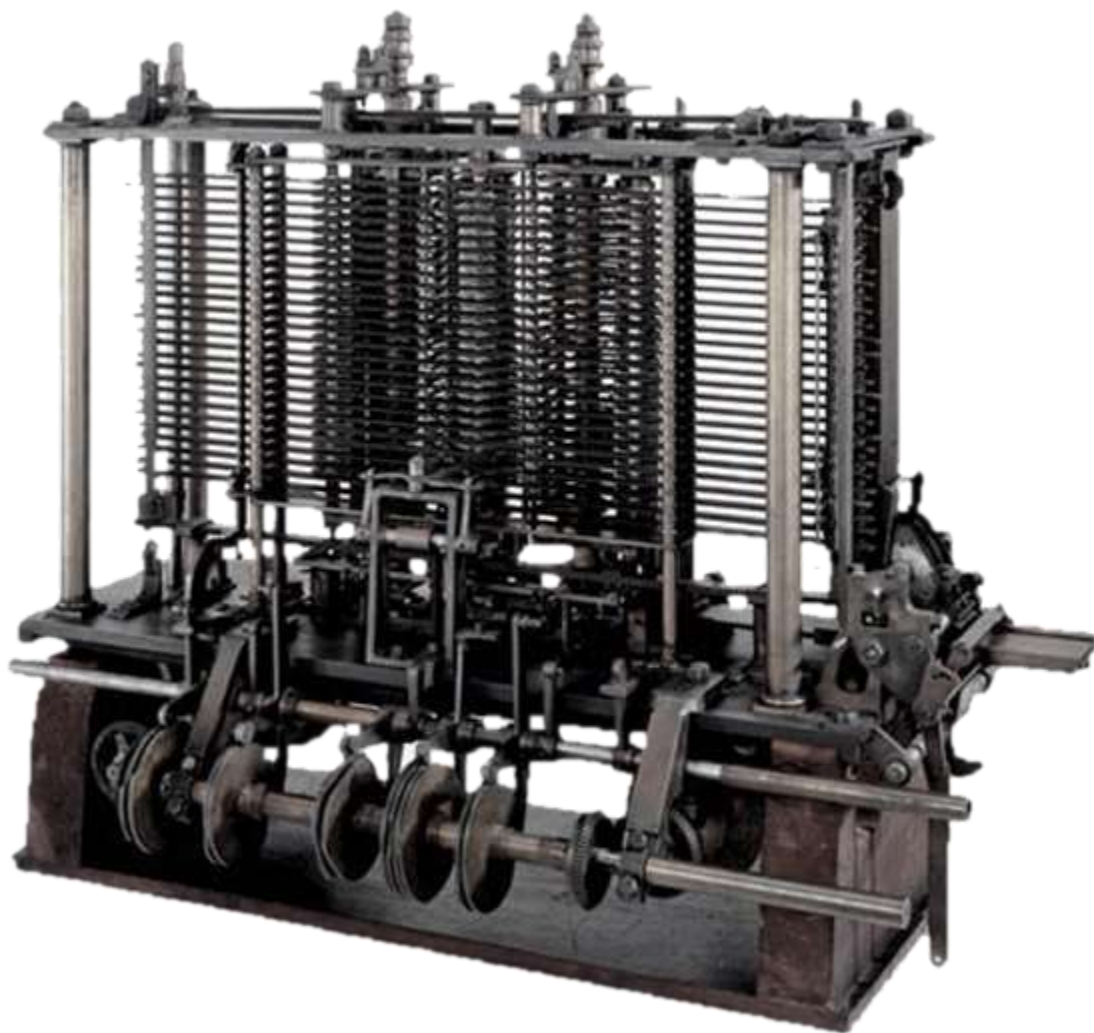


@atlasfuture @wearewdtd

@optimistontour @the_futurenavts



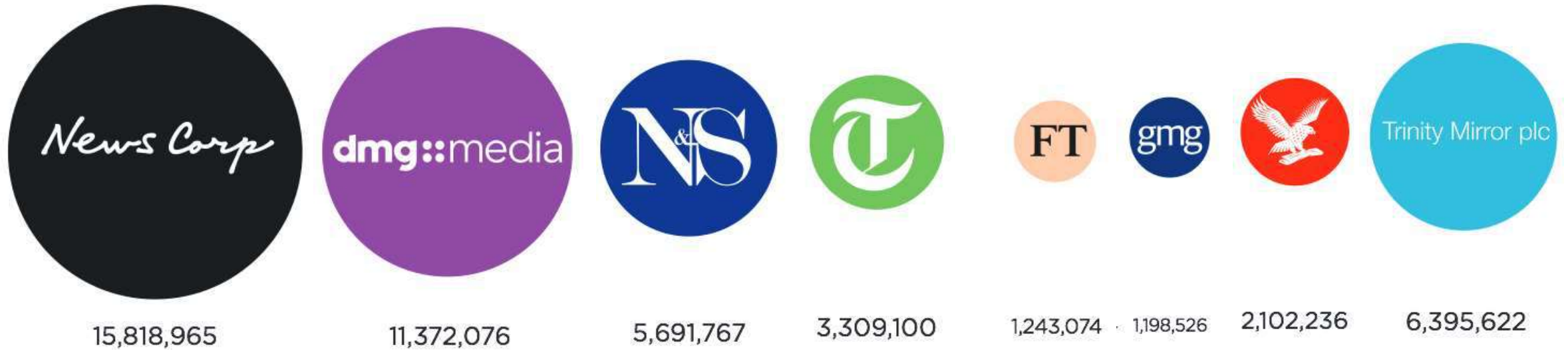






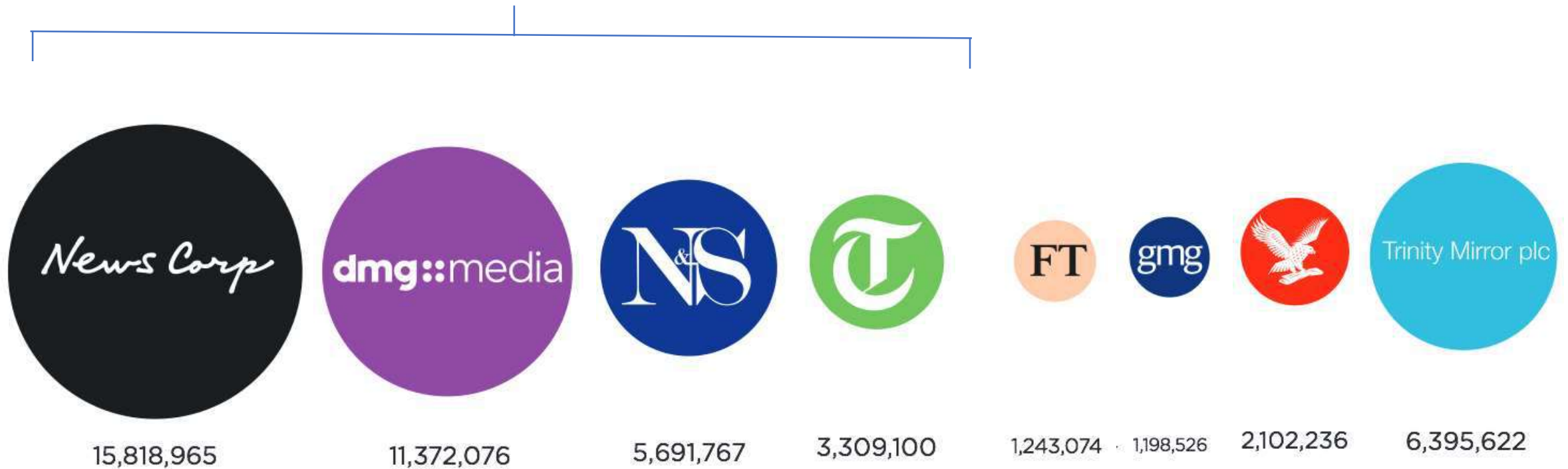
Media

A FREE PRESS?



A FREE PRESS?

Echo chamber of sexist, racist, homophobic, phone-hacking protectors of the establishment status quo



A FREE PRESS?

Echo chamber of sexist, racist, homophobic, phone-hacking protectors of the establishment status quo

Echo chamber of establishment lefty nerds and catastrophists



15,818,965



11,372,076



5,691,767



3,309,100



1,243,074



1,198,526



2,102,236



6,395,622

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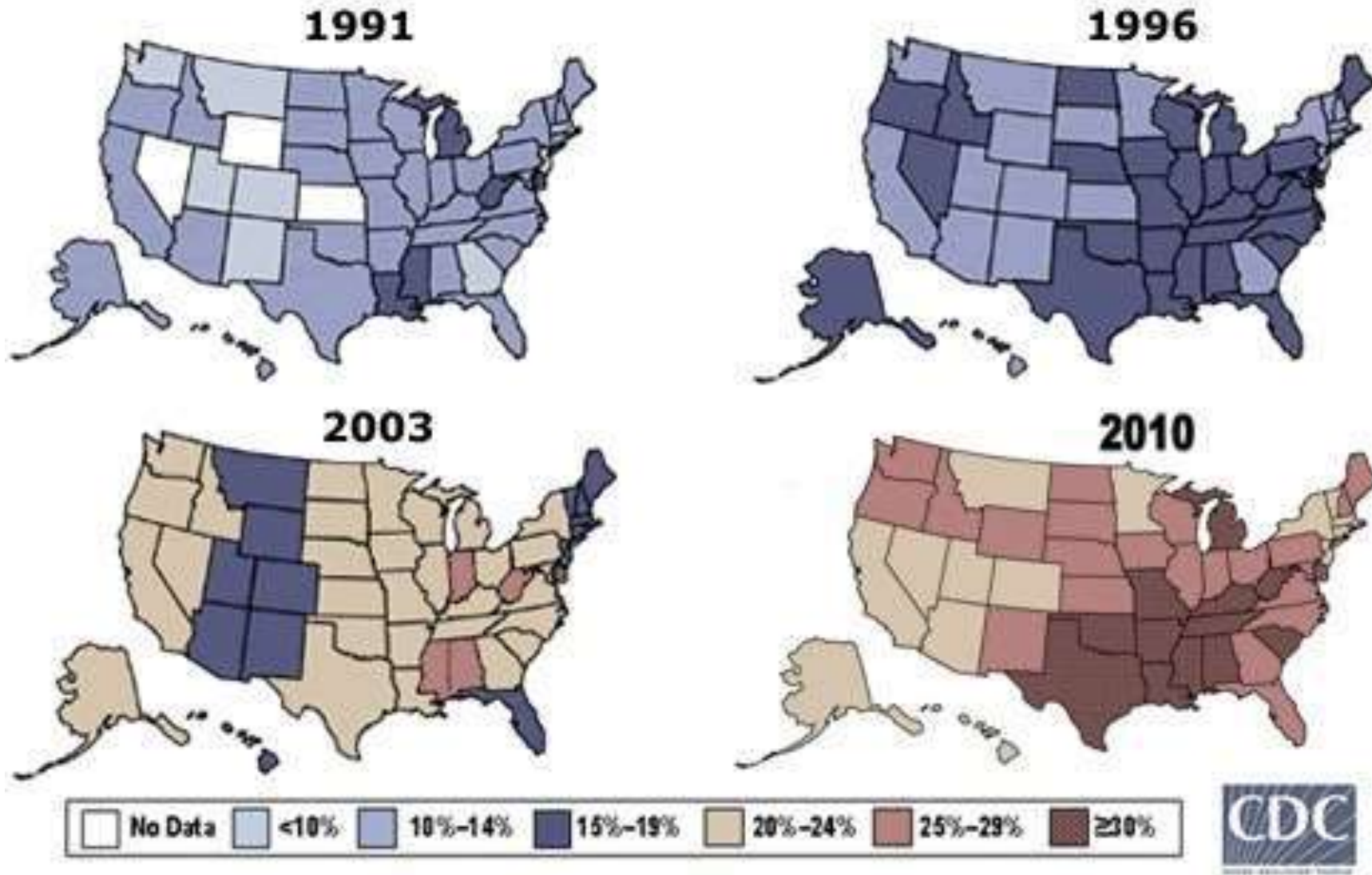
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Trust in media plunges
to all time lows

