

Innovation policies in a fact-less society

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24/11



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Lovely (also in the sense of 'of love') piece by an Italian scholar [@robertocalasso](https://twitter.com/robertocalasso):

nybooks.com/articles/2016/...



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Where to find this presentation

sensitivity analysis, sensitivity auditing, science for policy, impact assessment

Sources 1:



THE RIGHTFUL PLACE OF SCIENCE: **SCIENCE ON THE VERGE**

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The Rightful Place of Science: Science on the Verge

Paperback – 20 Feb 2016

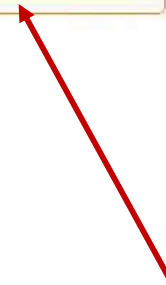
by [Andrea Saltelli](#) (Author), [Alice Benessia](#) (Author), & 7 more

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https://www.amazon.co.uk/Rightful-Place-Science-Verge-ebook/dp/B01CJ0GLK6/ref=sr_1_1?ie=UTF8&qid=1473933311&sr=8-1&keywords=saltelli

<http://www.andreasaltelli.eu/science-on-the-verge>

Science in crisis: from the sugar scam to Brexit, our faith in experts is fading

September 27, 2016 4:43pm AEST



What if even she is wrong?



On TV series over series where lab-based
forensics (science) adjudicates cases

Forensics [as well as medicine, biology,
economics, health, nutrition ...] has
produced serious misdiagnoses



National Academy of Sciences (NAS) report “Strengthening Forensic Science in the
United States: A Path Forward”,
<https://www.ncjrs.gov/pdffiles1/nij/grants/228091.pdf>

A reflection on ‘Politics in the era of emerging technologies’
should factor in the crisis in science for policy ...

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Sugar Industry and Coronary Heart Disease Research

A Historical Analysis of Internal Industry Documents FREE

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Cristin E. Kearns, DDS, MBA^{1,2}; Laura A. Schmidt, PhD, MSW, MPH^{1,3,4}; Stanton A. Glantz, PhD^{1,5,6,7,8}

[+] Author Affiliations

JAMA Intern Med. Published online September 12, 2016. doi:10.1001/jamainternmed.2016.5394

Text Size: A A A

See also <https://www.theguardian.com/society/2016/apr/07/the-sugar-conspiracy-robert-lustig-john-yudkin>, and the story of US President Dwight Eisenhower heart attack,...

“our findings suggest the industry sponsored a research program in the 1960s and 1970s that successfully cast doubt about the hazards of sucrose while promoting fat as the dietary culprit in CHD [coronary heart disease]”

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<http://archinte.jamanetwork.com/article.aspx?articleid=2548255>

... and factor in as well failure in science's own quality control apparatus



Unreliable research

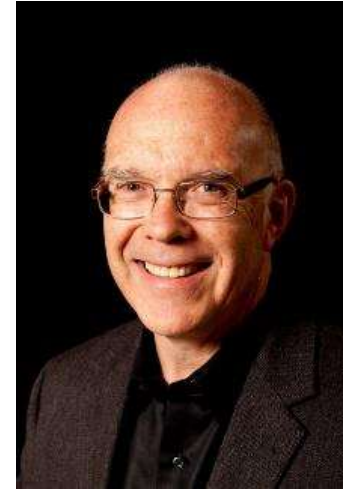
Trouble at the lab

Scientists like to think of science as self-correcting. To an alarming degree, it is not

Oct 19th 2013 | From the print edition



- Generation of new data/ publications at an unprecedented rate.
- Compelling evidence that the majority of these discoveries will not stand the test of time.
- Causes: failure to adhere to good scientific practice & the desperation to publish or perish.
- ...



