

Social impact of AI

Impacts of artificial intelligence on
the economy, society and the
environment

Menu

- 14.30 - 14.45 - [Piero Poccianti](#) - Introduction
- 14.45 - 15.00 - [Francesca Rossi](#) - Ethical Intelligent Systems
- 15.00 - 15.15 - [Moshe Vardi](#) - Economical Impact of AI
- 15.15 - 15.30 - [Oren Etzioni](#) - AI Won't Exterminate Us, It Will Empower Us
- 15.30 - 15.50 - Open Discussion
- 15.50 - 16.00 - [Amedeo Cesta](#) - Closing
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Francesca Rossi

- Francesca Rossi is a professor of computer science at the [University of Padova](#), Italy. Currently she is on sabbatical at Harvard with a [Radcliffe](#) fellowship.
- Her research interests include constraint reasoning, preferences, multi-agent systems, computational social choice, and artificial intelligence.
- She has been president of the international association for constraint programming ([ACP](#)) and she is now the president of [IJCAI](#). She has been program chair of [CP 2003](#) and of [IJCAI 2013](#).
- She is in the editorial board of [Constraints](#), [Artificial Intelligence](#), [AMAI](#), and [KAIS](#). She will be Editor in Chief of [JAIR](#) starting January 2015.
- She has published over 160 articles in international journals, in proceedings of international conferences or workshops, and as book chapters. She has co-authored a book. She has edited 16 volumes, between conference proceedings, collections of contributions, and special issue of international journals. She has co-edited the [Handbook of Constraint Programming](#) (Elsevier, 2006). Her h-index is 27. Her most cited papers have more than 560 citations.

Moshe Y. Vardi

- Moshe Y. Vardi is Karen Ostrum George Distinguished Service Professor in Computational Engineering and Director of the [Ken Kennedy Institute for Information Technology](#). He is the recipient of three IBM Outstanding Innovation Awards, the ACM SIGACT Goedel Prize, the ACM Kanellakis Award, the ACM SIGMOD Codd Award, the Blaise Pascal Medal, the IEEE Computer Society Goode Award, the EATCS Distinguished Achievements Award, and the Southeastern Universities Research Association's Distinguished Scientist Award. He is the author and co-author of over 500 papers, as well as two books: Reasoning about Knowledge and Finite Model Theory and Its Applications. He is a Fellow of the Association for Computing Machinery, the American Association for Artificial Intelligence, the American Association for the Advancement of Science, the European Association for Theoretical Computer Science, the Institute for Electrical and Electronic Engineers, and the Society for Industrial and Applied Mathematics. He is a member of the US National Academy of Engineering and National Academy of Science, the American Academy of Arts and Science, the European Academy of Science, and Academia Europaea. He holds honorary doctorates from the Saarland University in Germany, Orleans University in France, and UFRGS in Brazil. He is the Editor-in-Chief of the Communications of the ACM His interests focus on automated reasoning, a branch of Artificial Intelligence with [broad applications to computer science](#), including database theory, computational-complexity theory, knowledge in multi-agent systems, [computer-aided verification](#), and [teaching logic](#) across the curriculum.

Oren Etzioni

- Oren Etzioni
- *Director of the Allen Institute for Artificial Intelligence*
- *Friday 25th, 09.00 - 10.00, Main Room*
- Dr. Oren Etzioni is Chief Executive Officer of the Allen Institute for Artificial Intelligence. He has been a Professor at the University of Washington's Computer Science department starting in 1991, receiving several awards including GeekWire's Hire of the Year (2014), Seattle's Geek of the Year (2013), the Robert Engelmere Memorial Award (2007), the IJCAI Distinguished Paper Award (2005), AAAI Fellow (2003), and a National Young Investigator Award (1993). He was also the founder or co-founder of several companies including Farecast (sold to Microsoft in 2008) and Decide (sold to eBay in 2013), and the author of over 100 technical papers that have garnered over 22,000 citations.

The goal of Oren's research is to solve fundamental problems in AI, particularly the automatic learning of knowledge from text. Oren received his Ph.D. from Carnegie Mellon University in 1991, and his B.A. from Harvard in 1986.
- **Title: *The Future of AI***
- How should we build on the success of Machine Learning, and most recently of Deep Learning, over the coming decades? Does AI research create threats for society, or will it be a source of beneficial technology? My talk will address these issues by describing the projects and perspective at the Allen Institute for AI (www.allenai.org) in Seattle.

