

Knowledge challenges at the science-policy interface

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Autònoma de Barcelona (UAB)

**European Environmental Agency,
Copenhagen, Management Board Seminar,
December 6, 2016**

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

The problem

'Post-truth' named word of the year by Oxford Dictionaries

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theguardian

Alison Flood

Tuesday 15 November 2016 20.00 GMT



“The British people are sick of experts”, Michael Gove



“We now live in a post-factual democracy”, Nicholas Barrett



Is hence the fault with politicians?



“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>



“... stripping empiricism out of American regulatory systems ...”

How Trump Could Wage a War on Scientific Expertise

The mechanics of stripping empiricism out of America's regulatory systems

ED YONG

DEC 2, 2016

SCIENCE



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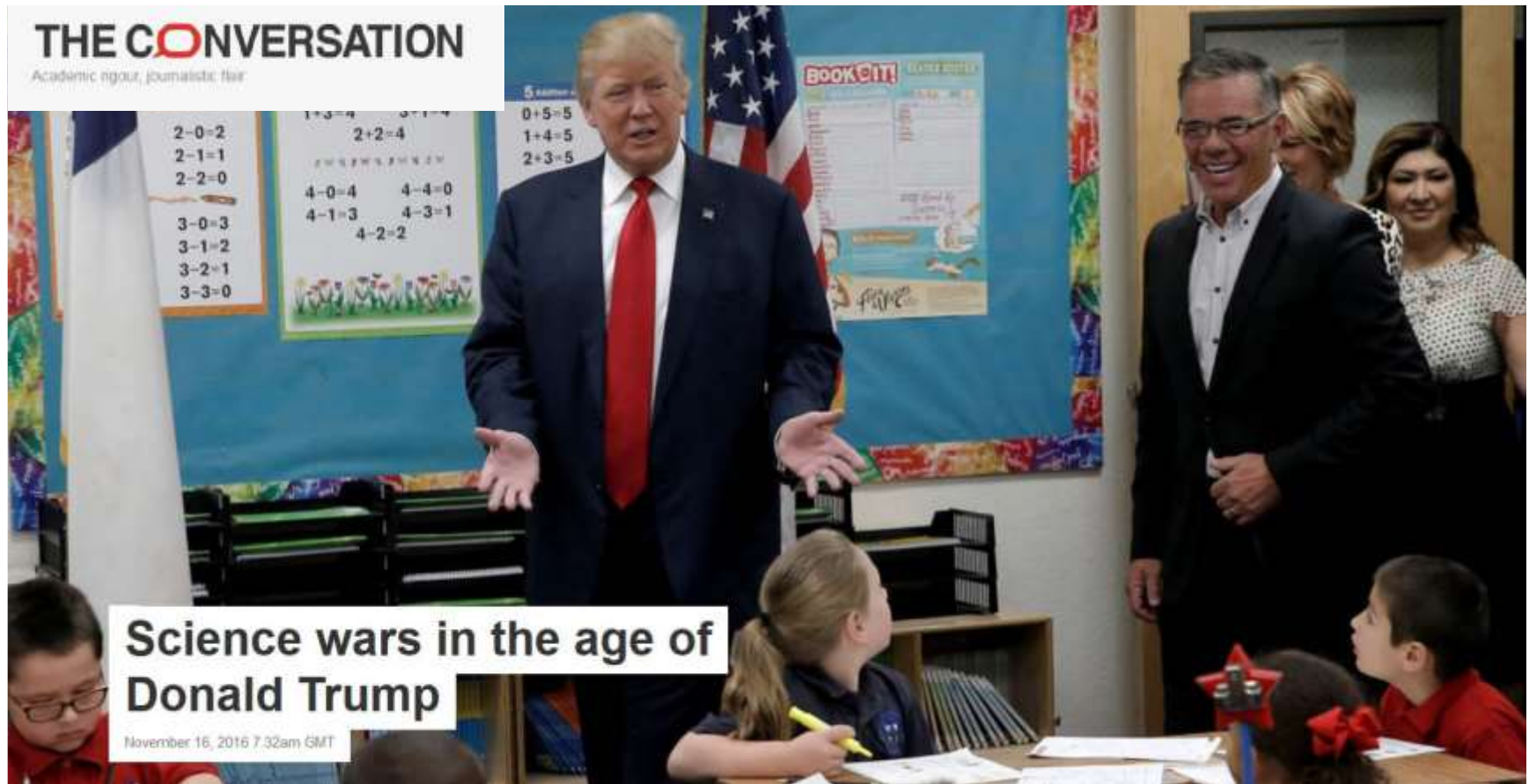
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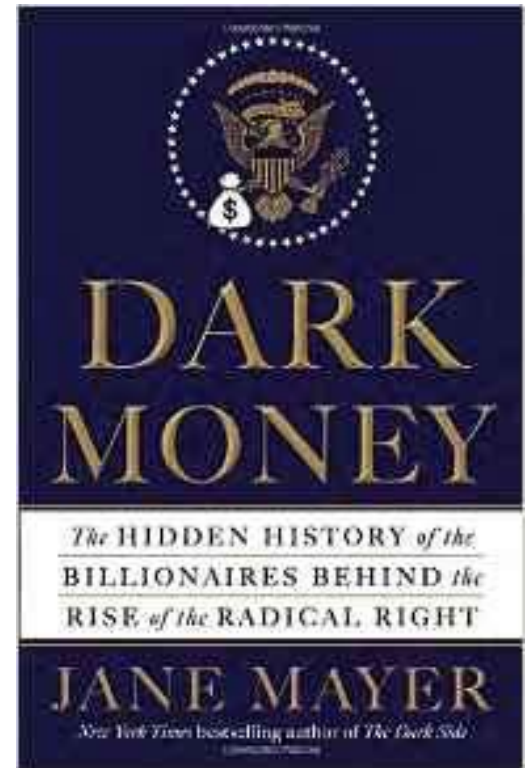
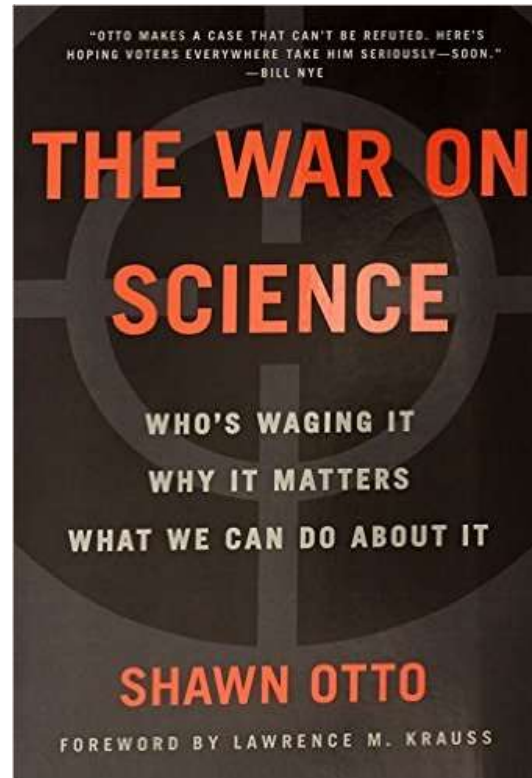
<http://www.theatlantic.com/science/archive/2016/12/how-trump-could-wage-a-war-on-scientific-expertise/509378/>

