Evidence based policy

Andrea Saltelli
Centre for the Study of the Sciences and the Humanities (SVT), University of Bergen (UIB), and Open Evidence Research, Open University of Catalonia

Course NANO 310, August-September 2019

Where to find this talk: www.andreasaltelli.eu

From evidence based medicine to evidence based policy; the Cochrane collaboration (1993)

For a systematic reviews of all relevant randomised controlled trials in the field of healthcare

➔ health economics

Evidence based policy under siege; the end of expertise?

“People in this country have had enough of experts” (Michael Gove)

P. Stephens, Financial Times, June 23 2016, https://www.ft.com/content/bfb5f3d4-379d-11e6-a780-b48ed7b6126f

Andrea Saltelli, and Silvio Funtowicz, “Science cannot solve these problems alone because it helped to create them in the first place”, The Guardian, July 14, https://www.theguardian.com/science/political-science/2016/jul/14/six-leading-scientists-give-perspectives-on-uk-science-after-brexit?CMP=share_btn_tw

THE CONVERSATION

Academic rigour, journalistic flair

Arts + Culture Business + Economy Cities Education Environment + Energy FactCheck 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

Science as authoritative source of knowledge for policy & everyday life?

Major misdiagnoses in forensics, preclinical and clinical medicine, chemistry, psychology, economics…

Present zeitgeist = end of expertise? Or an older problem?

Issues tend to become “wicked” “where goal-formulation, problem-definition and equity issues meet”

Horst W. J. Rittel

Policy Sciences 4 (1973), 155–169

Dilemmas in a General Theory of Planning*

HORST W. J. RITTEL
Professor of the Science of Design, University of California, Berkeley

MELVIN M. WEBBER
Professor of City Planning, University of California, Berkeley

How do we appraise the work of experts when this feeds into policy? A complex matter for Clark and Majone

*

W. C. Clark and G. Majone, “The Critical Appraisal of Scientific Inquiries with Policy Implications,” Sci. Technol. Hum. Values, vol. 10, no. 3, pp. 6–19, Jul. 1985.

W. C. Clark and G. Majone, "The Critical Appraisal of Scientific Inquiries with Policy Implications," Sci. Technol. Hum. Values, vol. 10, no. 3, pp. 6–19, Jul. 1985.

The Critical Appraisal of Scientific Inquiries with Policy Implications

p. [6]

William C. Clark and Giandomenico Majone

"If the knowledge produced by science is not consensual, what special claim for hearing can it make in a world of multiple opinions and biases?"

➔ Need for critical evaluation, but by whom?

➔ Easy to criticize an input to policy as not scientific enough, or not participatory / legitimate enough …

The Critical Appraisal of Scientific Inquiries with Policy Implications

p. [6]

William C. Clark and Giandomenico Majone

Criticism by whom?
Which interests and role
With what criteria?

The Critical Appraisal of Scientific Inquiries with Policy Implications

p. [6]

William C. Clark and Giandomenico Majone

Who has a say?

The Critical Appraisal of Scientific Inquiries with Policy Implications

William C. Clark and Giandomenico Majone

Individual scientists performing the inquiry & their disciplinary peer groups,

the sponsor or manager of the research program,

the decision-making group for which the results are intended,

some representation of the interest groups that could be expected to have a stake in decisions

Table 1. Critical criteria.