AI evolution and hype

[robot-sex-is-the-future](#)

[please-dont-have-sex-with-robots](#)

[The Holy Grail: Machine Learning+Extreme Robotics](#)

[ibm-watson-wont-be-replacing-humans-any-time-soon](#)

[Veteran's new artificial leg has artificial intelligence](#)

[cina-robot-al-posto-dei-lavoratori-per-rispondere-all'aumento-dei-salari](#)

[il-robot-con-la-faccia-di-leonardo](#)

[how-survive-artificial-super-intelligence](#)

[The Future of AI: Opportunities and Challenges](#)

[facebook-vuole-diventare-matrix](#)

[The great job-creating machine](#)

[Human Extinction Risks due to Artificial Intelligence Development](#)

[futureoflife.org:
open letter autonomous weapons](#)

[AI weapon \(Peace Walker Project\)](#)

[Superintelligence: Paths, Dangers, Strategies](#)

[Our Final Invention](#)

[Intelligent personal assistant](#)

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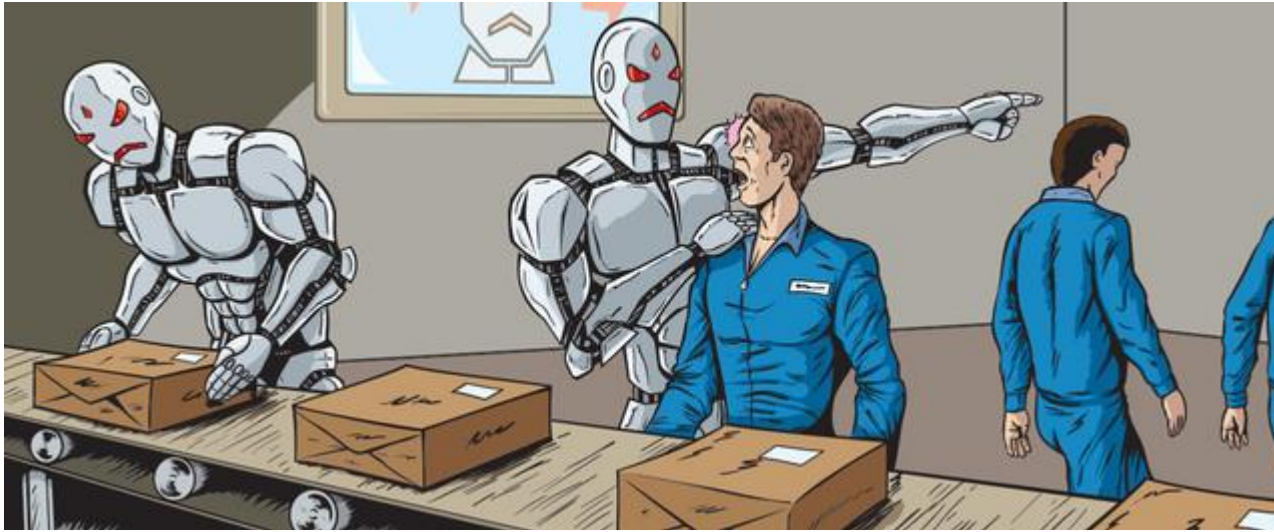
[Superintelligence: Paths, Dangers, Strategies](#)

[Our Final Invention](#)

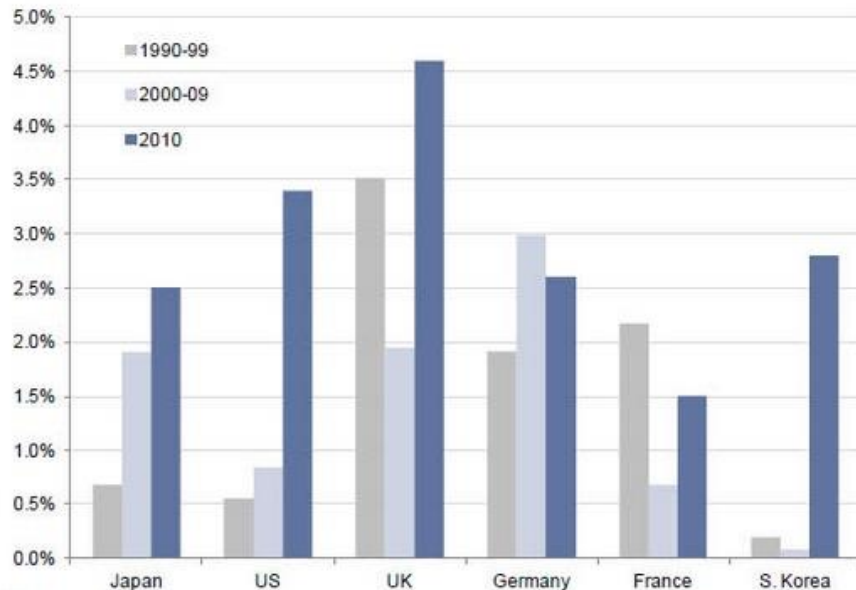
[Intelligent personal assistant](#)