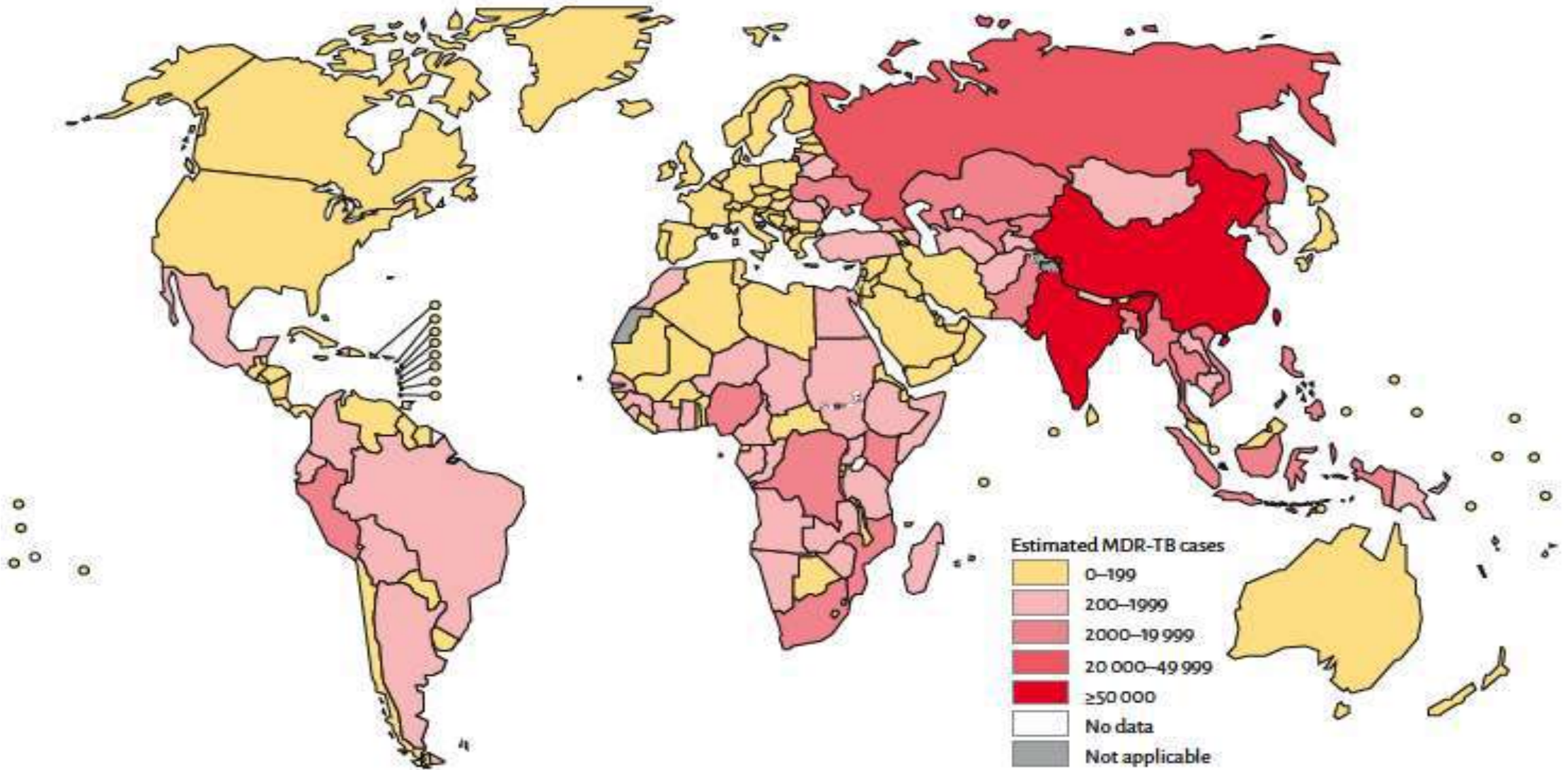


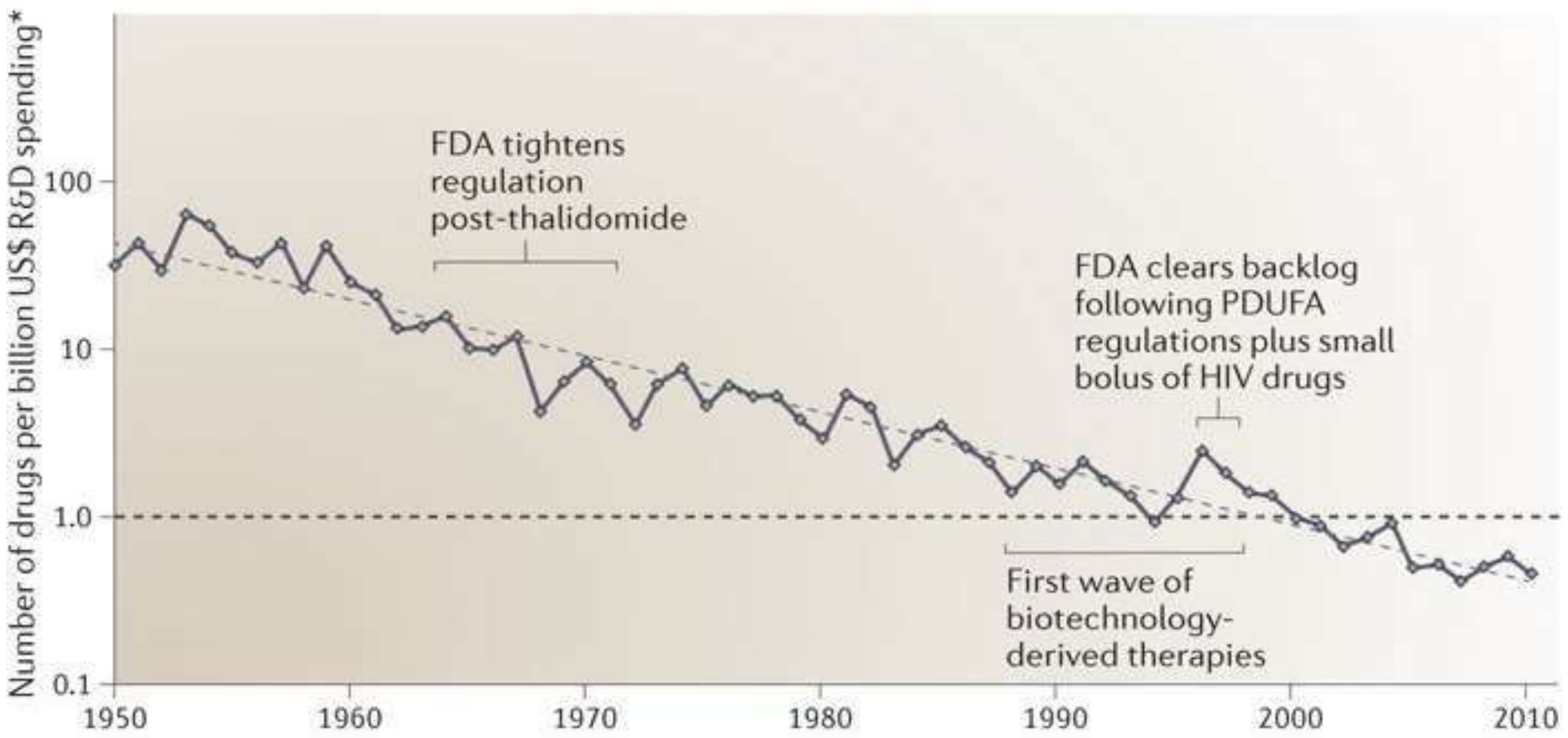
Healthcare



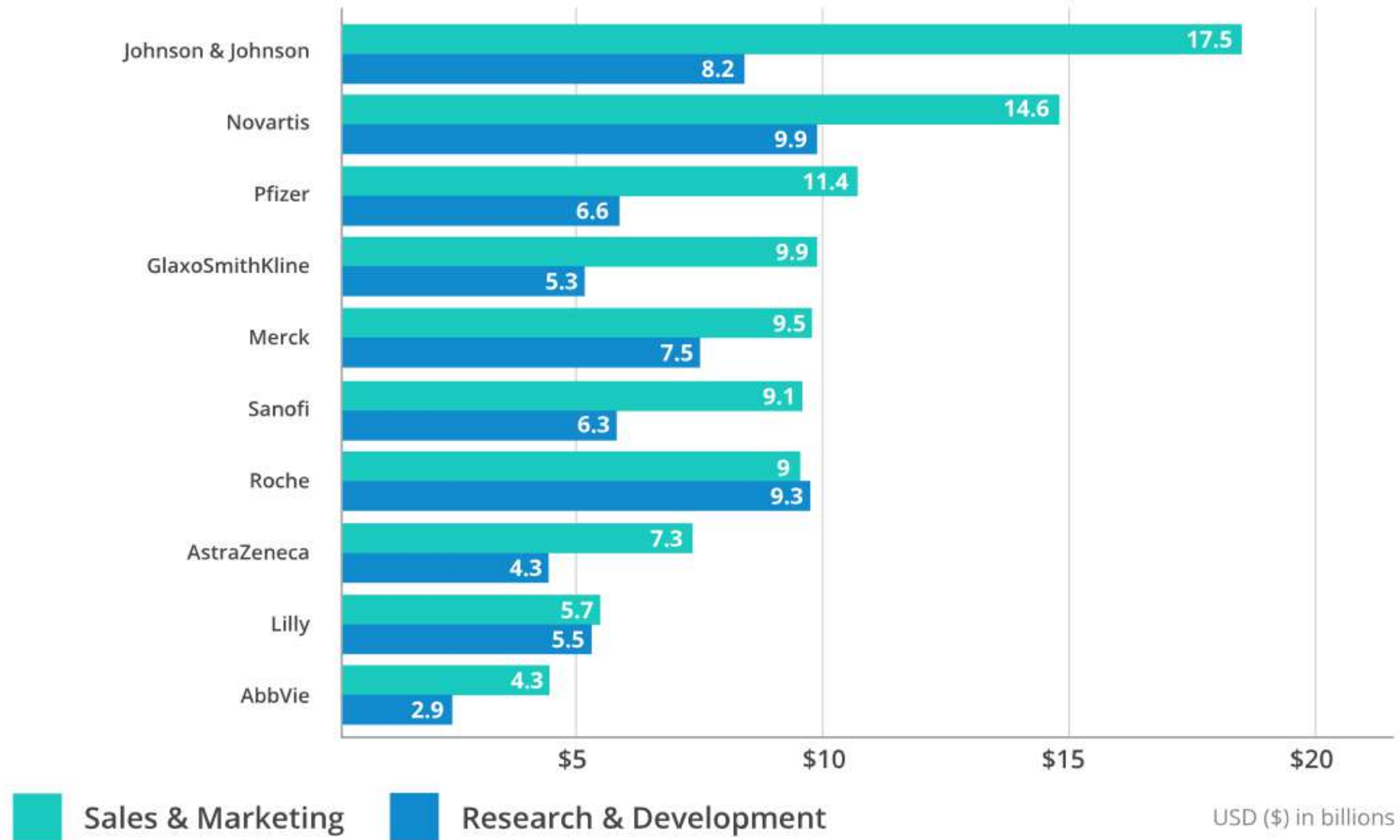


Number of MDR-TB cases estimated to occur among notified pulmonary TB cases, 2014





Big Pharma Spending: Sales & Marketing vs. Research & Development





Environment

Stockholm Resilience Centre
Sustainability Science for Biosphere Stewardship



**Stockholm
University**

**“The environment is
starting to send back
invoices”**







NATURAL CAPITAL AT RISK: THE TOP 100 EXTERNALITIES OF BUSINESS

APRIL 2013





NATURAL CAPITAL AT RISK:
THE TOP 100 EXTERNALITIES OF BUSINESS

\$7.3 trillion/ year

(or 13% of global
economic output)



Wealth

3 degrees
Saves lives daily



3 degrees
Saves lives daily
Salary: £30,000





Ex CEO, HBOS
“Colossal failure”



Ex CEO, HBOS
“Colossal failure”

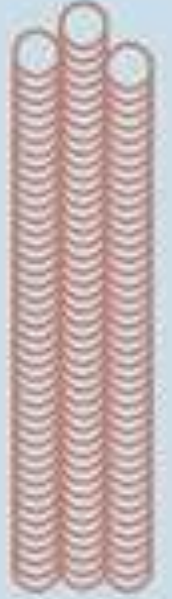
Salary: £2,000,000



% of the world's population



% of the world's wealth



1% own 50%



Work



“13% of employees across 142 countries worldwide are engaged in their jobs.