C. Glenn Begley



John P. A. Ioannides

Begley, C. G., and Ioannidis, J. P., 2015, Reproducibility in Science. Improving the Standard for Basic and Preclinical Research, *Circulation Research*, 116, 116-126, doi: 10.1161/CIRCRESAHA.114.303819

Institutions charged with science advice choose to ignore the severity of the crisis

OECD publishing

Please cite this paper as:

OECD (2015), "Scientific Advice for Policy Making: The Role and Responsibility of Expert Bodies and Individual Scientists", *OECD Science, Technology and Industry Policy Papers*, No. 21, OECD Publishing, Paris.
<http://dx.doi.org/10.1787/5js3311jcpwb-en>

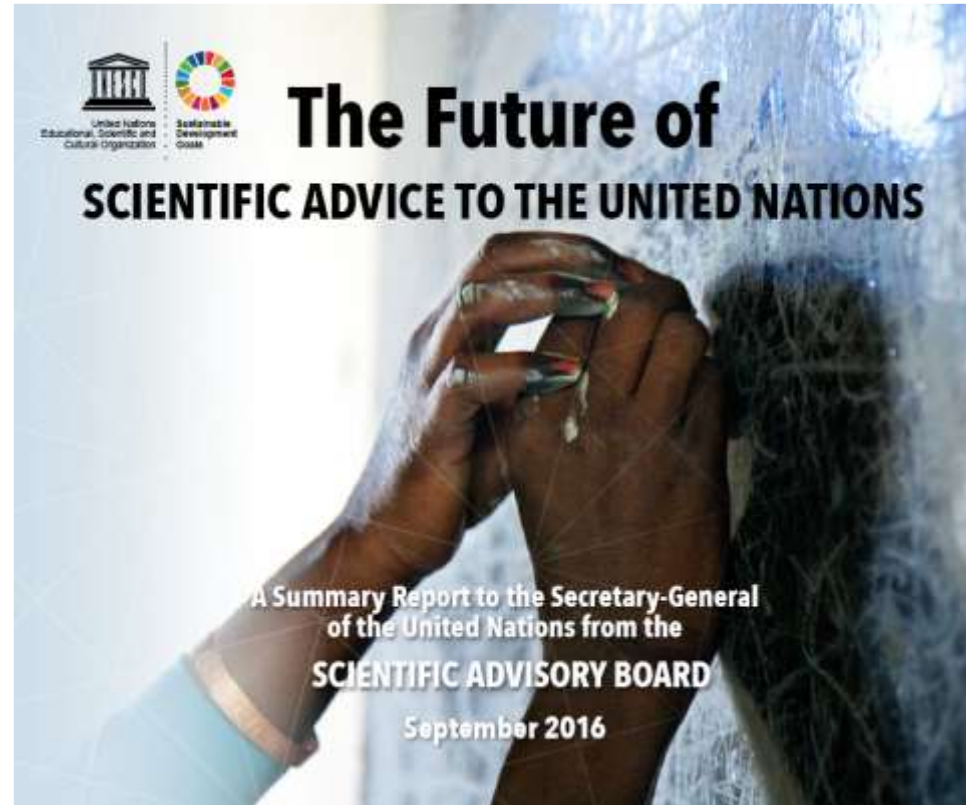
OECD Science, Technology and Industry
Policy Papers No. 21