Critical Role	Critical Mode: Input	Critical Mode: Output	Critical Mode: Process
Scientist	Resource and time constraints; available theory; institutional support; assumptions; quality of available data; state of the art.	Validation; sensitivity analyses; technical sophistication; degree of acceptance of conclusions; impact on policy debate; imitation; professional recognition.	Choice of methodology (e.g., estimation procedures); communication; implementation; promotion; degree of formalization of analytic activities within the organization.
Peer Group	Quality of data; model and/or theory used; adequacy of tools; problem formulation. Input variables well chosen? Measure of success specified in advance?	Purpose of the study. Are conclusions supported by evidence? Does model offend common sense? Robustness of conclusions; adequate coverage of issues.	Standards of scientific and professional practice; documentation; review of validation techniques; style; interdisciplinarity.
Program Manager or Sponsor	Cost; institutional support within user organization; quality of analytic team; type of financing (e.g., grant vs. contract).	Rate of use; type of use (general education, program evaluation, decisionmaking, etc.); contribution to methodology and state of the art; prestige. Can results be generalized, applied elsewhere?	Dissemination; collaboration with users. Has study been reviewed?
Policymaker	Quality of analysts; cost of study; technical tools used (hardware and software). Does problem formulation make sense?	Is output familiar and intelligible? Did study generate new ideas? Are policy indications conclusive? Are they consonant with accepted ethical standards?	Ease of use; documentation. Are analysts helping with implementation? Did they interact with agency personnel? With interest groups?
Public Interest Groups	Competence and intellectual integrity of analysts. Are value systems compatible? Problem formulation acceptable? Normative implications of technical choices (e.g., choices of data).	Nature of conclusions; equity. Is analysis used as rationalization or to postpone decision? All viewpoints taken into consideration? Value issues.	Participation; communication of data and other information; adherence to strict rules of procedure.

Scientists

The Critical Appraisal of Scientific Inquiries with Policy Implications

p. [6]

William C. Clark and Giandomenico Majone

Public Interest Groups

	Input	Critical mode Output	Process
Scientists	Available theory, assumptions, quality of the data,…	Validation, sensitivity analysis, …	Choice of methodology, communication,…
Public	Integrity of the analysts, value systems adopted, normative implications of choices,…	Equity, all viewpoints taken into consideration? Paralysis by analysis?...	Participation, adherence to procedures,…

Criteria of value, quality, effectiveness and legitimacy come into play…

Majone and Clark ➔ Such appraisals are a complex multidimensional affair

Abandon hopes of magical integrations

The Critical Appraisal of Scientific Inquiries with Policy Implications

p. [6]

William C. Clark and Giandomenico Majone

(society)

Practical problem

translate

interpret

Technical problem

(science)

Courtesy of Jeroen van der Sluijs

Drawn after Ravetz, J., 1971, Scientific Knowledge and its Social Problems, Oxford University Press.

Evidence based policy versus policy based evidence

PETRUCHIO: I say it is the moon.

KATHERINE: I know it is the moon.

PETRUCHIO: Nay, then you lie. It is the blessèd sun.

KATHERINE: Then God be blessed, it is the blessèd sun.

But sun it is not, when you say it is not,

And the moon changes even as your mind

W. Shakespeare, the Taming of the Shrew, Act IV.

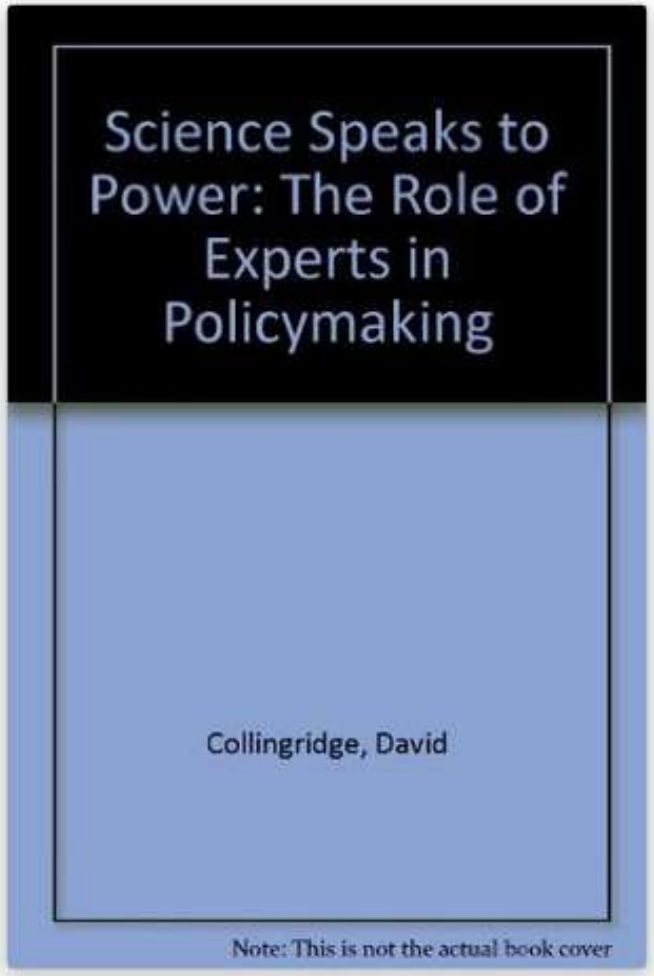
‘Policy based evidence’ has entered the public discourse