Actively disengaged workers outnumber engaged employees at a rate of nearly 2-1”



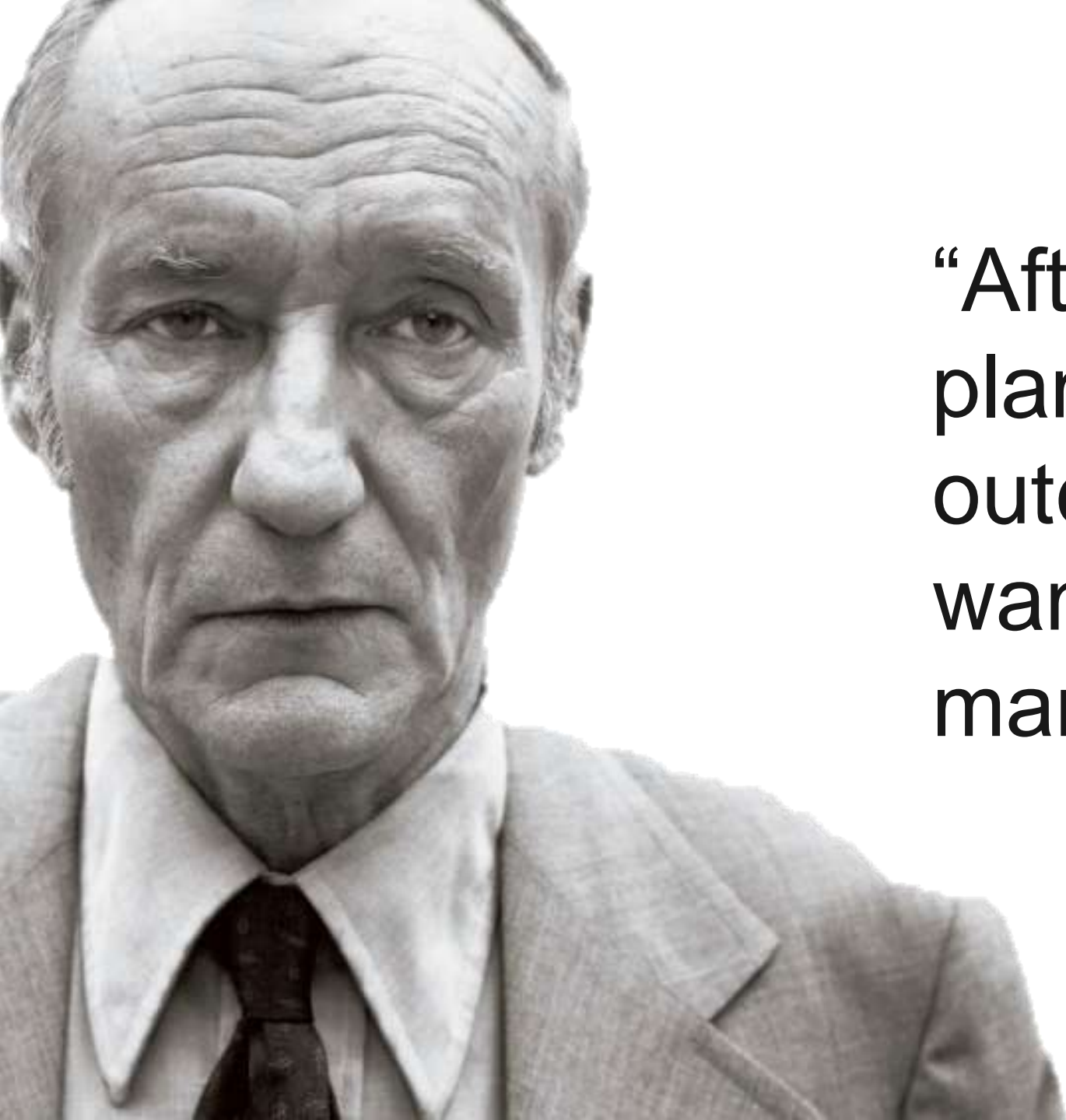
“Yes, the planet got destroyed. But for a beautiful moment in time we created a lot of value for shareholders”





Education





“After one look at this planet any visitor from outer space would say 'I want to see the manager'.”

Write out 100 times...

We want innovation, no honestly we do....

We want innovation, no honestly we do....

We want innovation, no honestly we do....

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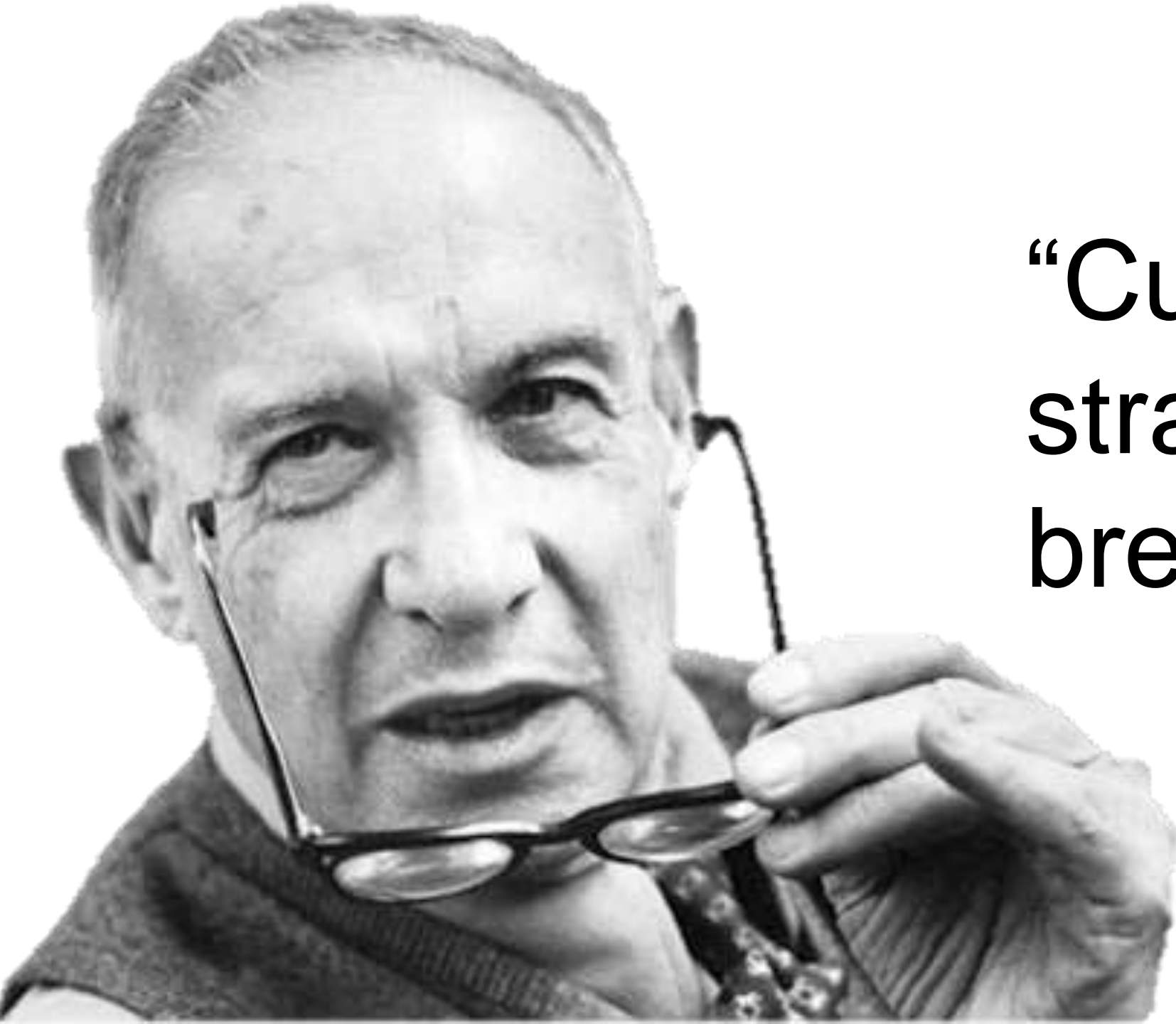
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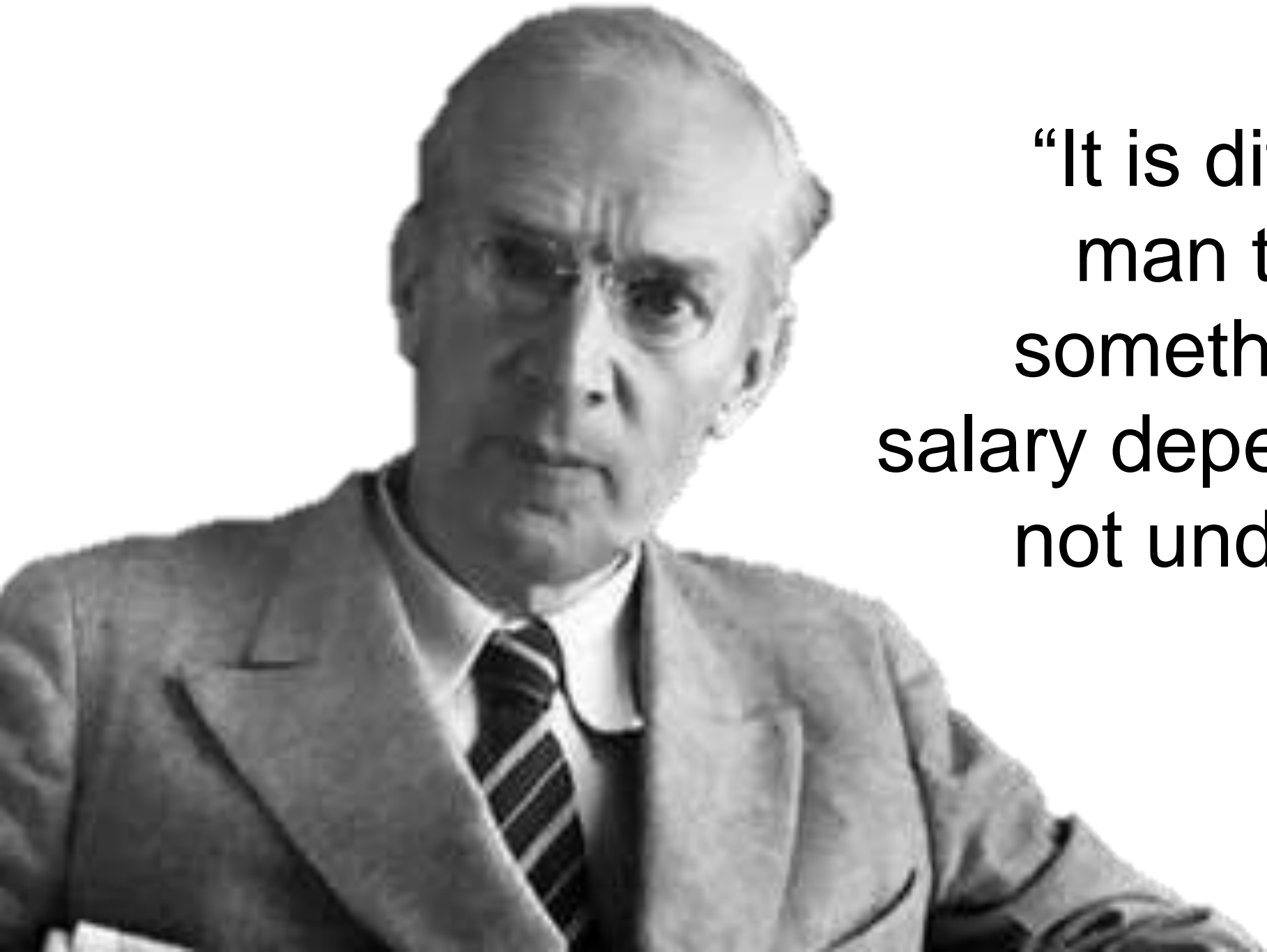
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**“Culture eats
strategy for
breakfast”**



“It is difficult to get a man to understand something, when his salary depends upon his not understanding it”

Innovation is the culture
of asking the right
questions

KERASTASE HAIR COACH



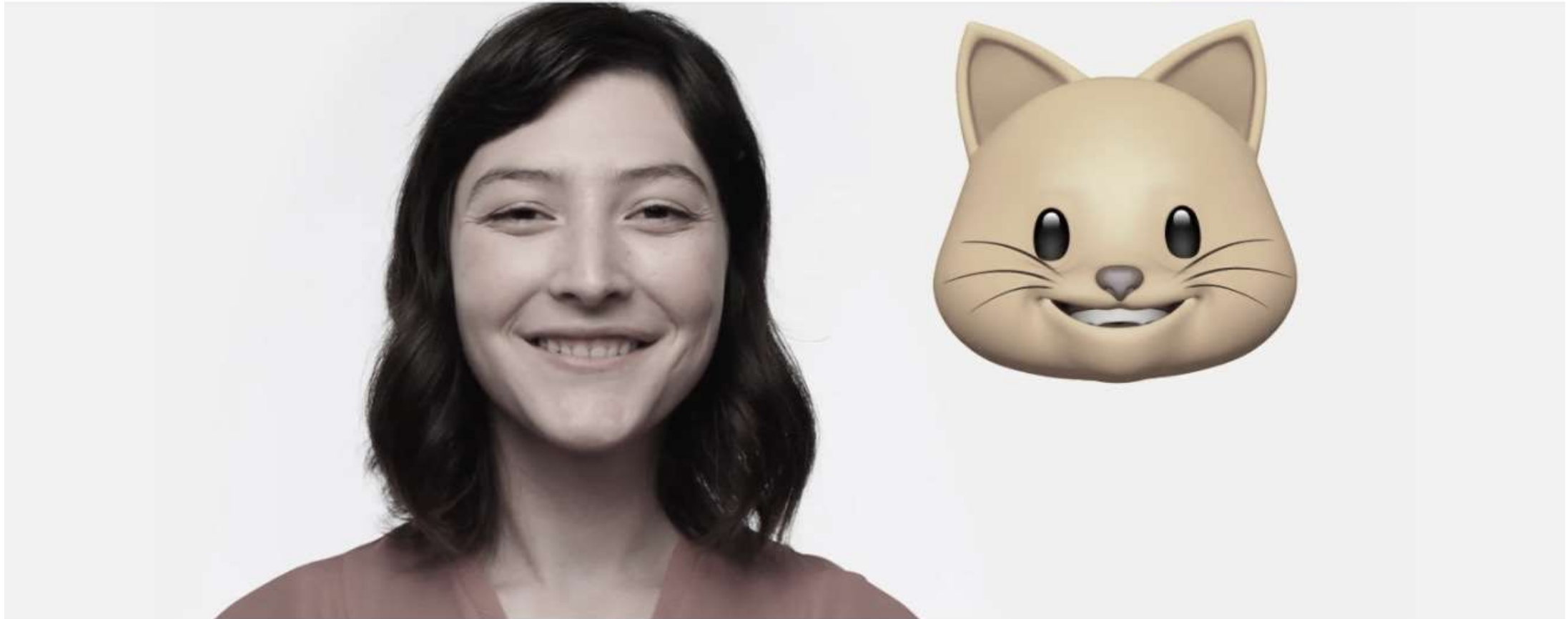
Powered by  Withings



iPhone X

Say hello to the future.