Scientific Advice for Policy Making

THE ROLE AND RESPONSIBILITY OF EXPERT
BODIES AND INDIVIDUAL SCIENTISTS

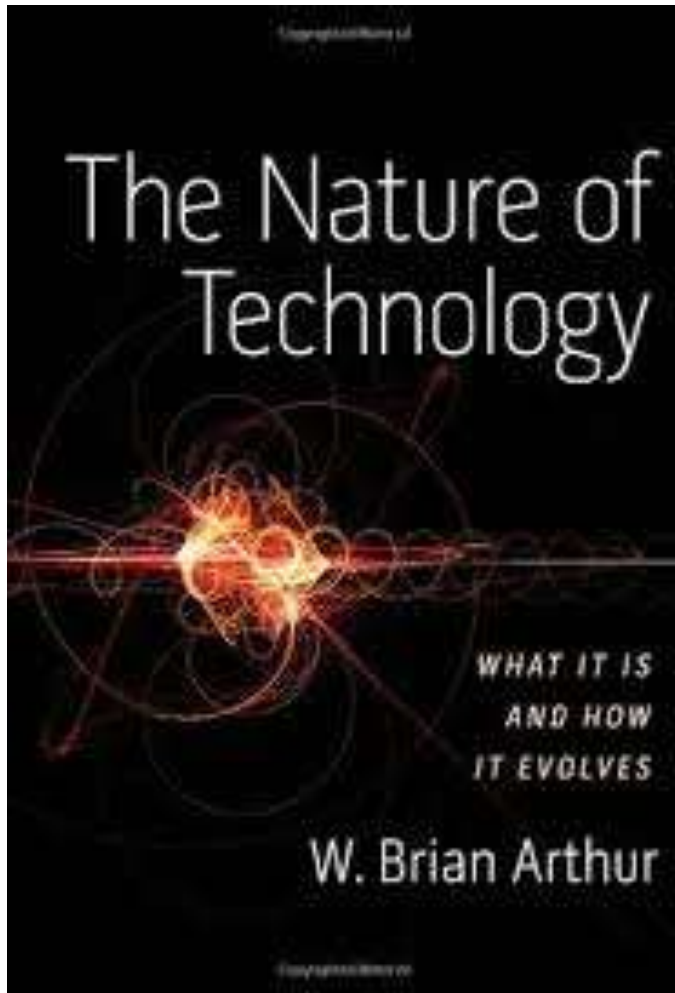
OECD

2015



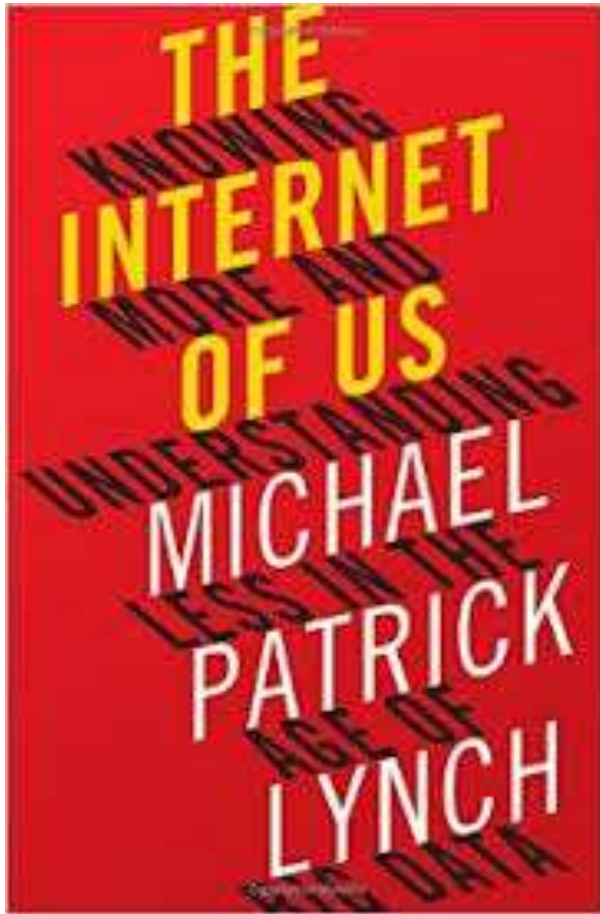
2016

➔ How will the ever increasing pace of innovation be governed?



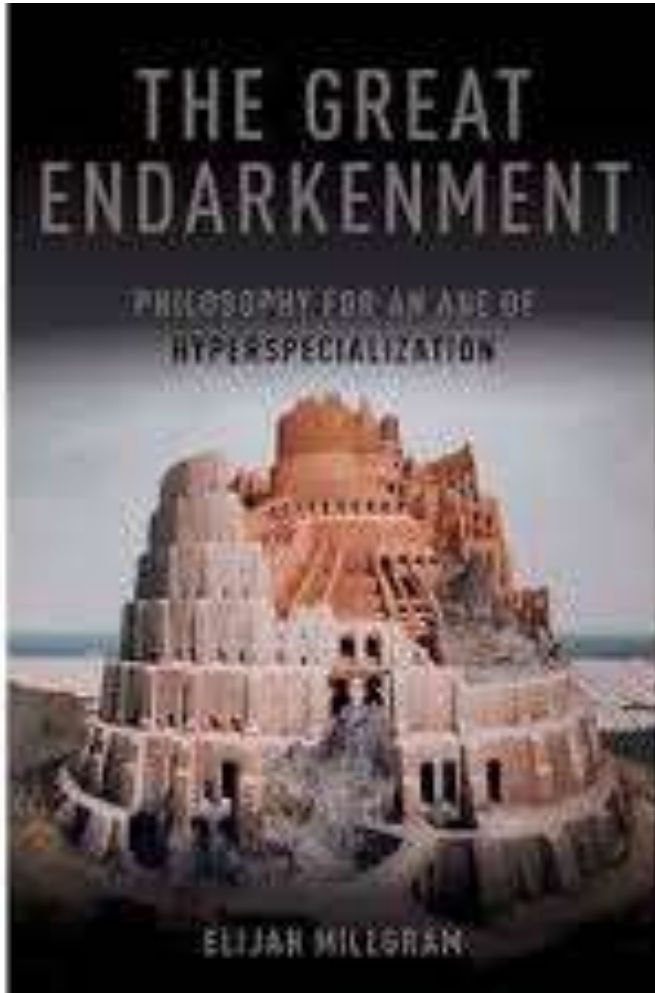
If “Technology evolves much as a coral reef builds itself from activities of small organisms - it creates itself from itself”