AI and economics



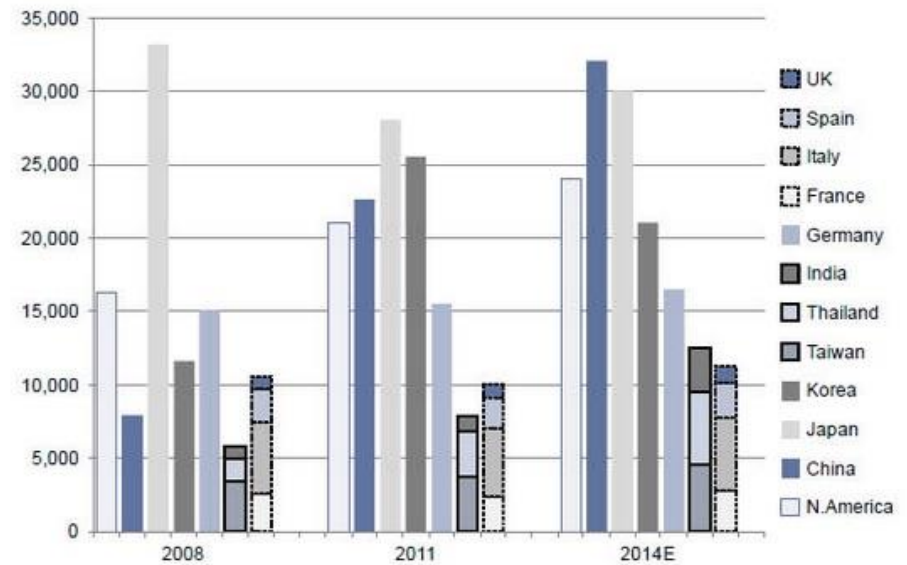
Grinding higher
Long-term unemployment rate



Source: OECD.

Storm troopers

Estimated units of industrial robots shipped during 2008-11, 2014*



Source: IFR, national robot associations.

* 2014 figures are estimates

unemployment

DIGITAL LIFE IN 2025



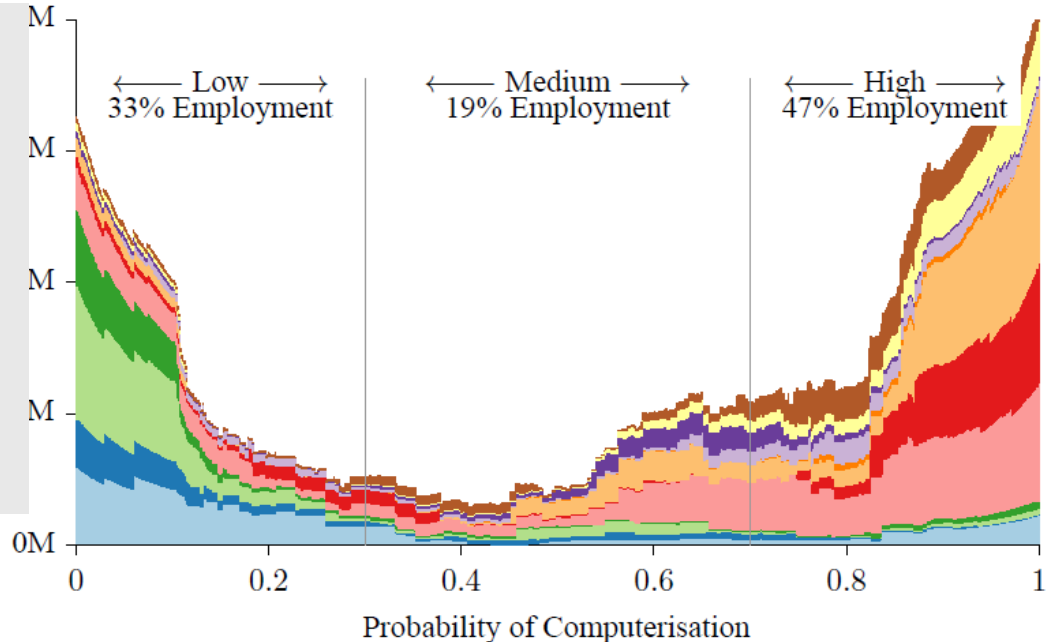
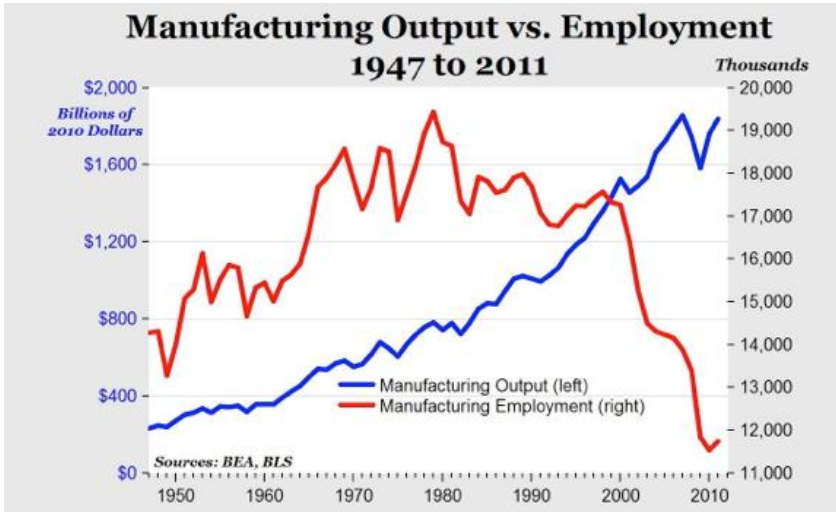
The central question of 2025 will be: What are people for in a world that does not need their labor, and where only a minority are needed to guide the 'bot-based economy?