But ...

BREXIT and Trump's election unleashed a debate on post-truth, science wars and the end of expertise, which may distract from deeper issues



Andrea Saltelli and Silvio Funtowicz, Science wars in the age of Trump, November 16, 2016
<https://theconversation.com/science-wars-in-the-age-of-donald-trump-67594>



Right: “You politicize science”

Left: “You are anti science”

The risk it to transform the crisis of science into an American party-political affair: the intellectual left against the ignorant right. See *The Climate Wars and the damage to science*, Matt Ridley, The Global Warming Policy Foundation, 2015, <http://www.thegwpf.com/content/uploads/2015/11/climate-wars.pdf>; and *The War On Science*, by Shawn Otto, <https://milkweed.org/book/the-war-on-science>. See some excerpts from the *Dark Money* book here: http://www.andreasaltelli.eu/file/repository/Chapter_8sr.pdf

A Plan to Defend against the War on Science

The challenge of creating a public able to parse evidence-free “facts” rests with the press, educators and other thought leaders

By Shawn Otto on October 9, 2016

**SCIENTIFIC
AMERICAN**

The fault of
philosophers?



Shawn Otto

“... a generation of university academics who have taught a corrosive brand of postmodernist identity politics that argues truth is relative, and that science is a “meta-narrative”...”

**SCIENTIFIC
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“By undermining science’s claim of objectivity, these postmodernists have unwittingly laid the philosophical foundation for the new rise of authoritarianism. Because if there is no objective evidence that has ultimate credibility, how is one to settle competing claims of truth, such as those made by Trump?”

**SCIENTIFIC
AMERICAN**

The meta-
narrative is
dead!

Crooked
Hilary!



How about a deeper crisis in the role of science and expertise?
Wars as [instrumental?] distractions from the crisis of science
and of its role in modernity.



The Causes

Is there a crisis?



Sources 1:



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

CONTRIBUTORS

Alice Benessia
Silvio Funtowicz
Mario Giampietro
Ângela Guimarães Pereira
Jerome R. Ravetz
Andrea Saltelli
Roger Strand
Jeroen P. van der Sluijs



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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A crisis looms over the scientific enterprise. Not a day passes without news of retractions, failed replications, fraudulent peer reviews, or misinformed science-based policies.

Sources 2:

THE CONVERSATION

Academic rigour, journalistic flair

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Environment + Energy

Health + Medicine

Politics + Society

Science + Technology

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

September 27, 2016 4:43pm AEST



<https://theconversation.com/science-in-crisis-from-the-sugar-scam-to-brexit-our-faith-in-experts-is-fading-65016>

The
Economist

OCTOBER 19TH - 26TH 2013

economist.com

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The meaning of Sachin Tendulkar

HOW SCIENCE GOES WRONG.

99

Einsteinium

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



22K



The crisis has ethical,
epistemological, methodological
and even metaphysical dimensions;



THE RIGHTFUL
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Identified points of friction:

- paradigm of evidence-based policy
- use of science to produce implausibly precise numbers and reassuring techno-scientific imaginaries
- use of science to ‘compel’ decision by the sheer strength of ‘facts’



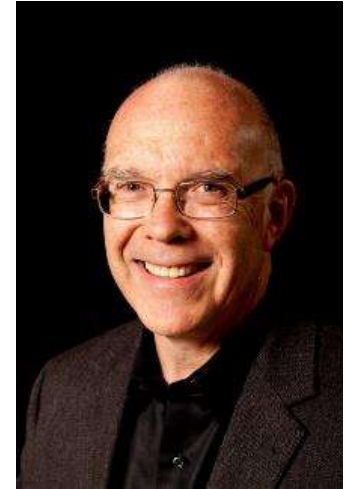
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- Generation of new data/ publications at an unprecedented rate
- Compelling evidence that the majority of these discoveries will not stand the test of time.



C. Glenn Begley



John P. A. Ioannides

“[scientific] diagnoses in fields as disparate as forensics, preclinical and clinical medicine, chemistry, psychology and economics”



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Special Communication | September 12, 2016

Sugar Industry and Coronary Heart Disease Research

A Historical Analysis of Internal Industry Documents

FREE

ONLINE FIRST

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

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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]”

The screenshot shows the JAMA Internal Medicine website. At the top is a dark navigation bar with 'The JAMA Network' and links to Journals, Collections, Store, Physician Jobs, and About Mobile. Below this is the 'JAMA Internal Medicine' header. A secondary navigation bar includes links to Home, Current Issue, All Issues, Online First, Collections, CME, and Multimedia. The main content area is titled 'Online First >' and 'Special Communication | September 12, 2016'. The article title is 'Sugar Industry and Coronary Heart Disease Research' with the subtitle 'A Historical Analysis of Internal Industry Documents'. It features social media icons for Twitter, Facebook, and Google+, and a 'FREE' badge. A grey 'ONLINE FIRST' badge is also present. The authors listed are 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}. A link for '[+] Author Affiliations' is provided. At the bottom, it states 'JAMA Intern Med. Published online September 12, 2016. doi:10.1001/jamainternmed.2016.5394' and includes a text size adjustment option.