➔ How will the ever increasing pace of innovation be governed?



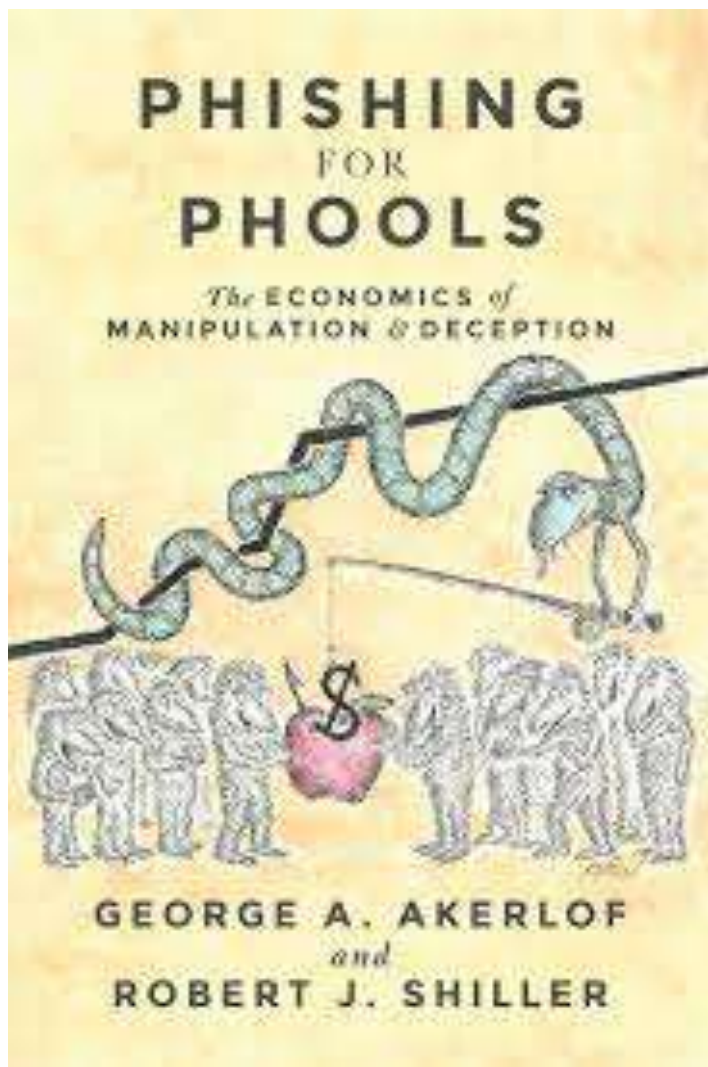
If technology redefines the meaning of ‘knowing’ while impairing our capacity to reason

➔ How will the ever increasing pace of innovation be governed?



If science is bringing about the end of Enlightenment by creating a world impossible to make sense of.

➔ How will the ever increasing pace of innovation be governed?