Animoji

The TrueDepth camera analyses more than 50 different muscle movements to mirror your expressions in 12 Animoji. Reveal your inner panda, pig or robot.



We can fix this

IEA raises its five-year renewable growth forecast as 2015 marks record year

(Paris) — 25 October 2016



Renewables will be the fastest-growing source of electricity but growth still concentrated in wind and solar PV, and government support remains critical

The International Energy Agency said today that it was significantly increasing its five-year growth forecast for renewables thanks to strong policy support in key countries and sharp cost reductions. Renewables have surpassed coal last year to become the largest source of installed power capacity in the world.

The latest edition of the IEA's *Medium-Term Renewable Market Report* now sees renewables growing 13% more between 2015 and 2021 than it did in last year's forecast, due mostly to stronger policy backing in the United States, China, India and Mexico. Over the forecast period, costs are expected to drop by a quarter in solar PV and 15 percent for onshore wind.

Last year marked a turning point for renewables. Led by wind and solar, renewables represented more than half the new power capacity around the world, reaching a record 153 Gigawatt (GW), 15% more than the previous year. Most of these gains were driven by record-level wind additions of 66 GW and solar PV additions of 49 GW.

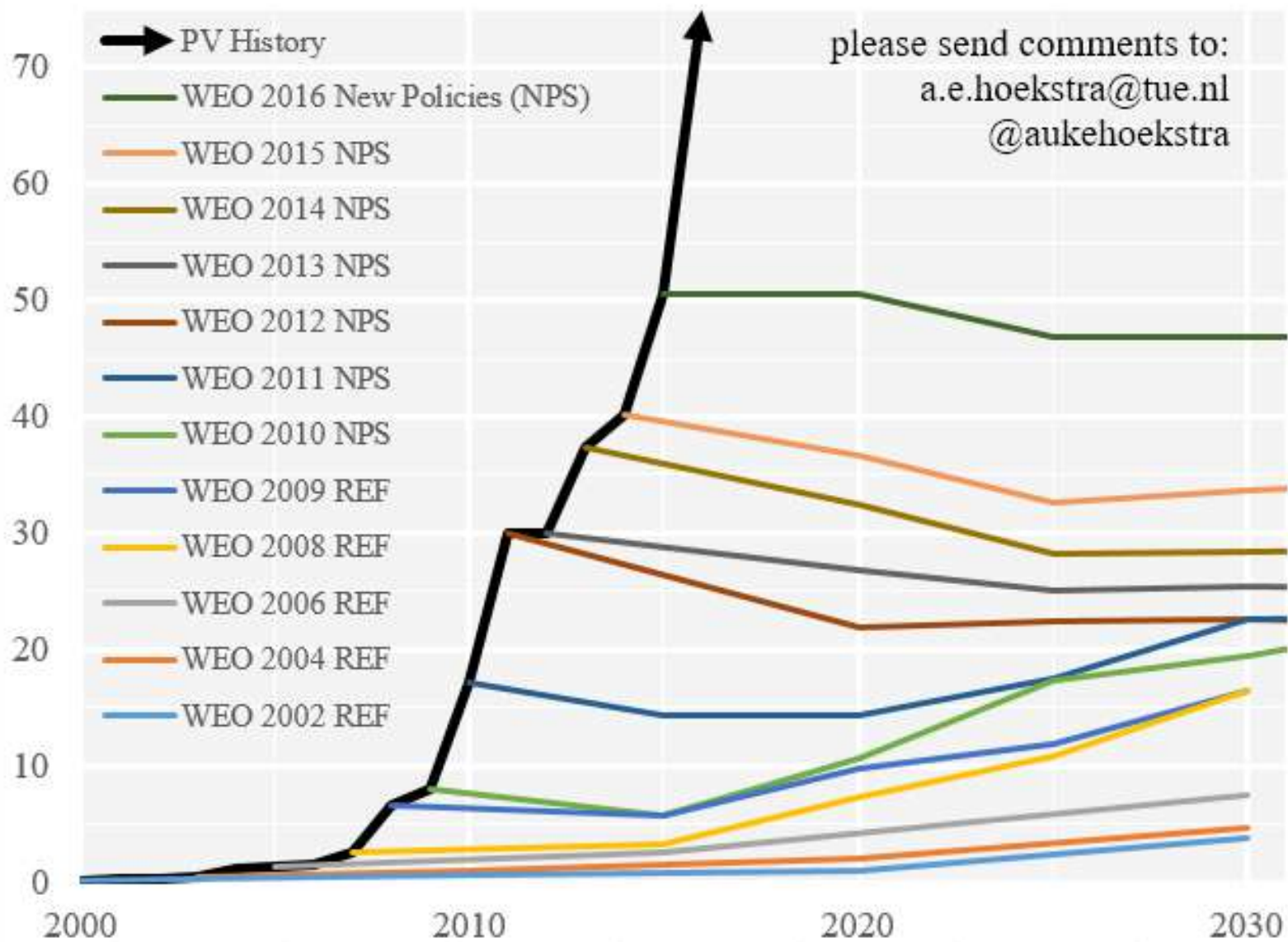
About half a million solar panels were installed every day around the world last year. In China, which accounted for about half the wind additions and 40% of all renewable capacity increases, two wind turbines were installed every hour in 2015.

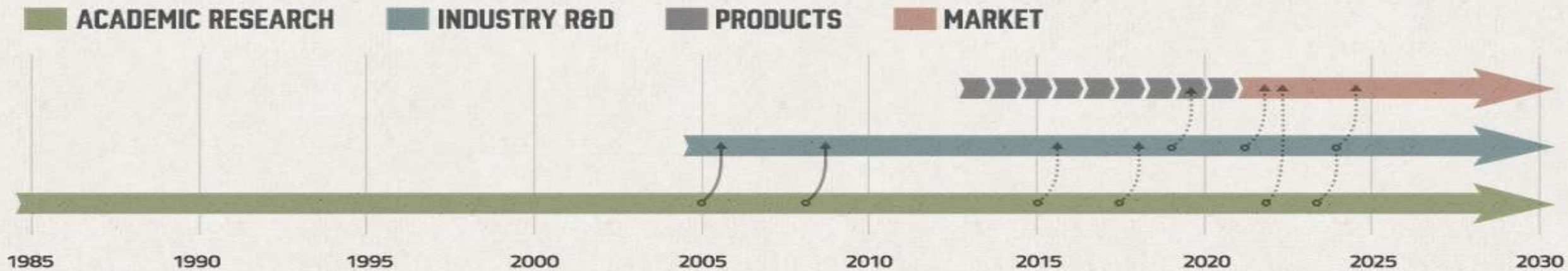


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installed
every day

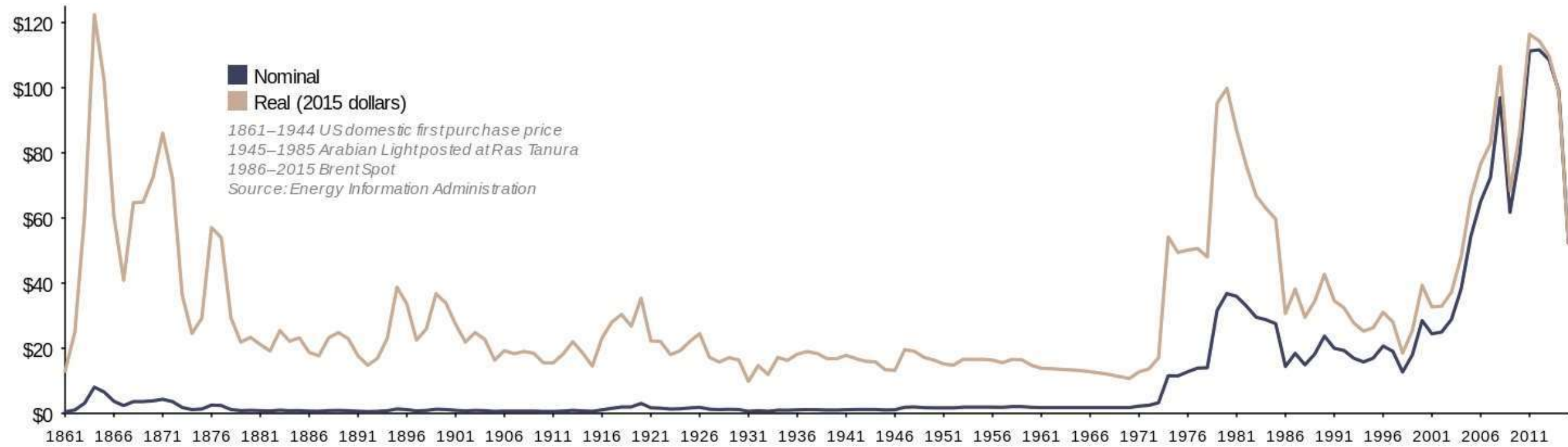
Annual PV additions: historic data vs IEA WEO predictions

In GW of added capacity per year - source International Energy Agency - World Energy Outlook







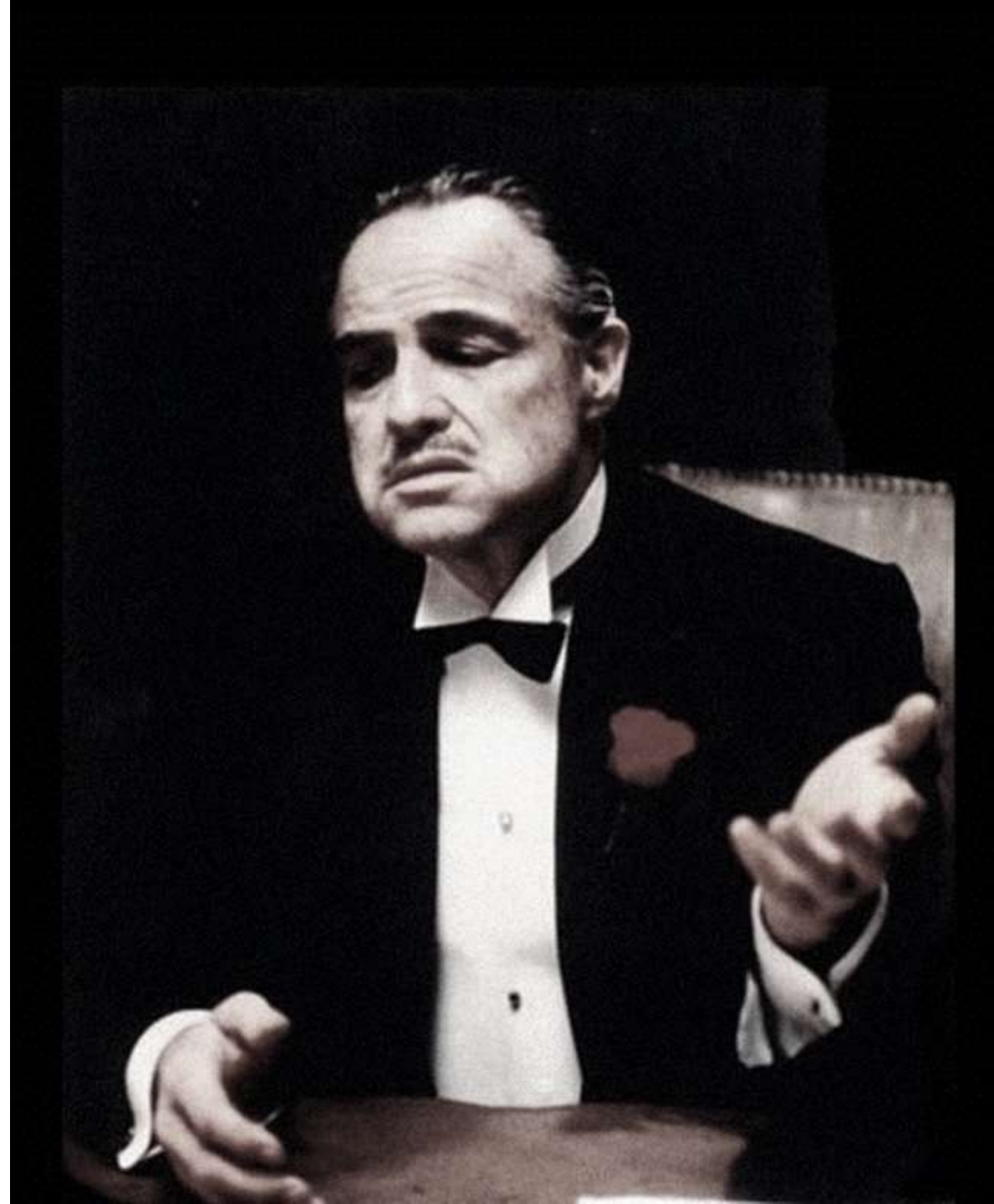




“Within 20 years, we will be an economy or state that doesn’t depend mainly on oil.”