— STOWE BOYD,
LEAD RESEARCHER AT GIGAOM RESEARCH



- Management, Business, and Financial
- Computer, Engineering, and Science
- Education, Legal, Community Service, Arts, and Media
- Healthcare Practitioners and Technical
- Service
- Sales and Related
- Office and Administrative Support
- Farming, Fishing, and Forestry
- Construction and Extraction
- Installation, Maintenance, and Repair
- Production
- Transportation and Material Moving



Economy

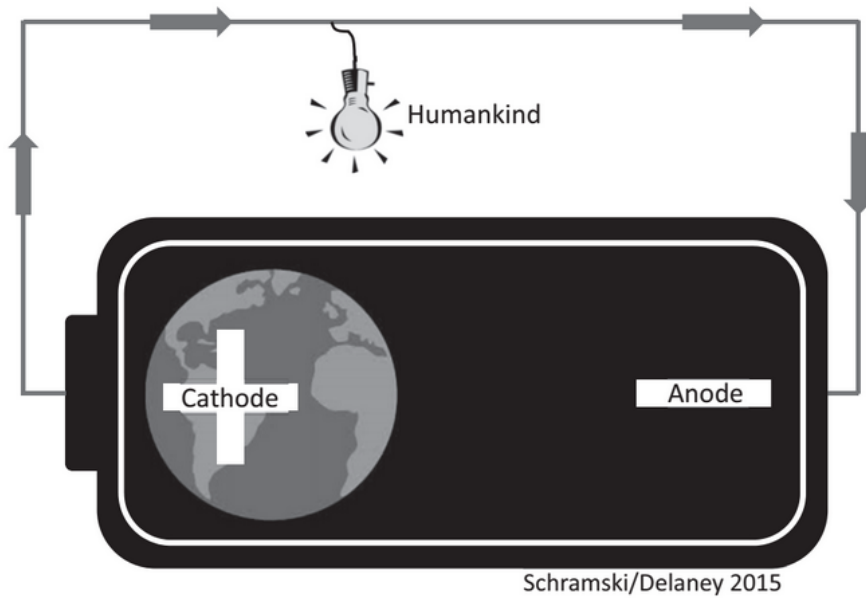


Fig. 1. Earth-space battery. The planet is a positive charge of stored organic chemical energy (cathode) in the form of biomass and fossil fuels. As this energy is dissipated by humans, it eventually radiates as heat toward the chemical equilibrium of deep space (anode). The battery is rapidly discharging without replenishment.