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Special Communication | September 12, 2016

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}

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

Institutions charged with science advice choose to ignore 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/10.1787/5js331jcpwb-en>

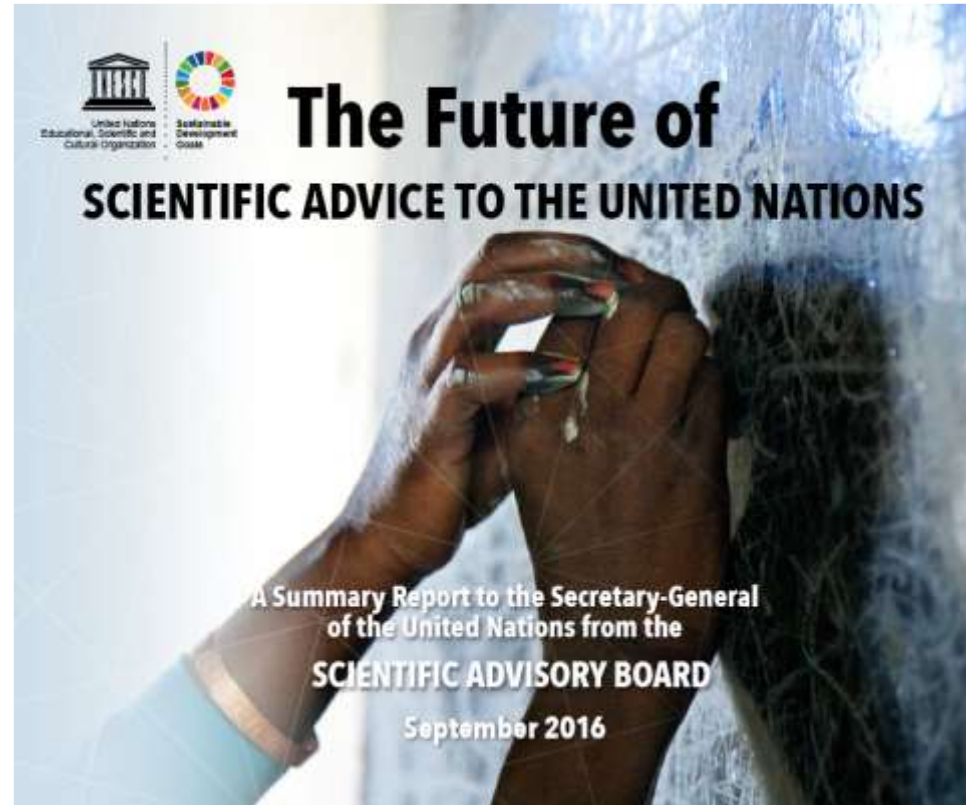
OECD Science, Technology and Industry
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Scientific Advice for Policy Making

THE ROLE AND RESPONSIBILITY OF EXPERT
BODIES AND INDIVIDUAL SCIENTISTS

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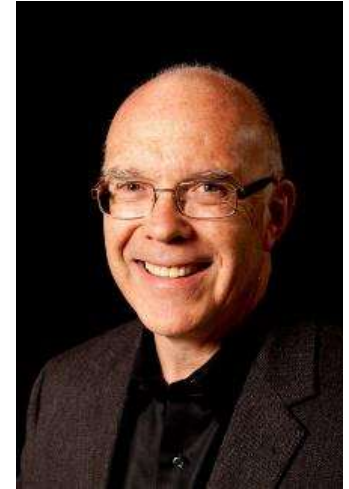
2015



2016

Causes of the crisis: failure to adhere to good scientific practice & the desperation to publish or perish.

In the book we have a different theory but ... read the book!



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

Science/knowledge degenerates when it becomes a commodity for Ravetz (1971), Lyotard (1979) and Mirowski (2011).

Ravetz, J., 1971, *Scientific Knowledge and its Social Problems*, Oxford University Press, p. 22.