- Deputy Crown Prince Mohammed bin Salman

“Maybe it’s not all
about family?”





“The stone age did not end for the lack of stone.”

- Sheikh Ahmed Zaki Yamani

The Big Read **Renewable Energy** [+ Add to myFT](#)

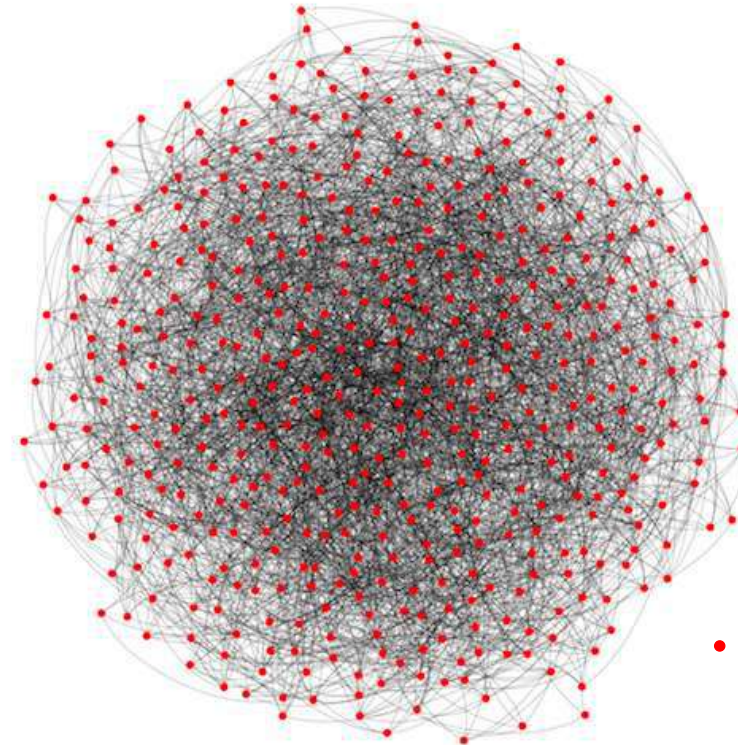
The Big Green Bang: how renewable energy became unstoppable

The shift to cleaner power is disrupting entire industries.
Will the 21st century be the last one for fossil fuels?



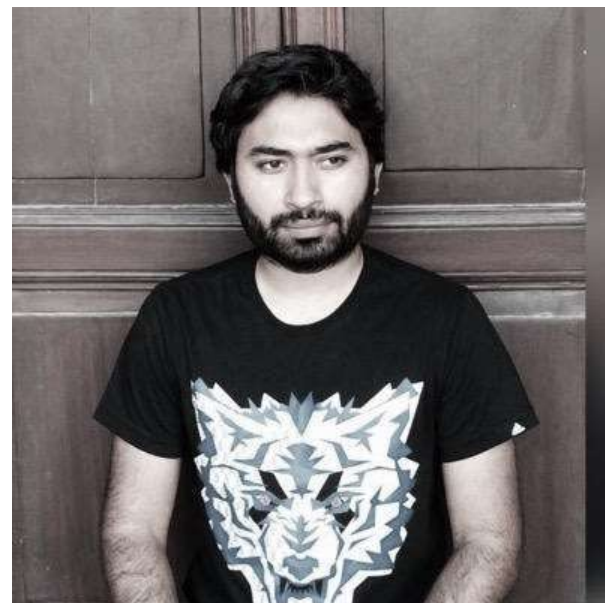
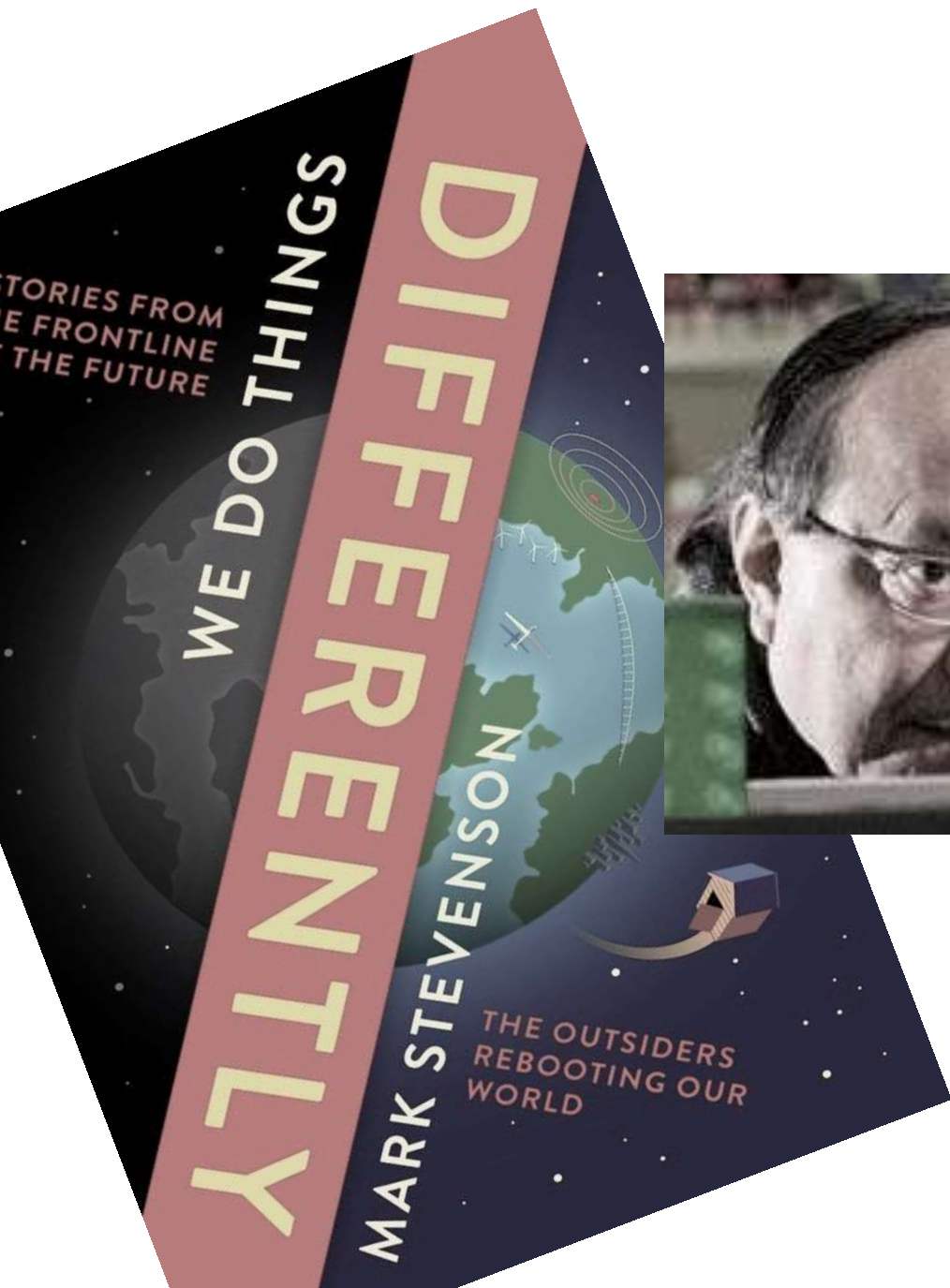


BLOCKCHAIN



• = ledger

Financial transactions • Smart contracts • Votes • Regulation • Tax





OPEN SOURCE DRUG DISCOVERY

- 11 new chinks in TBs armour
- 4 new TB drugs identified
- All IP in the public domain
- Cost: < \$15million

(average cost of commercial drug development: \$2.6billion)