If progresses in the use of information technologies, statistics, psephology in a situation of globalization and deregulation has voided democracy of its meaning

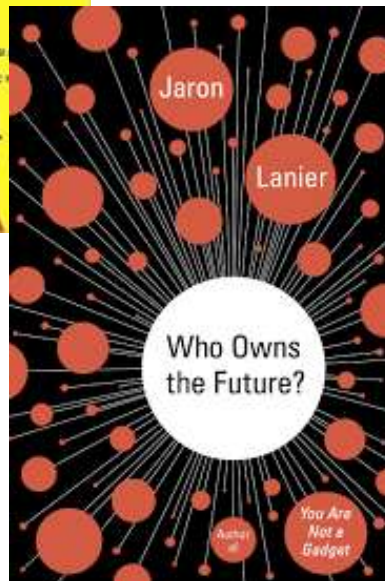
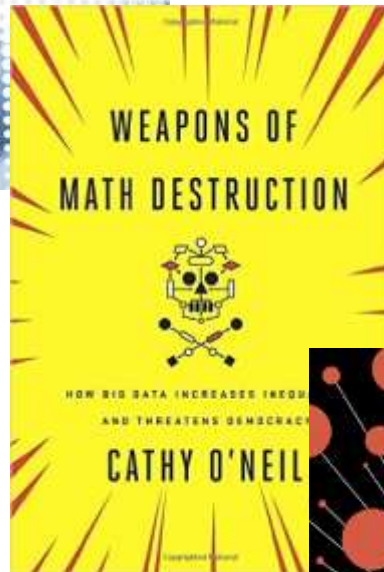
How about innovation & jobs & inequality & security?

Irreversible loss of jobs?

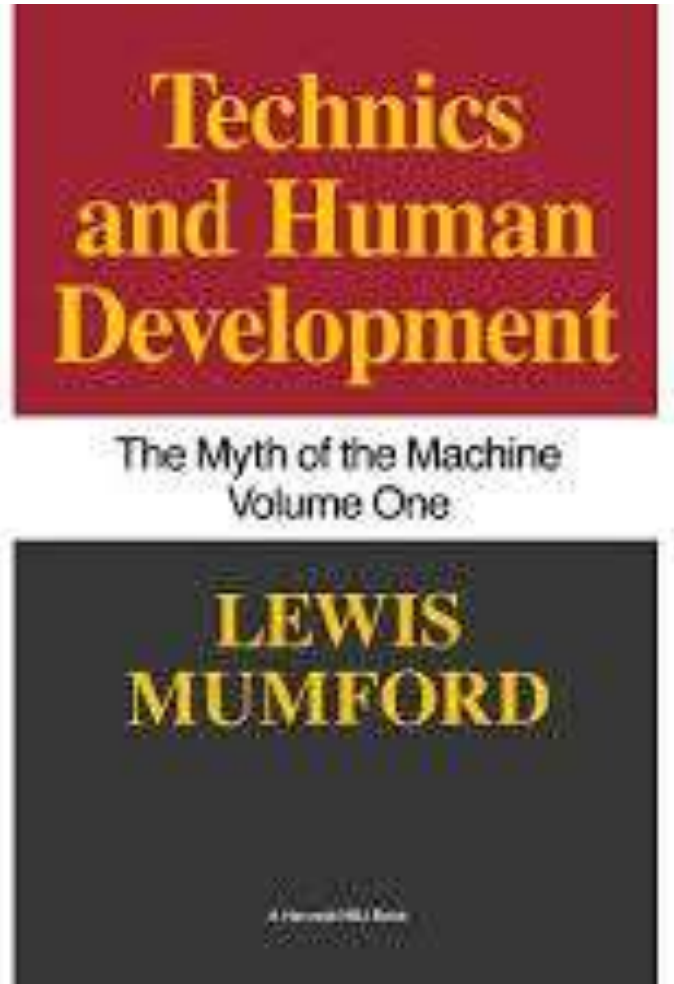
Technology hollowing out of the middle class?

Weaponization of big data?

(sentencing, recruiting, grading...)



Is innovation itself the latest megamachine?



Lewis Mumford
1895-1990

Techno-science is at the heart of contemporary narratives to:

- innovate our way out of the economic crisis;
- overcome our planetary boundaries;
- achieve a dematerialised economy;
- improve the fabric of nature;
- allow universal well-being ...