Lyotard, J.-F. 1979. *La Condition postmoderne. Rapport sur le savoir*, Paris : Minuit, Chapter 10.

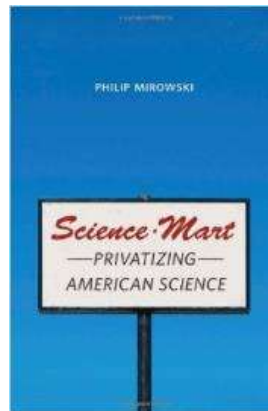
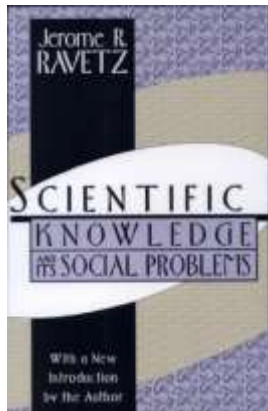
Mirowski, P. 2011. *Science-Mart: Privatizing American Science*, Harvard University Press.



Jerome R.
Ravetz



Jean-François
Lyotard



Philip
Mirowski

How about science's own
responsibilities?



The elephant in the room we can't ignore

If Donald Trump were to trigger a crisis in Western democracy, scientists would need to look at their part in its downfall, says [Colin Macilwain](#).

16 March 2016



The elephant in the room we can't ignore

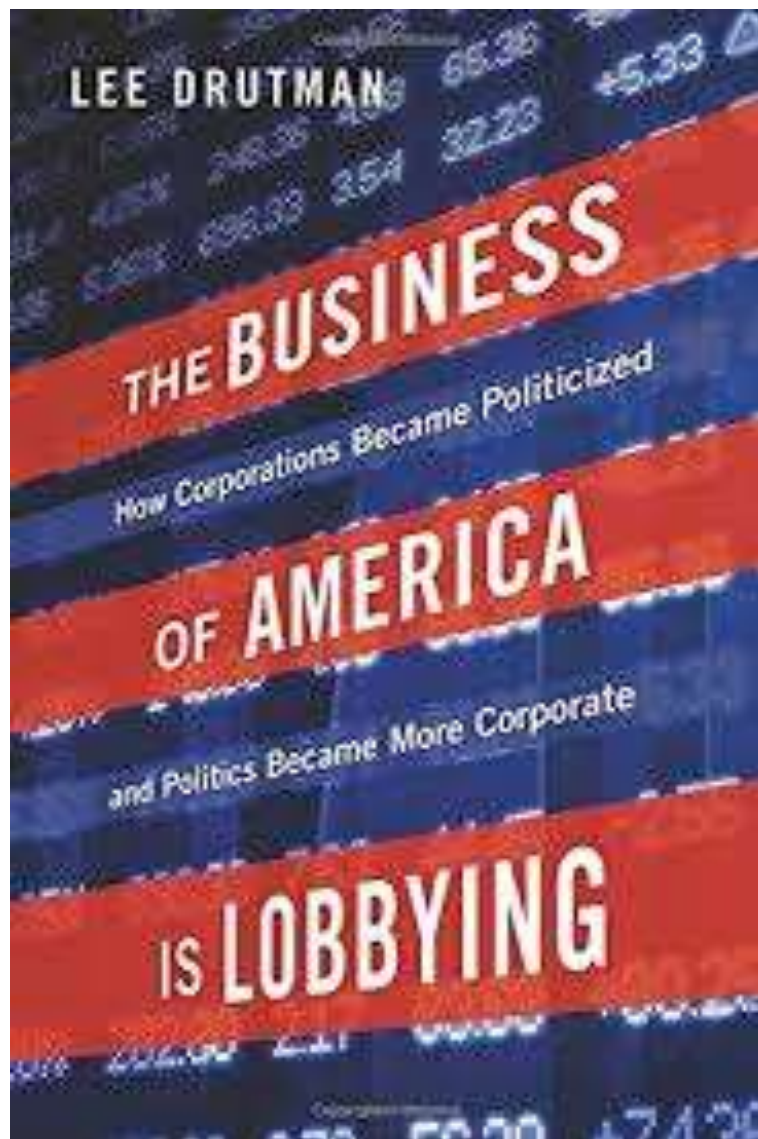
If Donald Trump were to trigger a crisis in Western democracy, scientists would need to look at their part in its downfall, says [Colin Macilwain](#).