Engineered from Recycled Glass
Bottle Waste



Typical 3 Bed House Printed
Out To Flat Pack



Typical 3 Bed House Walls, Floor
Pad and Roof Erected On Site

Tufeco™



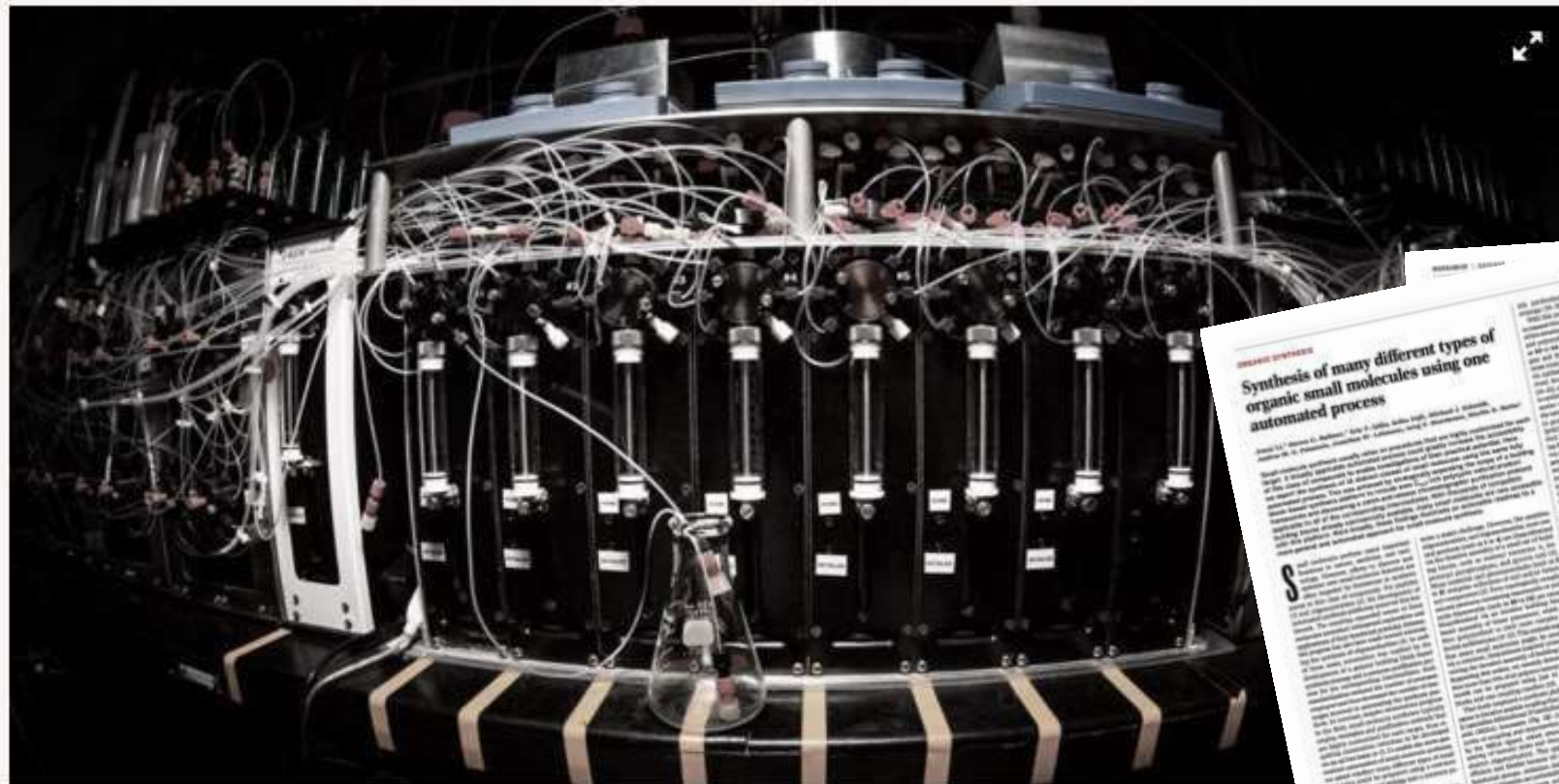


@atlasfuture @wearewtdt

@optimistontour @the_futurenavts

This Chemistry 3D Printer Can Synthesize Molecules From Scratch

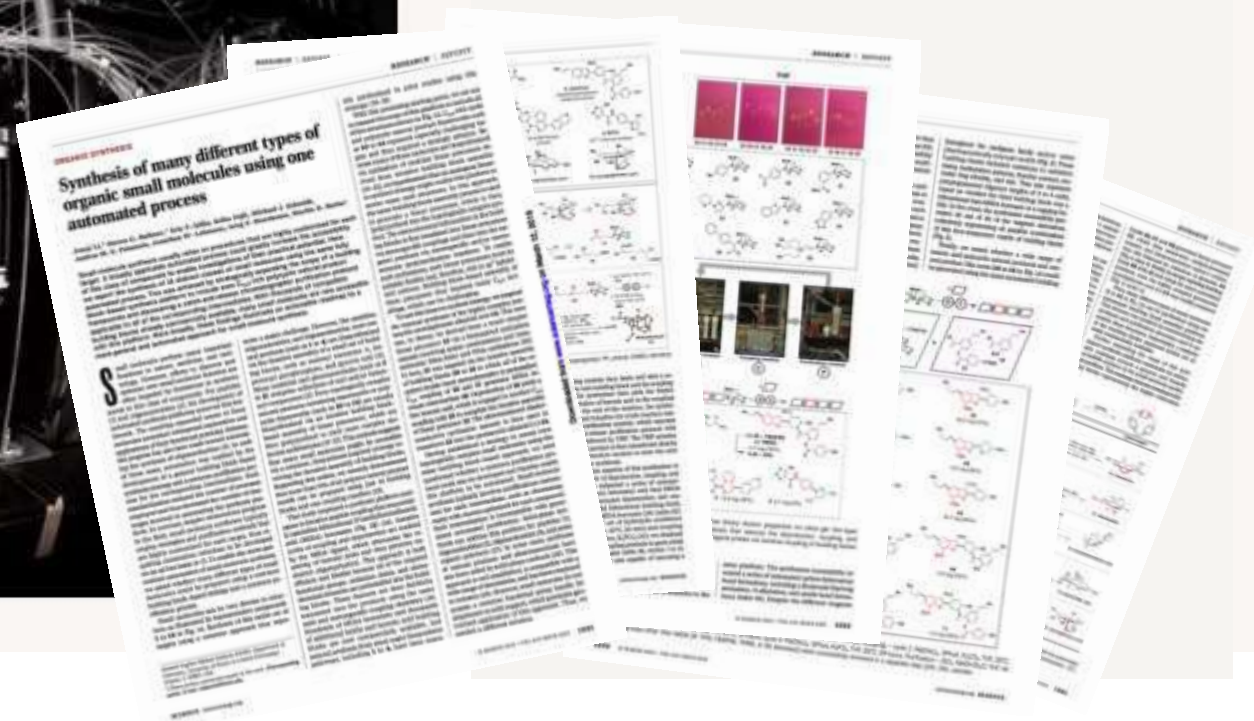
Need an obscure medicinal compound found only in a jungle plant? Just print it



Burke Laboratories

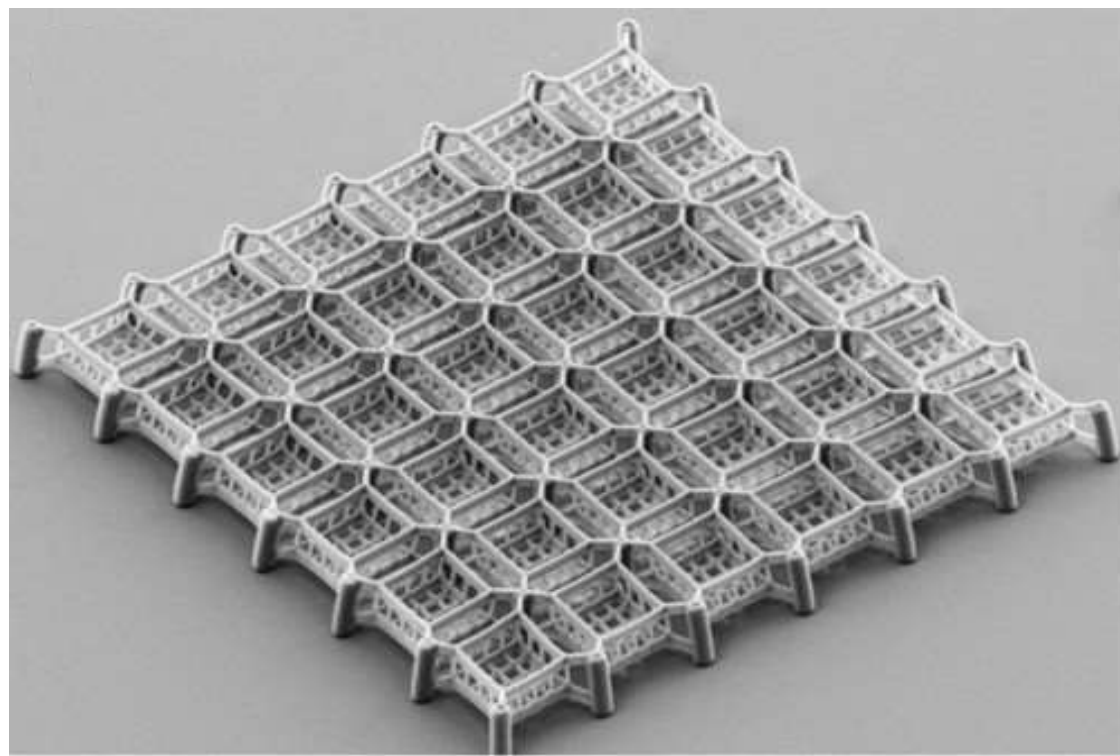
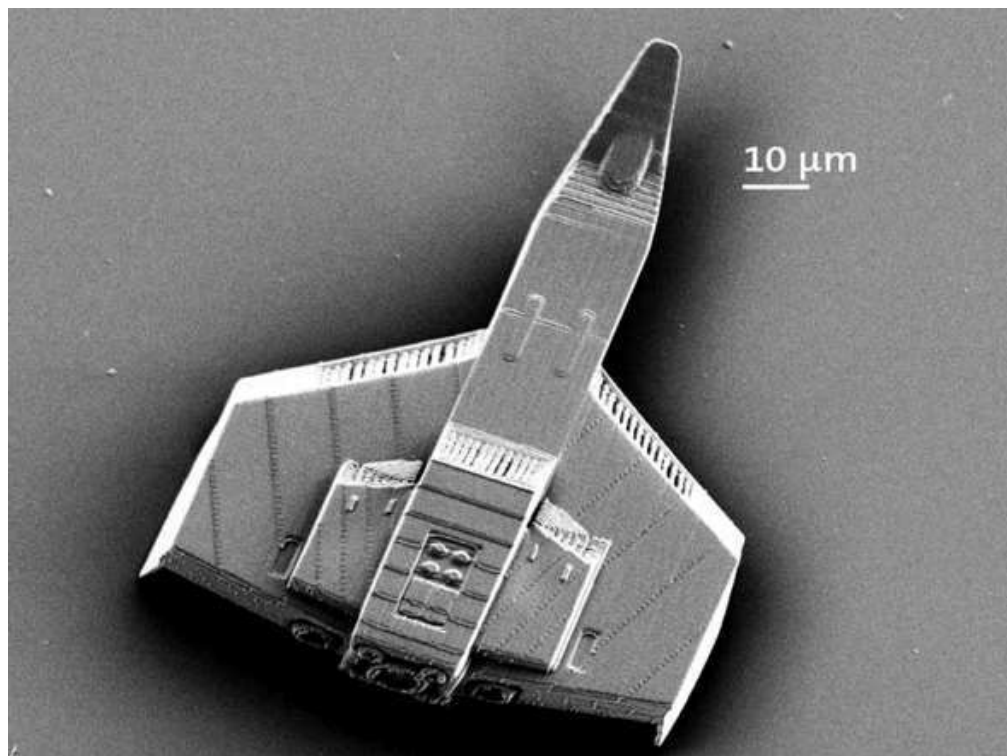


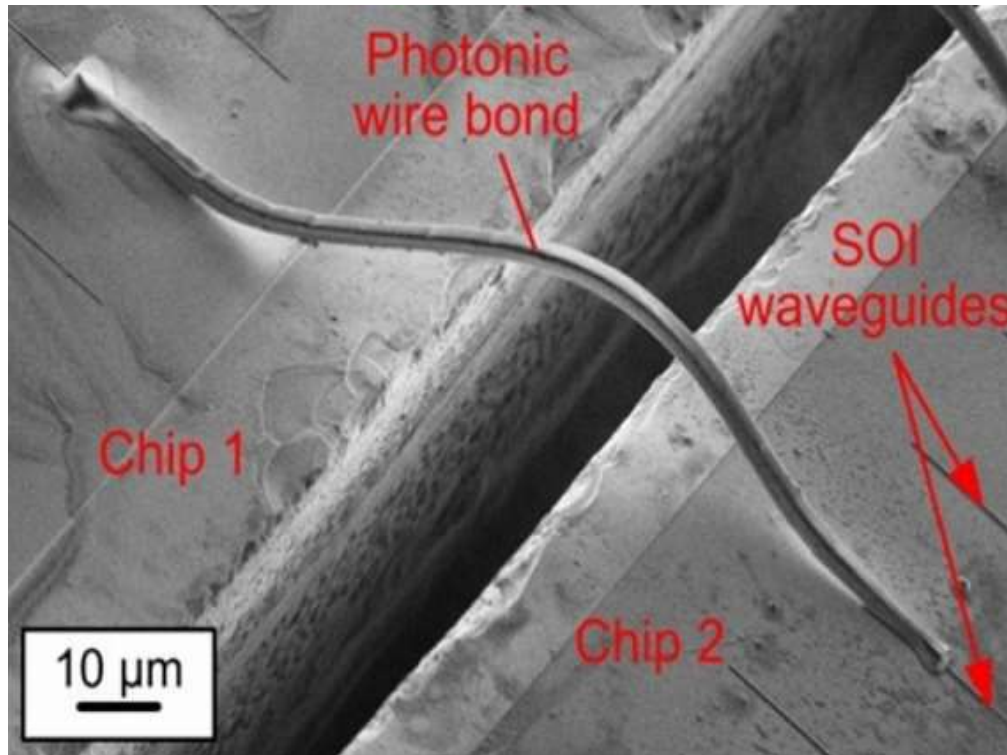
ILLINOIS
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN





nanoscribe





- 3D Photonics
- 3D Scaffolds and biometrics
- 3D Microfluidics
- 3D Mechanical microstructures
- 2.5D Micro-optics
- Nano-casts





TECHNOLOGY

3-D Printed Drugs Are Here

The FDA just approved the first pill produced by the technique, but historians say the manufacturing process probably won't threaten big drug companies.



ROBINSON MEYER | AUG 19, 2015

Over the past decade, 3-D printers have been hailed as changing everything from [fashion](#) to [firearms](#). Now, they're coming to the pharmaceutical business—or, at least, they seem to be.

Earlier this month, the U.S. Food and Drug Administration approved the first 3-D-printed pill: *Spritam levetiracetam*, a drug which can reduce seizures among epileptics. Manufactured by the American pharmaceutical company Aprecia, it's produced not by a [tableting machine](#), but by a special process where the drug's active and inactive ingredients are laid down layer-by-layer.

Spritam levetiracetam







@atlasfuture @wearewtd

@optimistontour @the_futurenavts





It's going to get
messy

“There will be whole nations that end up on the scrap heap because they don’t understand this stuff”



“Nearly every social
and technical and
business infrastructure
we have can’t survive”



digital

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WANG

digital



ICL



WANG

WOOLWORTHS

HOME | BIZ | NEWS

Epic Fail: How Blockbuster Could Have Owned Netflix

Marc Graser
Senior Editor
[@marcgraser](#)



NOVEMBER 12, 2013 | 12:28PM PT



JUSTIN SULLIVAN/GETTY IMAGES

Blockbuster chiefs lacked the vision to see how the industry was shifting under the video rental chain's feet

It will go down as one of the biggest missed opportunities in the boardroom: Blockbuster deciding not to buy Netflix.

Blockbuster's CEO once passed up a chance to buy Netflix for only \$50 million



Celena Chong  

© Jul. 17, 2015, 8:26 PM ★4,718



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Former Blockbuster workers all over the world must cringe every time they hear the words "online streaming" and "on-demand."

That's because back in 2000, Reed Hastings approached former Blockbuster CEO John Antioco and asked for \$50 million to give away the company he founded — Netflix.