The screenshot shows the top section of the European Commission's Innovation Union website. At the top right, there is a navigation bar with links: Sitemap | Legal notice | Cookies | Contact | Search | English (en). Below this is the Innovation Union header, featuring the European Commission logo and the text "INNOVATION UNION A Europe 2020 Initiative". A secondary navigation bar lists: Home | About IU | What we do | Prizes | Events | Documents | Press | Funding. The main content area is a large banner for the "EU PRIZE for WOMEN INNOVATORS". On the left of the banner is a grid of small portraits of women. The text in the banner reads: "EU PRIZE for WOMEN INNOVATORS" in large, bold letters, followed by "FOR THE MOST INNOVATIVE WOMEN ENTREPRENEURS". On the right side of the banner is an orange circular graphic that lists the prizes: "4 PRIZES including NEW RISING INNOVATOR Prize" with amounts "€100 000", "€50 000", "€30 000", and "€20 000". At the bottom of the page, a dark blue footer contains the text: "Innovation Union is the European Union strategy to create an innovation-friendly environment that makes it easier for great ideas to be turned into products and services that will bring our economy growth and jobs."

European Commission

INNOVATION UNION
A Europe 2020 Initiative

European Commission > Innovation Union

Home About IU What we do Prizes Events Documents Press Funding

EU PRIZE for
WOMEN INNOVATORS
FOR THE MOST INNOVATIVE
WOMEN ENTREPRENEURS

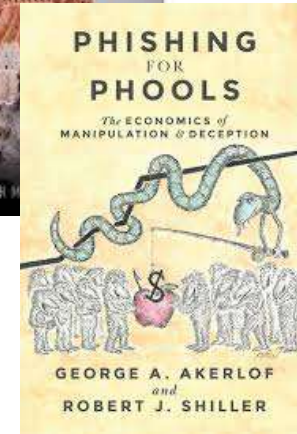
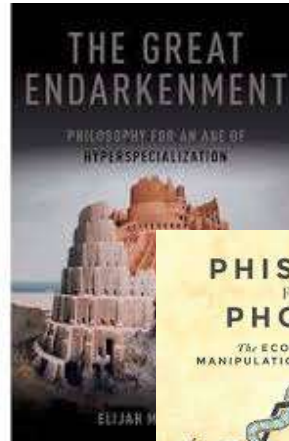
4 PRIZES
including NEW
RISING INNOVATOR
Prize
€100 000
€50 000
€30 000
€20 000

Innovation Union is the European Union strategy to create an innovation-friendly environment that makes it easier for great ideas to be turned into products and services that will bring our economy growth and jobs.

... How will this play out once trust in experts evaporates?



“Michael Gove, a Conservative Outer once close to Prime Minister David Cameron, said: “People in this country have had enough of experts.” Source: P. Stephens, Financial Times, June 23 2016, <https://www.ft.com/content/bfb5f3d4-379d-11e6-a780-b48ed7b6126f>
See also <https://www.ft.com/content/82a1a548-3b93-11e6-8716-a4a71e8140b0#axzz4Hzb9D6Ql>



Science in crisis, slothful institutions, dystopian innovation, dwindling trust in expertise ... A master narrative is coming to its end

Jean-François Lyotard's metanarrative (métarécit):

Knowledge (science) as
Bildung and emancipation,
providing legitimacy to the
exercise of power.



Jean-François Lyotard
1924-1998

On scientific knowledge and power see also: Shapin, S., Schaffer, S., 1985, Leviathan and the Air-Pump: Hobbes, Boyle, and the Experimental Life, Princeton, and Ravetz, Jerome R. (1990). The merger of knowledge with power: essays in critical science. London [England]: Mansell. ISBN 0-7201-2021-7.

Awaiting the next grand narrative

- Science will not heal itself – powerful stakes and lock-ins
- Difficult to predict the future of innovation: better to build it
- Extended peer communities can help both science and citizens