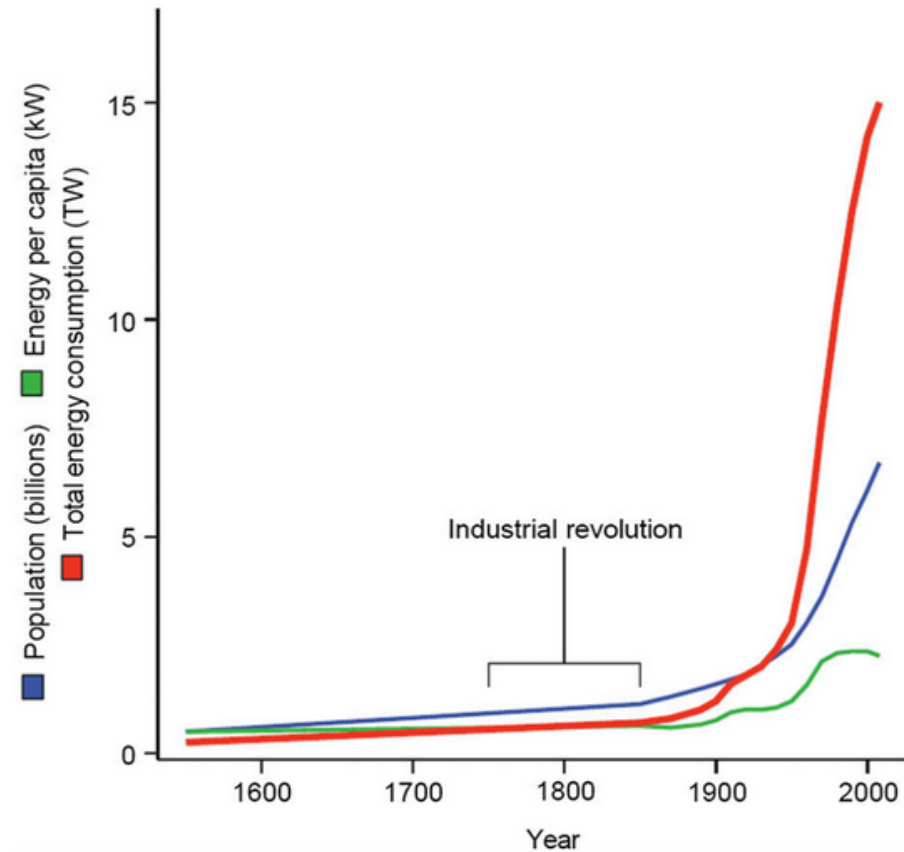
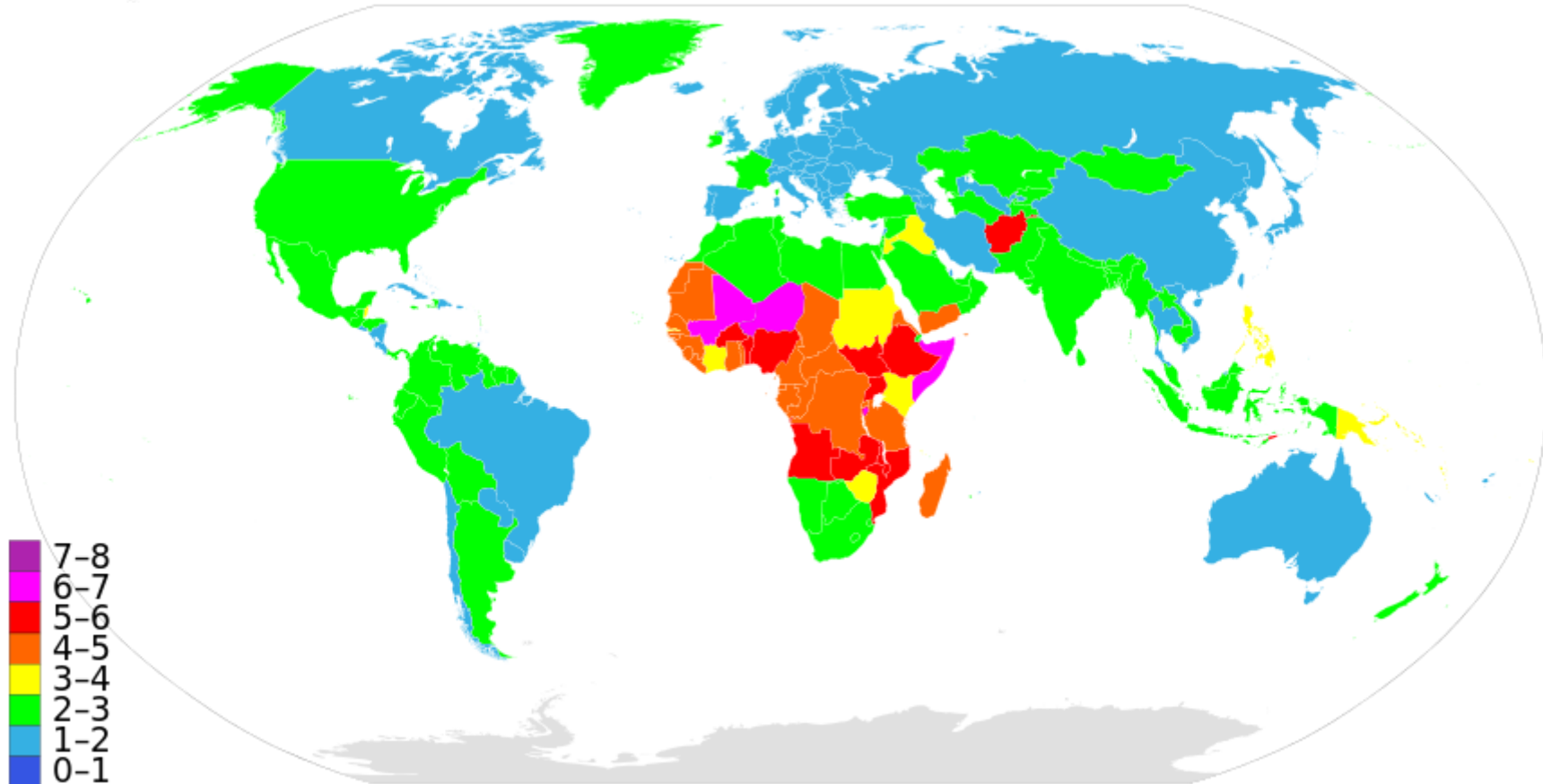
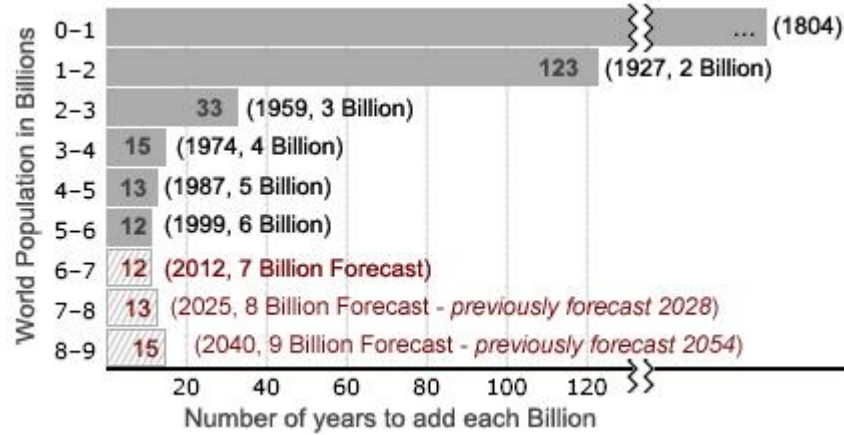