Warring parties accuse one another of the sin

“Greenpeace […] wants is policy-based evidence making not evidence-based policy making” (Sanderson, 2015) …

Wilkes, G., 2015, Free Lunch: Policy-based evidence-making, Financial Times, July 3.
Sanderson, A.B., 3 Feb 2015, Breitbart, see http://www.breitbart.com/london/2015/02/03/academic-attacks-greenpeace-for-ignoring-the-evidence-on-gm-crops/; the politician is UKIP Energy Spokesman Roger Helmer MEP.

* Some useful readings



Science Speaks to Power: The Role of Experts in Policymaking Hardcover – 31 Dec 1986

by David Collingridge (Author), Colin Reeve (Author)

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Hardcover
from £999.11

1 Used from £999.11
1 New from £999.11

… but you find a copy on my web site!

Collingridge and Reeve advocate as model for policy decision one of least dependence on science.

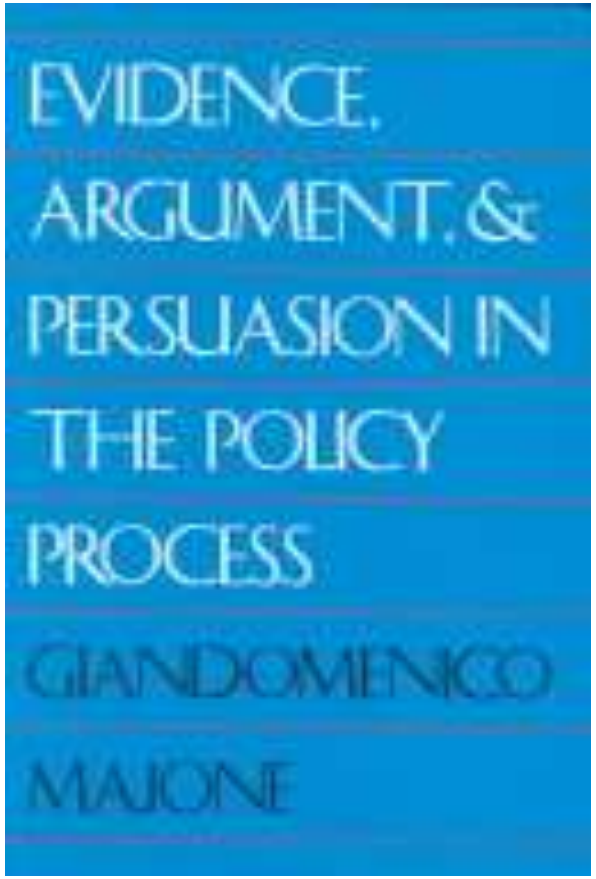
Collingridge, D. and Reeve, C., 1986, Science Speaks to Power: The Role of Experts in Policy Making. London: Frances Pinter.

Collingridge and Reeve (1986) twin myths of rationality

1. policy action is predicated on the accumulation of facts and the taming of uncertainty and