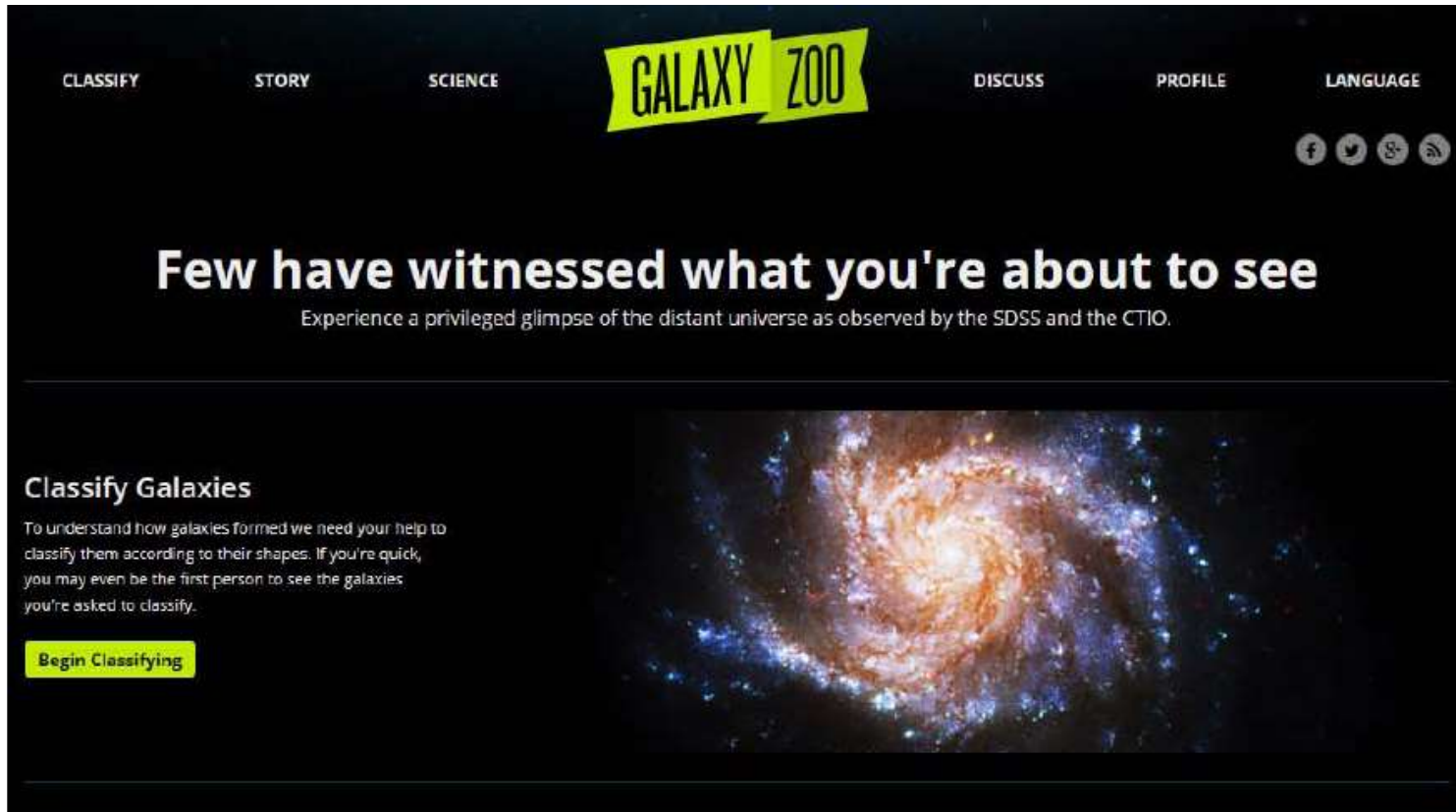
Jerry Ravetz &
Silvio Funtowicz
~ 1988, Sheffield.

Funtowicz, S. O. & Ravetz, J. R. 1993. Science for the post-normal age. *Futures*, 25(7), 739–755.

http://www.uu.nl/wetfilos/wetfil10/sprekers/Funtowicz_Ravetz_Futures_1993.pdf

Living innovation while awaiting the next grand narrative

- Activist scientists and citizen scientists - not in the sense of galaxies counters helping scientists but ...



<https://www.galaxyzoo.org/>

- ... In the sense of actively engaging with problems, occasionally exposing fraudulent institutions