16 March 2016

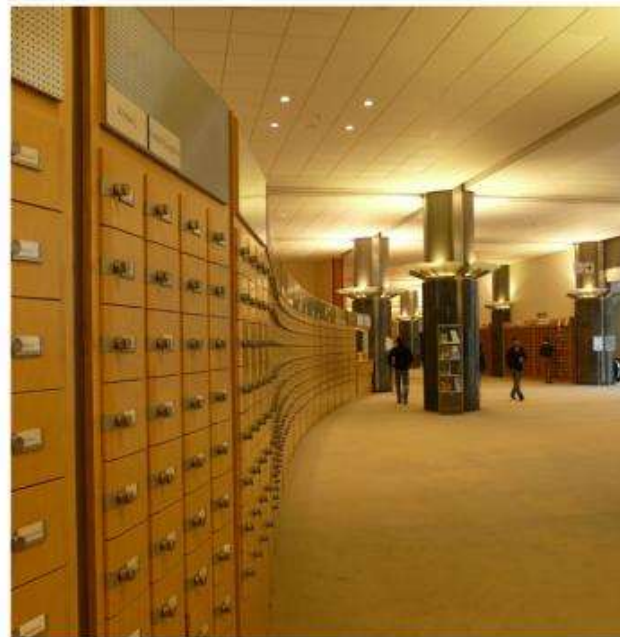
“those senior scientists who do engage with the government or public — as scientific advisers, for example — often take up highly political positions without acknowledging that they are doing so.”

“leading scientific organizations do little except chase money and reinforce the ruling nexus of politics and finance — even since the financial crisis of 2008, which discredited the free-market philosophy that underpins that nexus.”

Science, lobbies and evidence based policy



Lee Drutman



l'ordre des choses

AGONE



Sylvain Laurens

Some quick read:

<http://www.nybooks.com/articles/2016/04/07/how-lobbyists-win-in-washington/>

<http://www.contretemps.eu/lectures/lire-extrait-courtiers-capitalisme-sylvain-laurens/>



This piece includes
degenerations of the policy
& regulatory apparatus
which are in the present,
not in the future!

How Trump Could Wage a War on Scientific Expertise

The mechanics of stripping empiricism out of America's regulatory systems

ED YONG

DEC 2, 2016

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Solutions?



Bacon believed that
in order to achieve
progress “idols”
should be swept
away

"Tempore Patet Occulta Veritas"

=

'Time brings forth hidden truth',
from the front
page of the New Atlantis

Many idols in the public discourse on science:

- The Cult of Science, inclusive of:
 - science as metaphysics,
 - scientists as nobler human beings;
- Positivistic, techno-optimistic paradigms;
- Deficit model;
- The idea ‘science’ speak with one voice;
- Science’s neutrality.



New and old forms of engagement



Jeffrey Beall



Lois Gibbs



Timothy Gowers



Marc Edwards

New forms of science: can the science used to discover and dominate nature be used to fix nature's wounds?

➔ Post-normal science



Jerry Ravetz &
Silvio Funtowicz
~ 1988, Sheffield.

Funtowicz, S. O. & Ravetz, J. R. 1993. Science for the post-normal age. *Futures*, 25(7), 739–755, see http://www.uu.nl/wetfilos/wetfil10/sprekers/Funtowicz_Ravetz_Futures_1993.pdf

Ravetz, J. R. and Funtowicz, S. O., 2015. “Science, New Forms of”, in Wright, J. D., (ed.), *International Encyclopedia of the Social and Behavioral Sciences*, 2nd edition, Vol. 21: 248–254. Oxford: Elsevier, see http://www.andreasaltelli.eu/file/repository/New_Forms_2013_14_copy.pdf

Funtowicz, S. and Ravetz, J. R., 2015. “Peer Review and Quality Control”, Wright, J. D., (ed.), *International Encyclopedia of the Social and Behavioral Sciences*, 2nd edition. Oxford: Elsevier, see <http://www.andreasaltelli.eu/file/repository/PeerReviewQualityControl.pdf>

A PNS reading of the EEA and EIONET as a boundary organization, engaging in a culture of

Quality

[extended peer communities, pedigrees for evidence based policy, responsible quantification...]