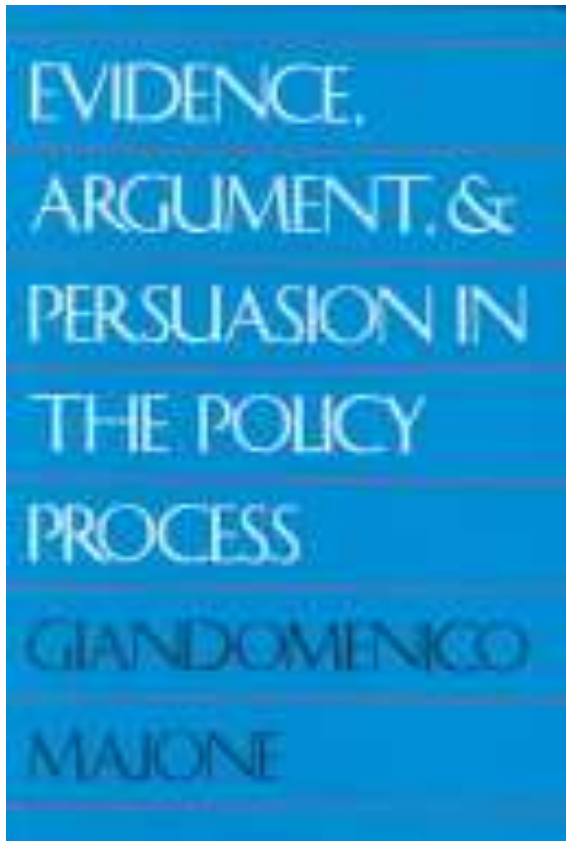
2. the power of science (whereby science is there to provide dispassionate facts to adjudicate controversies).

Collingridge, D. and Reeve, C., 1986, Science Speaks to Power: The Role of Experts in Policy Making. London: Frances Pinter.

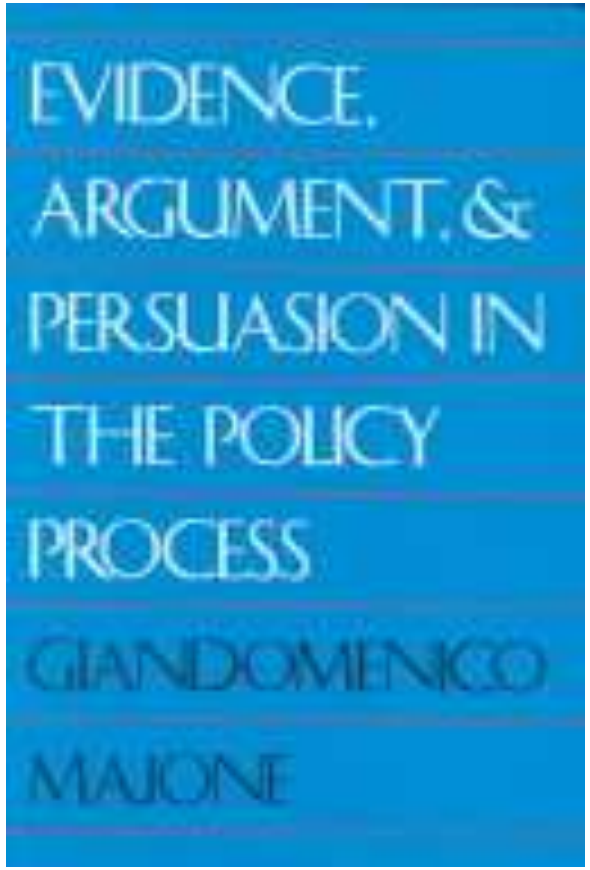


The pretended distinction between facts and value is used instrumentally

In the policy process fact and values cannot be separated in the making of an argument