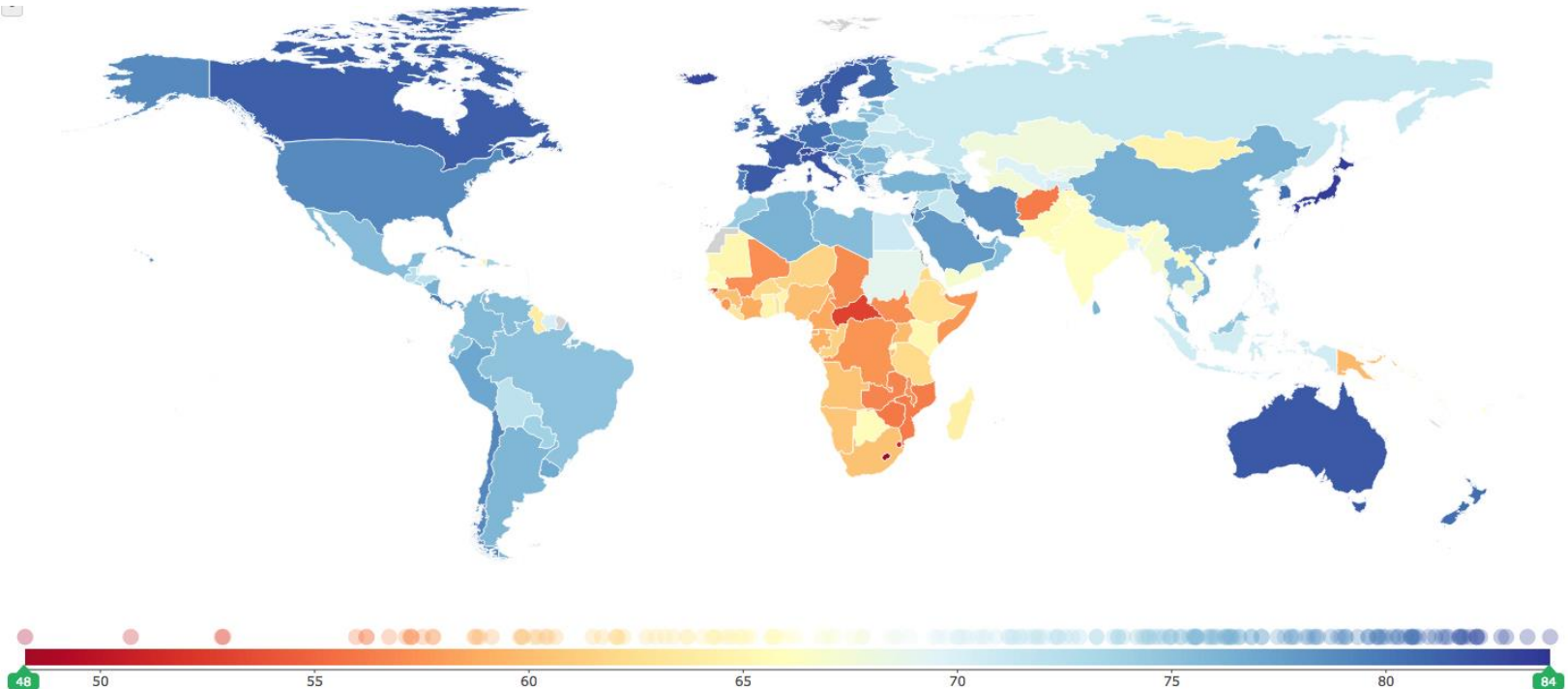
Fig. 4. History of global growth in per capita energy consumption, population, and total energy consumption. Reproduced from ref. 30, with permission from Macmillan Publishers Ltd, *Nature*.