Antioco, thinking that it was a "very small niche business," ended



Former Blockbuster CEO John Antioco Bloomberg

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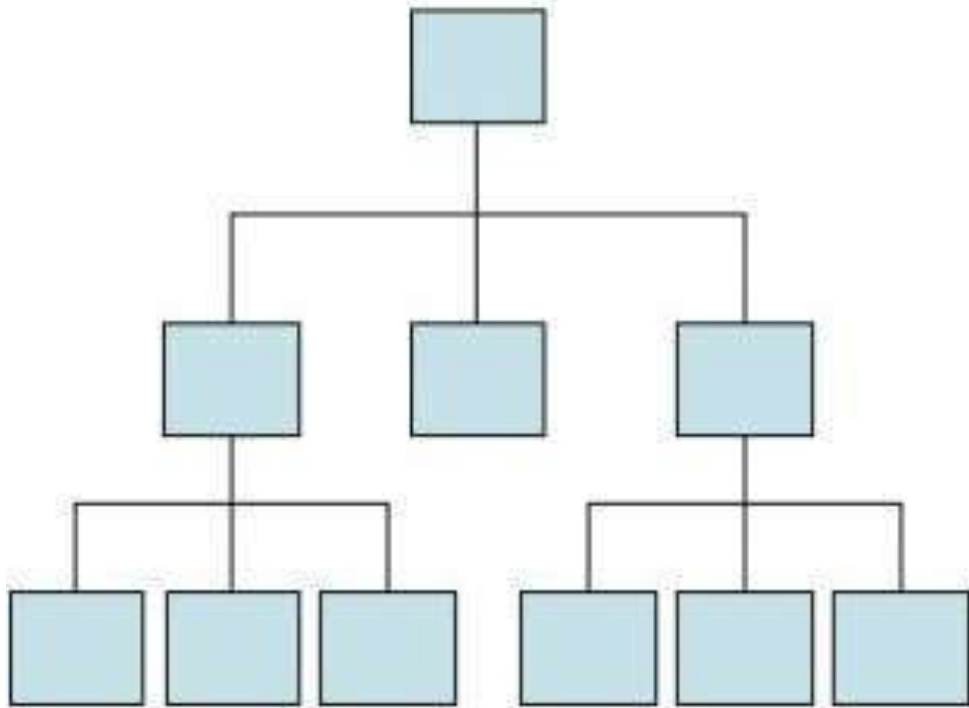
Everyone else



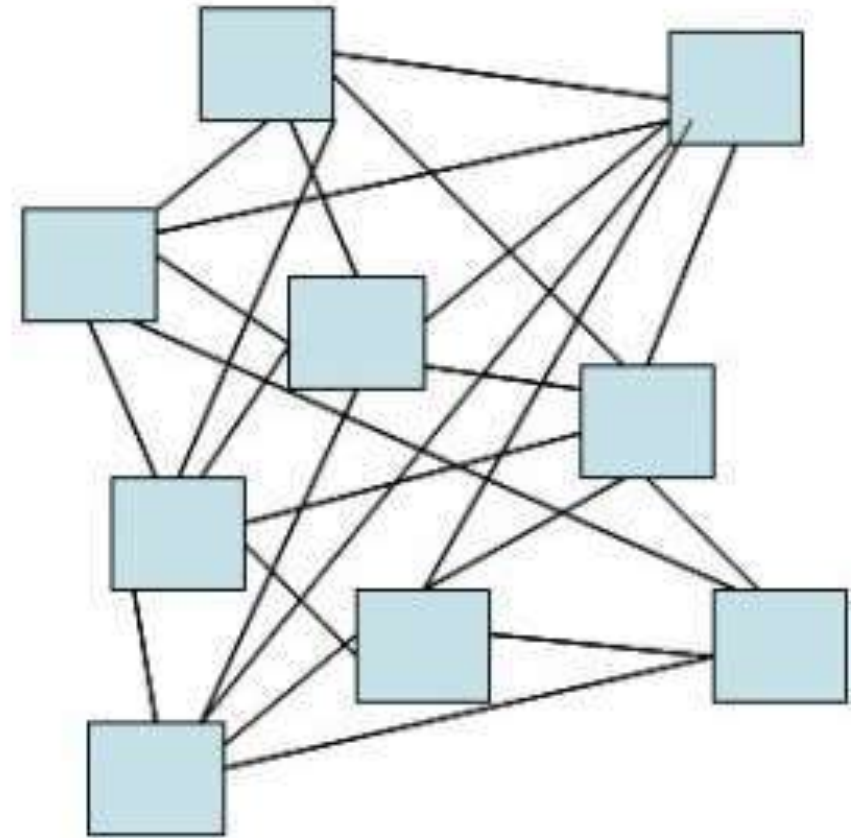
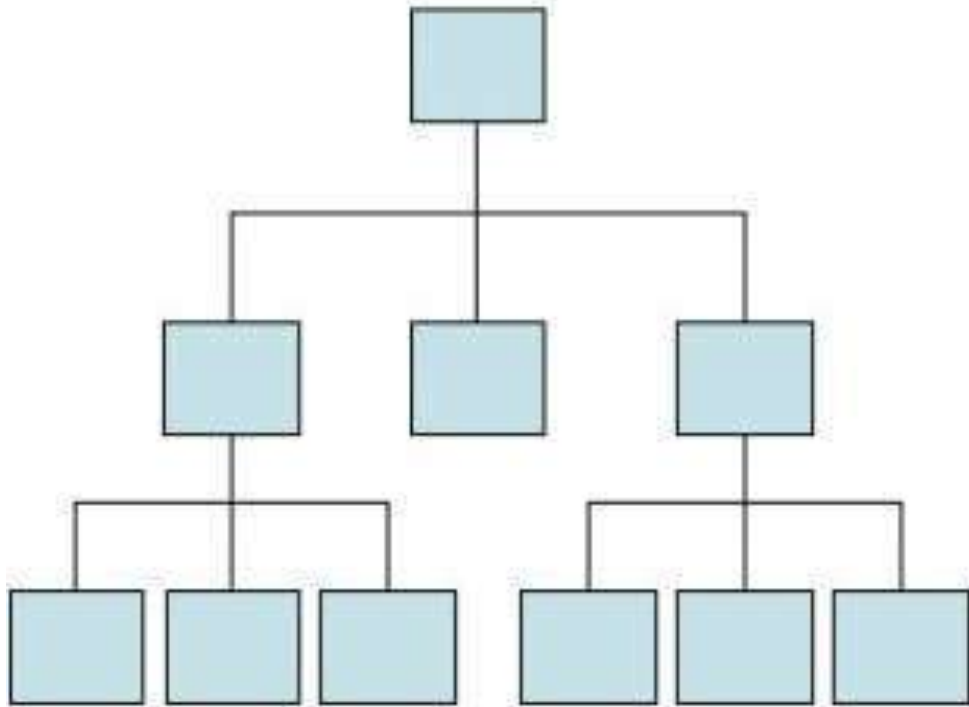
Allianz 



From economies of scale....

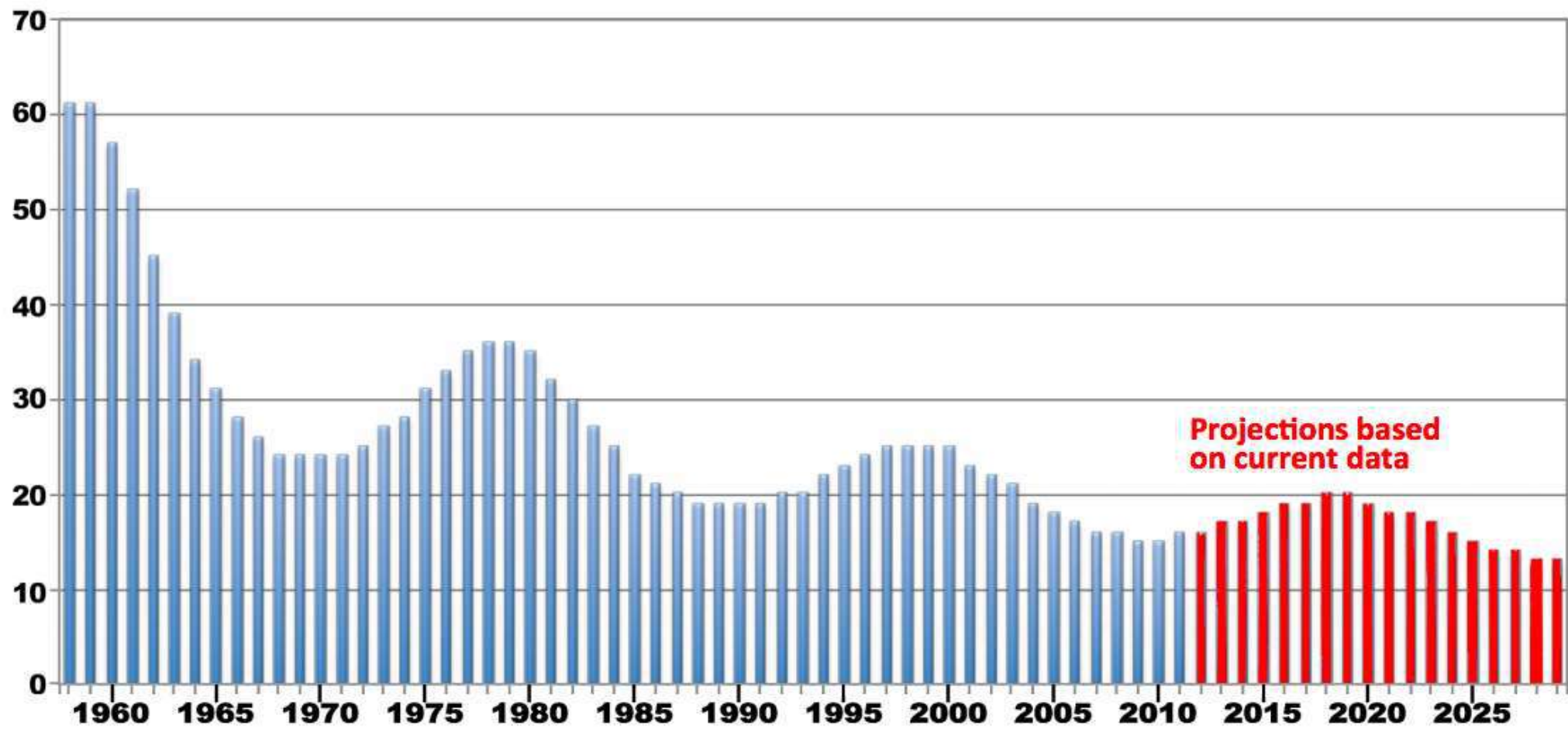


From economies of scale....



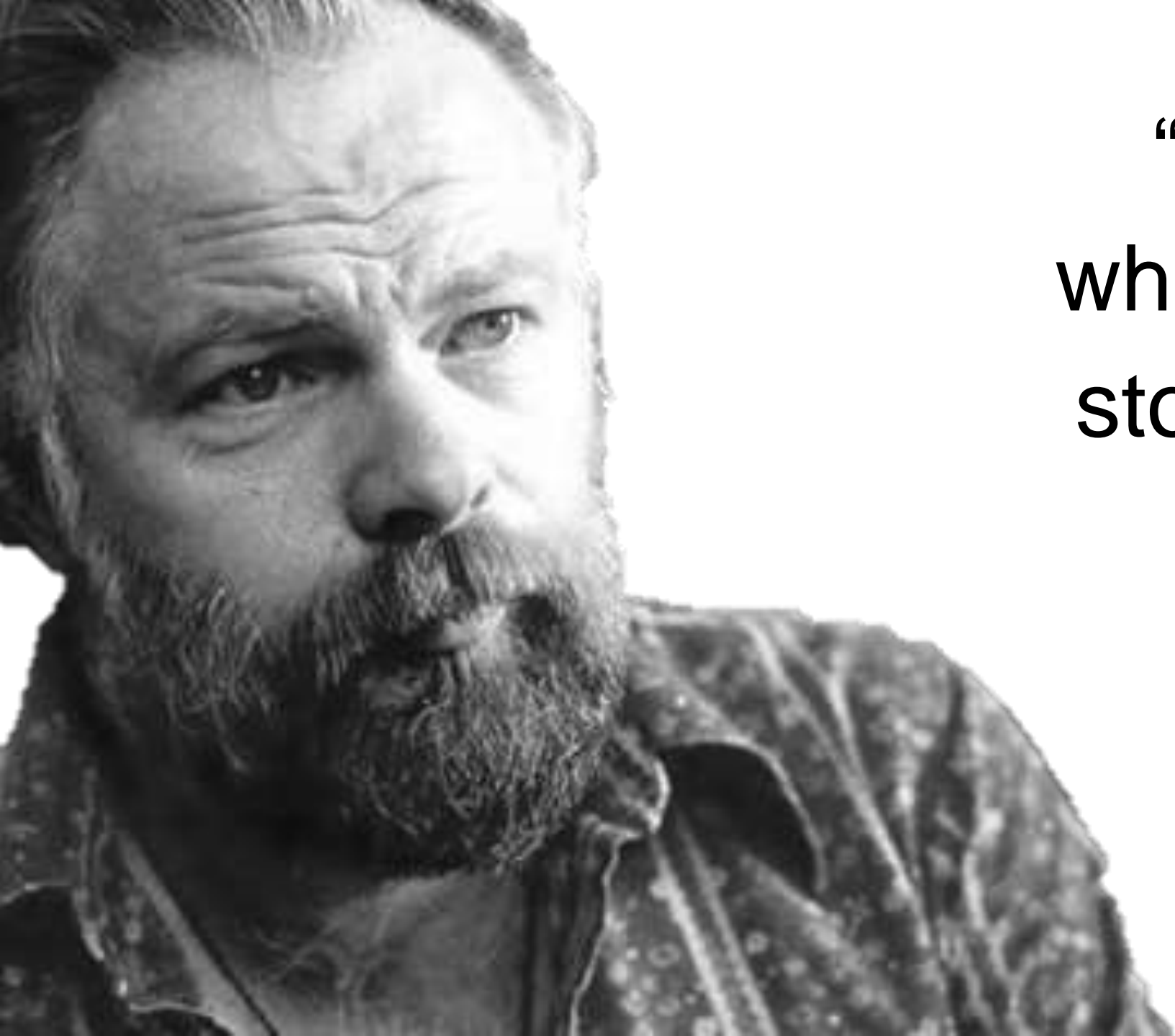
...to economies of distribution

Average company lifespan on S&P 500 Index (in years)