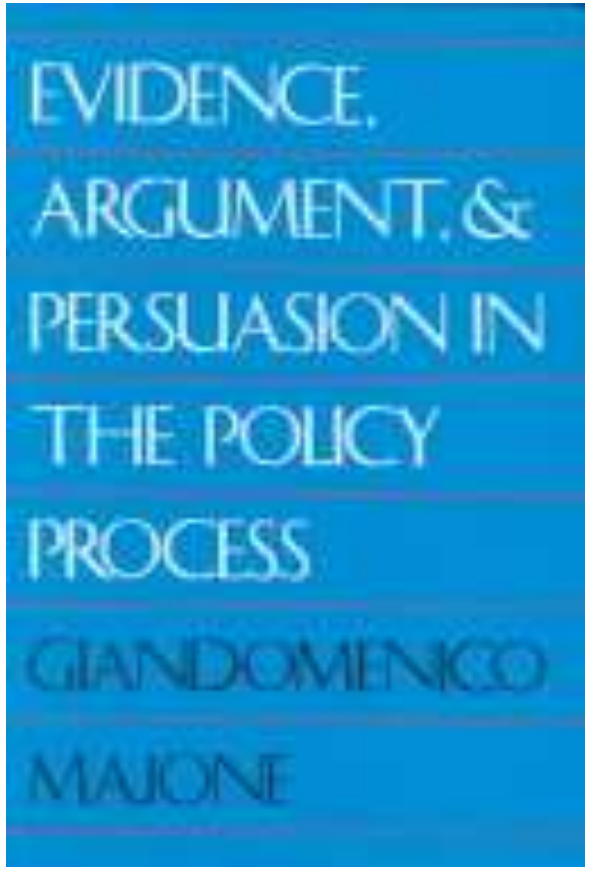


"When science, technology, and public policy intersect, different attitudes, perspectives, and rules of argument come into sharp conflict. Scientific criteria of truth clash with legal standards of evidence and with political notions of what constitutes sufficient ground for action"



"the technique is never neutral"
https://arxiv.org/ftp/arxiv/papers/1712/1712.06457.pdf

Majone: "In any area of public policy the choice of instruments, far from being a technical exercise that can be safely delegated to the experts, reflects as in a microcosm all the political, moral, and cultural dimensions of policy-making"



"[my suggestion is to view a] policy analyst as a producer of arguments, capable of distinguishing between good and bad rhetoric, rather than as a "number cruncher" …

“A bewildering clamour of methods across wide areas of science, technology, the […]economy and society – complexities are routinely sidelined and expediently favourable numbers manufactured to suit the arguments of incumbent interests”

Andrew Stirling

https://steps-centre.org/blog/how-politics-closes-down-uncertainty/
https://www.prospectmagazine.co.uk/magazine/the-price-of-everything-what-people-get-wrong-about-cost-benefit-analysis

“‘tools’ like ‘externality assessment’, ‘impact analysis’ or ‘quantitative valuation’ help convince others which energy policy or health and safety standards or conservation strategy might be considered to be objectively ‘safest’, ‘safe enough’, ‘tolerable’ or even ‘best’”

Andrew Stirling

“[…] rhetoric clamour [surrounds] ‘expected utility’, ‘decision theory’, ‘life cycle assessment’, ‘ecosystem services’ ‘sound scientific decisions’ and ‘evidence-based policy’

Andrew Stirling

Each technique routinely delivers its answers with formidable levels of precision. Yet the resulting impression of accuracy is deeply misplaced”

Science and lobbying

Futures
Volume 91, August 2017, Pages 62-71

Original research article

What is wrong with evidence based policy, and how can it be improved?

Andrea Saltelli [a, b, c], Mario Giampietro [a, c, d]

Power asymmetries in the framing of issues: those who have the deepest pockets marshal the best evidence ➔ Instrumental use of quantification to obfuscate