Worldwide population



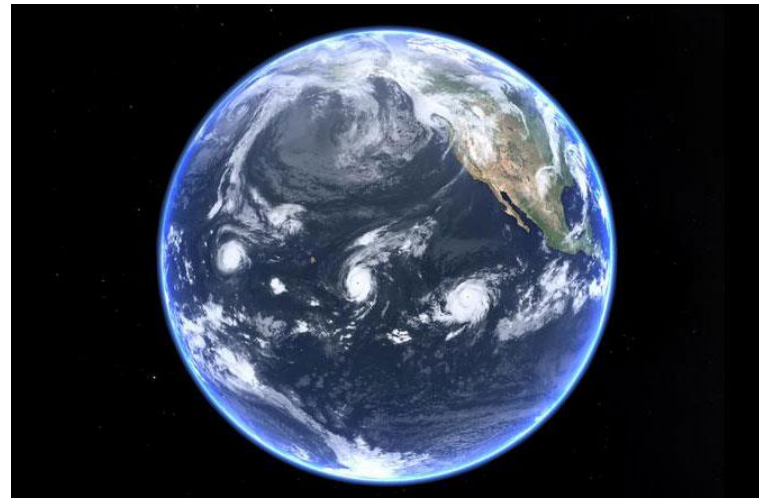
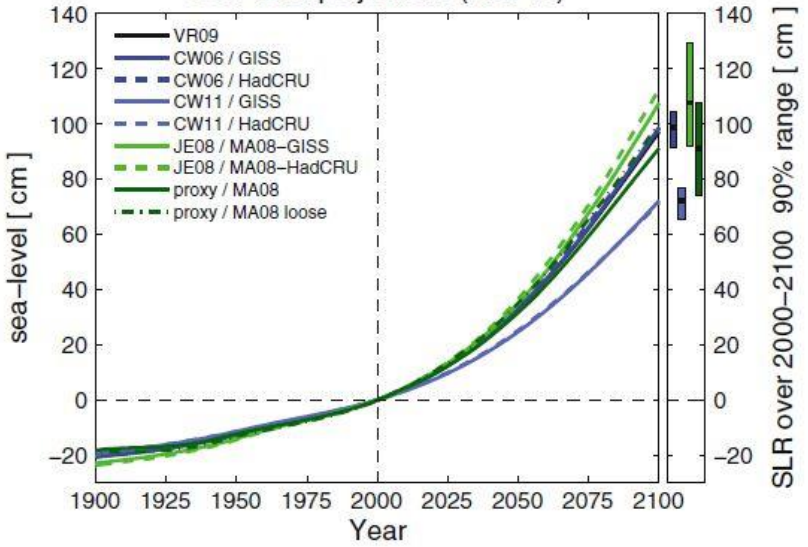
Life Expectation

- **The good news:** as for 2013, global life expectancy for people in 188 countries has risen 6.2 years since 1990 (65.3 to 71.5). **The bad news:** healthy life expectancy (HALE) at birth rose by only 5.4 years (56.9 to 62.3), due to fatal and nonfatal ailments [Life expectation](#)