Reflexivity

[Challenging existing narratives, renouncing the deficit model, ...]

Humility

[Engagement, no hubris, no science-corporate behaviour...]

See Chapter 4, Institutions on the Verge: Working at the Science Policy Interface, by Ângela Guimarães Pereira and Andrea Saltelli



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


CONTRIBUTORS

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WIRED

Hillary Clinton pauses while speaking during the Democratic National Convention (DNC) in Philadelphia on July 28, 2016.  DANIEL ACKER/BLOOMBERG/GETTY IMAGES

KATIE M. PALMER SCIENCE 07.29.16 5:59 PM

COOL CATCHPHRASE, HILLARY, BUT SCIENCE ISN'T ABOUT BELIEF

<https://www.wired.com/2016/07/cool-catchphrase-hillary-science-isnt-belief/>



The problem: Evidence in a storm?

Brexit & end of fact, post-truth word of the year, Trump and the war on scientific expertise

A populist backlash to obliterate science as pride of modernity?

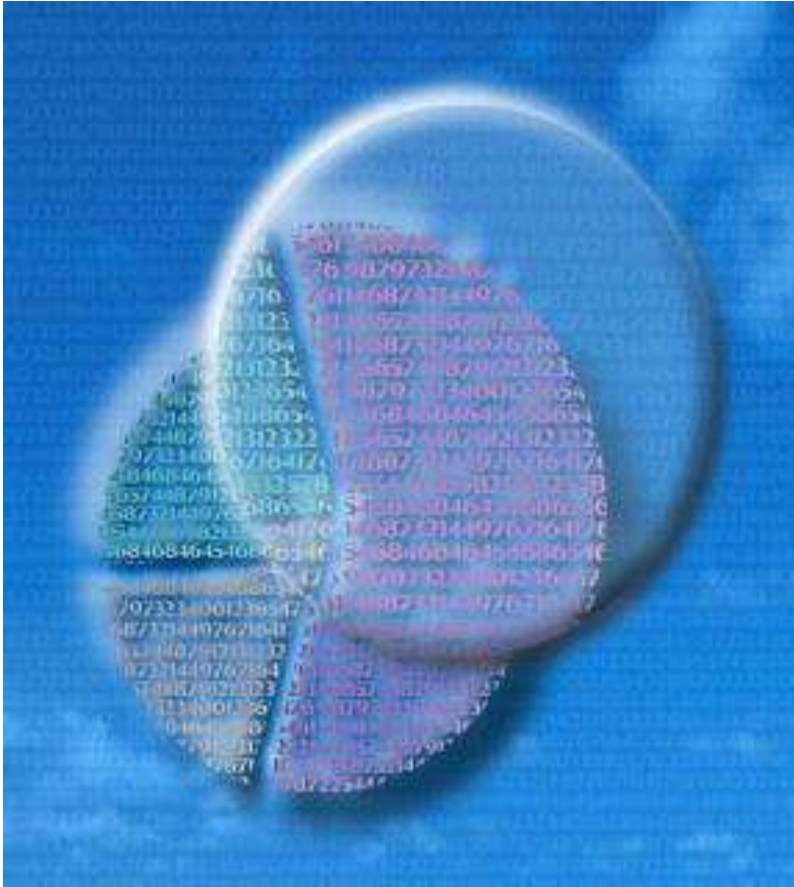
Faults of post-modernist philosophers and their relativism?



The Causes: Science's existential crisis. Dysfunctional evidence for policy. Science and lobbies, [Science and inequality, science, innovation & the megamachine for next time]

Whose responsibility for the erosion of trust?

The Solution & the Way: EEA as a boundary organization. New forms of science and new forms of quality control. [Responsible quantification for next time]



END

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