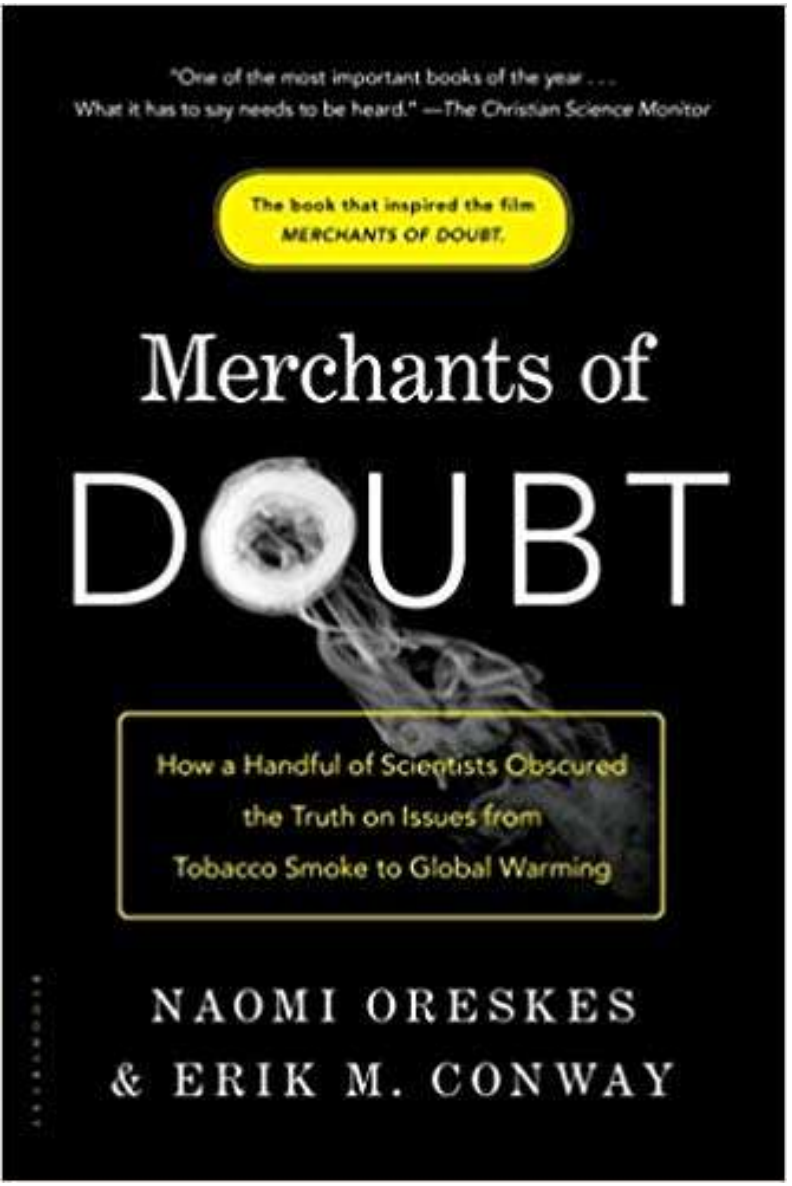
A. Saltelli and M. Giampietro, “What is wrong with evidence based policy, and how can it be improved?,” Futures, vol. 91, pp. 62–71, Feb. 2017.

September 12, 2016

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 hearth disease]”