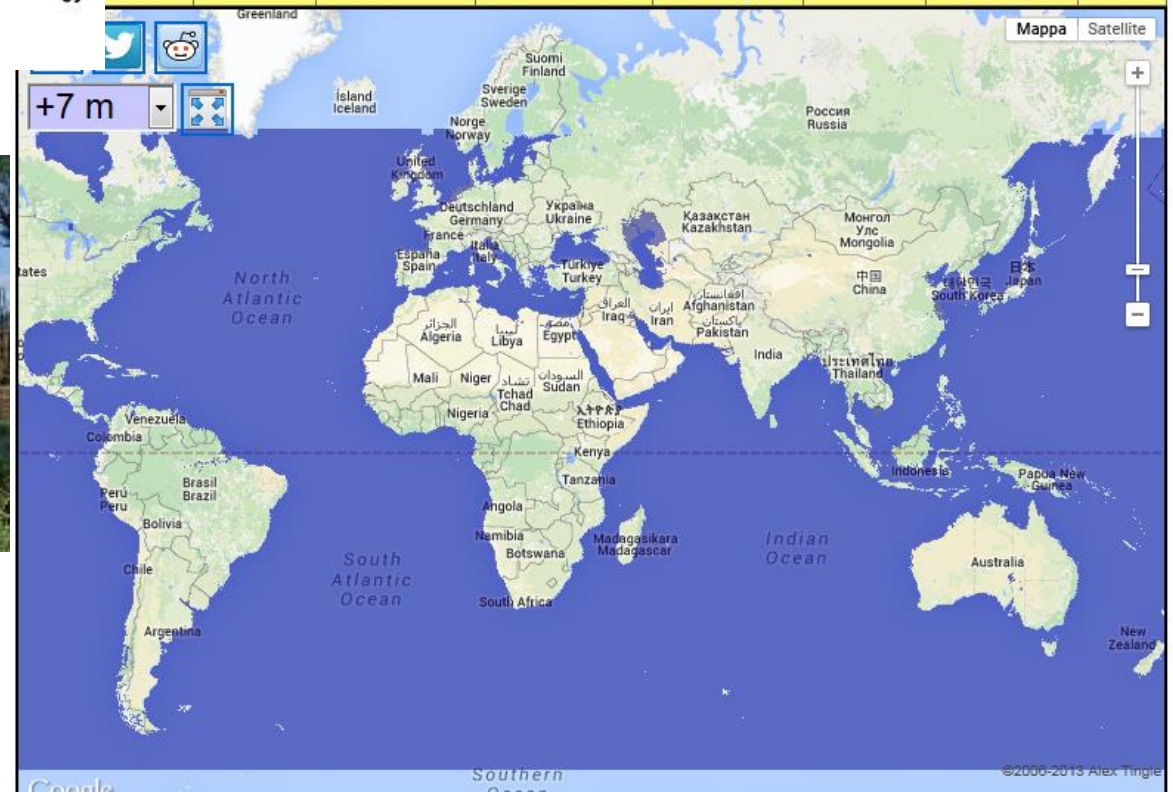


Ocean sea level Rise and climate change

Sea-level projections (RCP45)



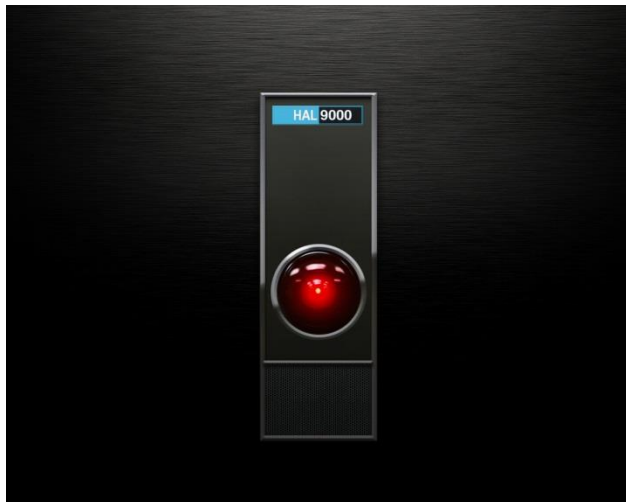
Florida New York New Orleans San Francisco Washington Nile Delta Netherlands Venice



AI support



- [ai-found-better-than-doctors-at-diagnosing--treating-patients](#)



AI and environment



[how-artificial-intelligence-can-fight-air-pollution-in-china](#)

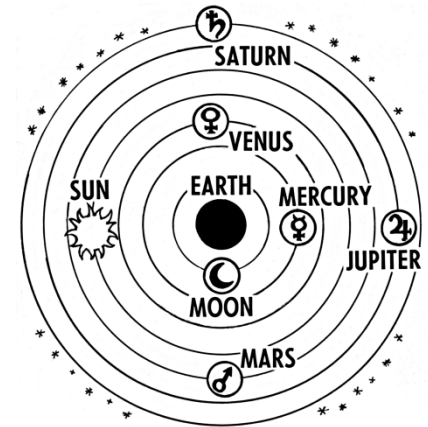


[The World in 2052](#)



Intelligence ?

- A problem solving paradigm for increasing the possibility to survive.
- Are we intelligent ?



Perhaps we need AI to survive: **Prosthesis or interspecies collaboration**