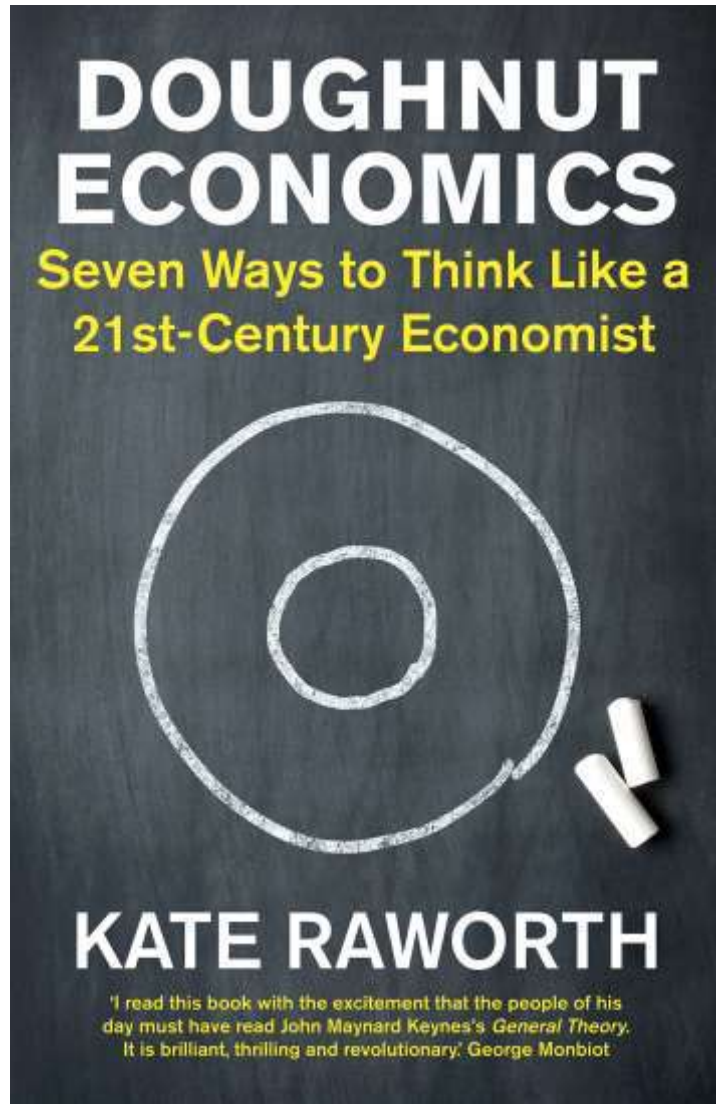


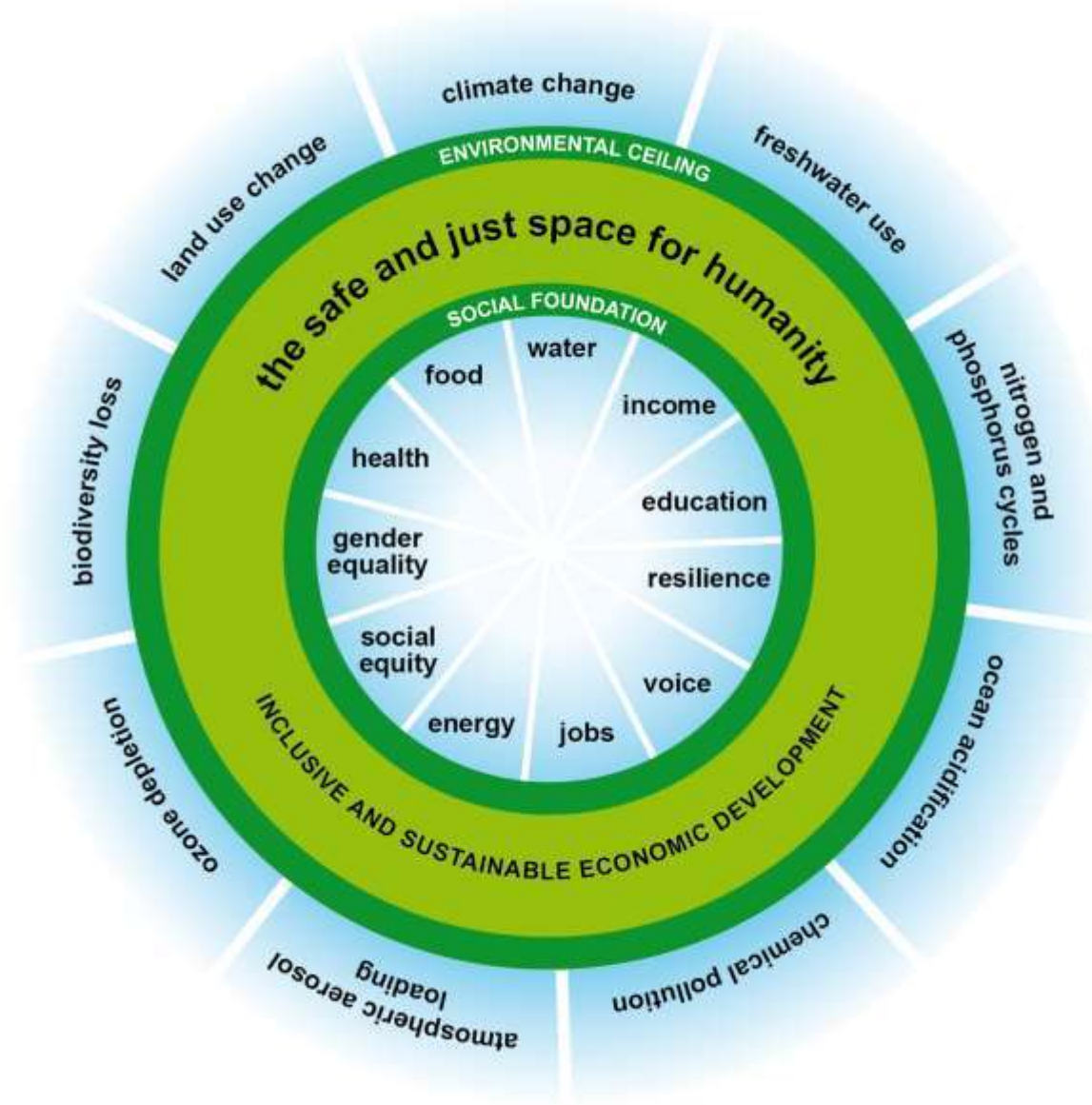
Year (each data point represents a rolling 7-year average of average lifespan)

DATA: INNOSIGHT/Richard N. Foster/Standard & Poor's

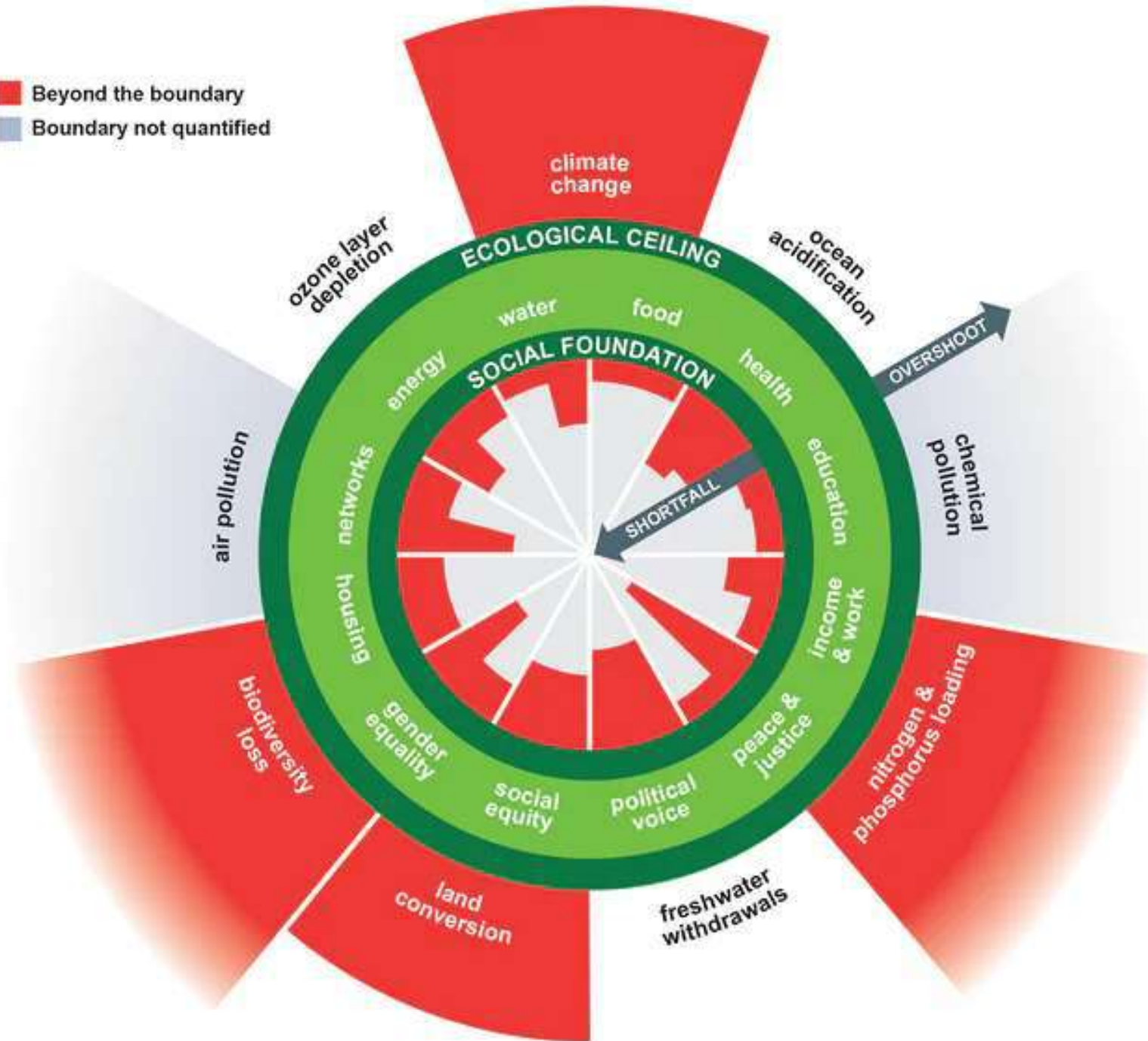


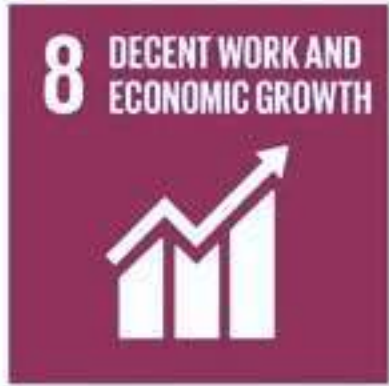
“Reality is that
which, when you
stop believing in
it, doesn’t go
away.”





- Beyond the boundary
- Boundary not quantified







High Sustainability companies significantly outperform their counterparts over the long-term, both in terms of stock market as well as accounting performance.




**SUSTAINABLE
DEVELOPMENT
GOALS**



Translation:

It's an excellent time
to be in forestry

Taking the future
seriously will cost some
people their jobs



Taking the future
seriously will cost some
people their jobs

Not taking the future
seriously will cost
everyone their jobs

“If you want to subvert
the status quo you
need to have more fun
than they are and let
them know while you’re
doing it”





“A great wind is blowing and that gives you either imagination or a headache.”





Atlas of
the Future

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