Jeffrey Beall

Lois Gibbs

Timothy Gowers

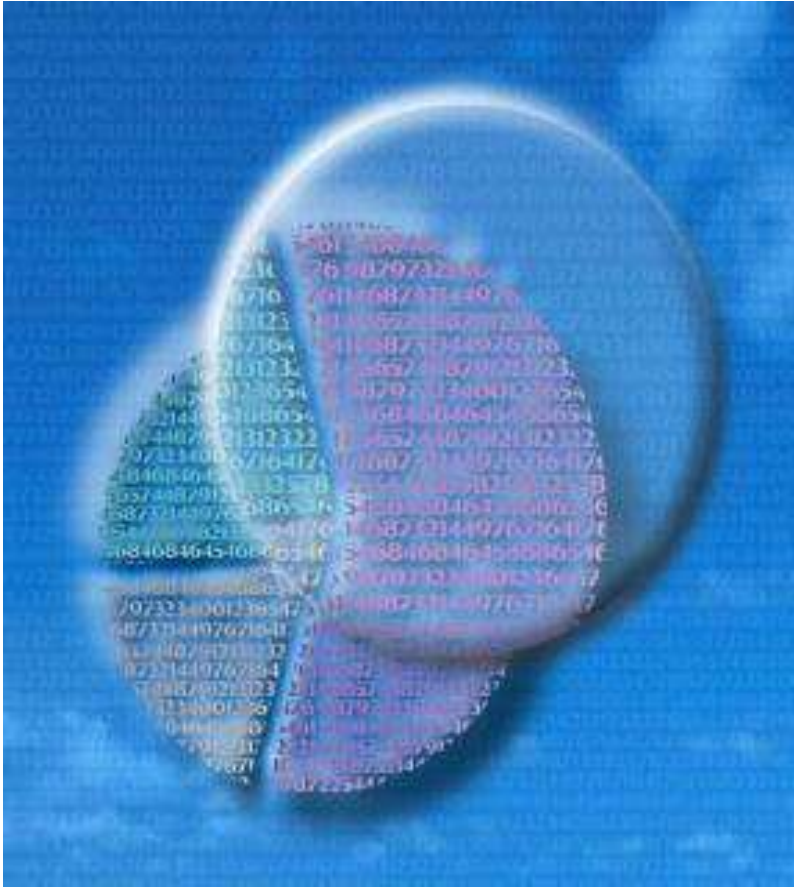
Marc Edwards

<http://scholarlyoa.com/2015/01/02/bealls-list-of-predatory-publishers-2015/#more-4719>
<https://www.bu.edu/lovecanal/canal/> <http://journals.plos.org/plosone/article?id=10.1371%2Fjournal.pone.0127502>
https://en.wikipedia.org/wiki/Flint_water_crisis; <http://flintwaterstudy.org/>;
<http://www.nytimes.com/2016/08/21/magazine/flints-water-crisis-and-the-troublemaker-scientist.html>

Debunking myths / idols

- The Cult of Science, science as metaphysics, science's hermeneutic imperialism,...;
- Positivistic, techno-optimistic paradigms;
- The deficit model; speaking for 'science'; science's neutrality, ...





END

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From the conference's booklet:

http://www.uib.no/sites/w3.uib.no/files/attachments/s.net_bookofabstractsonline.pdf

SCIENCE POLICY

Chair: Silvio Funtowicz

Andrea Saltelli

Innovation policies in a fact-less society

A reflection on 'Politics in the era of emerging technologies' should factor in an unprecedented crisis in the governance of science and in science quality control mechanisms. As this crisis concerns all aspects of scientific life, from experiment reproducibility to the peer review system, from the use and abuse of metrics to the insurgence of ever more egregious cases of malpractice and misconduct, the legitimate question arises of how the ever increasing pace of innovation will be governed, especially when institutions charged with science advice choose to ignore the severity of the crisis. The doubt arises whether the conditions are being created for the insurgence of a perfect storm vindicating the direst prediction about the 'megamachine' made by the ecologists of the seventies – today resurfacing as a perception of innovation as an autonomous and self-organizing entity.

A recently published book[1] explores some of these scenarios and attempts to map the different diagnoses and etiologies of the crisis onto a possible sets of remedies from both within science (institutions and individual scientists) and from without, from the emerging ecosystem of 'amateur-citizen-scientists' (counting galaxies) and 'activist-citizen-scientists' (Love Canal) up to include the emergence of a 'scientist-citizen' movement within established science itself.

[1] Benessia, A., Funtowicz, S., Giampietro, M., Guimarães Pereira, A., Ravetz, J., Saltelli, A., Strand, R., van der Sluijs, J. (eds.), 2015, Science on the verge, Published by The Consortium for Science, Policy and Outcomes at Arizona State University.