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



Naomi Oreskes

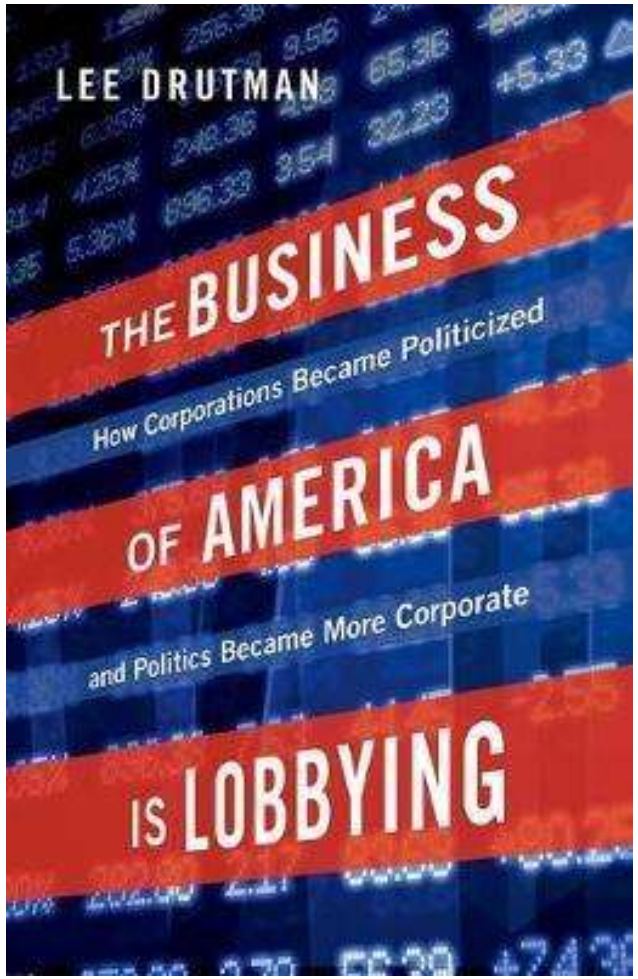
nature
International journal of science

Beware: transparency rule is a Trojan Horse

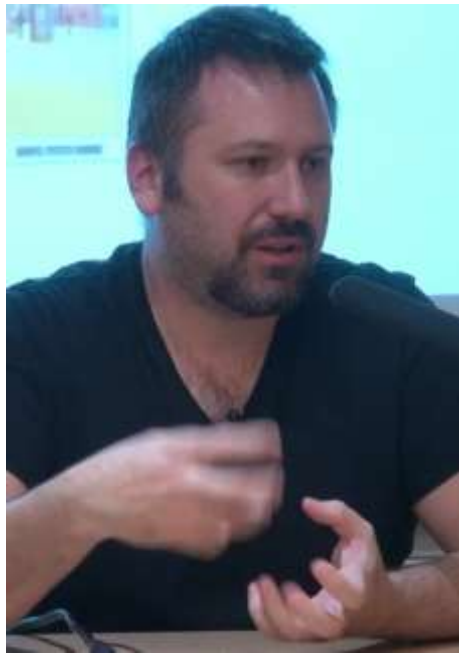
Like tobacco lobbyists and climate-change deniers, the US Environmental Protection Agency is co-opting scientific trappings to sow doubt, warns Naomi Oreskes.

(US) corporate interest can spend on lobbying $34 for each dollar spent by diffuse interest and unions combined

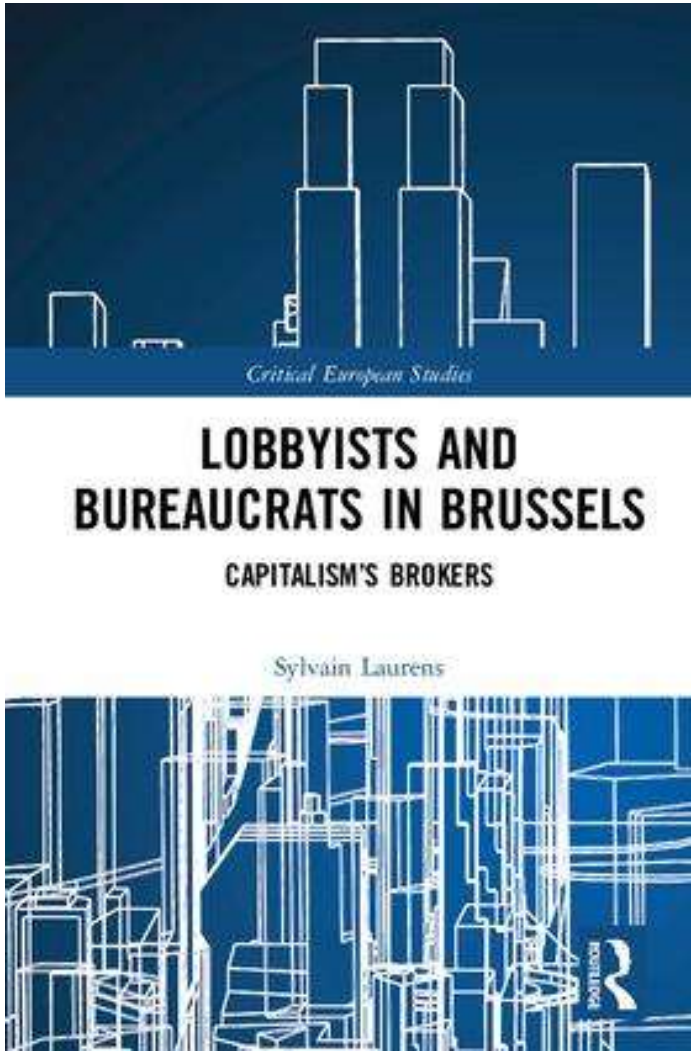
Lee Drutman



(EU) the Brussels concentration effect



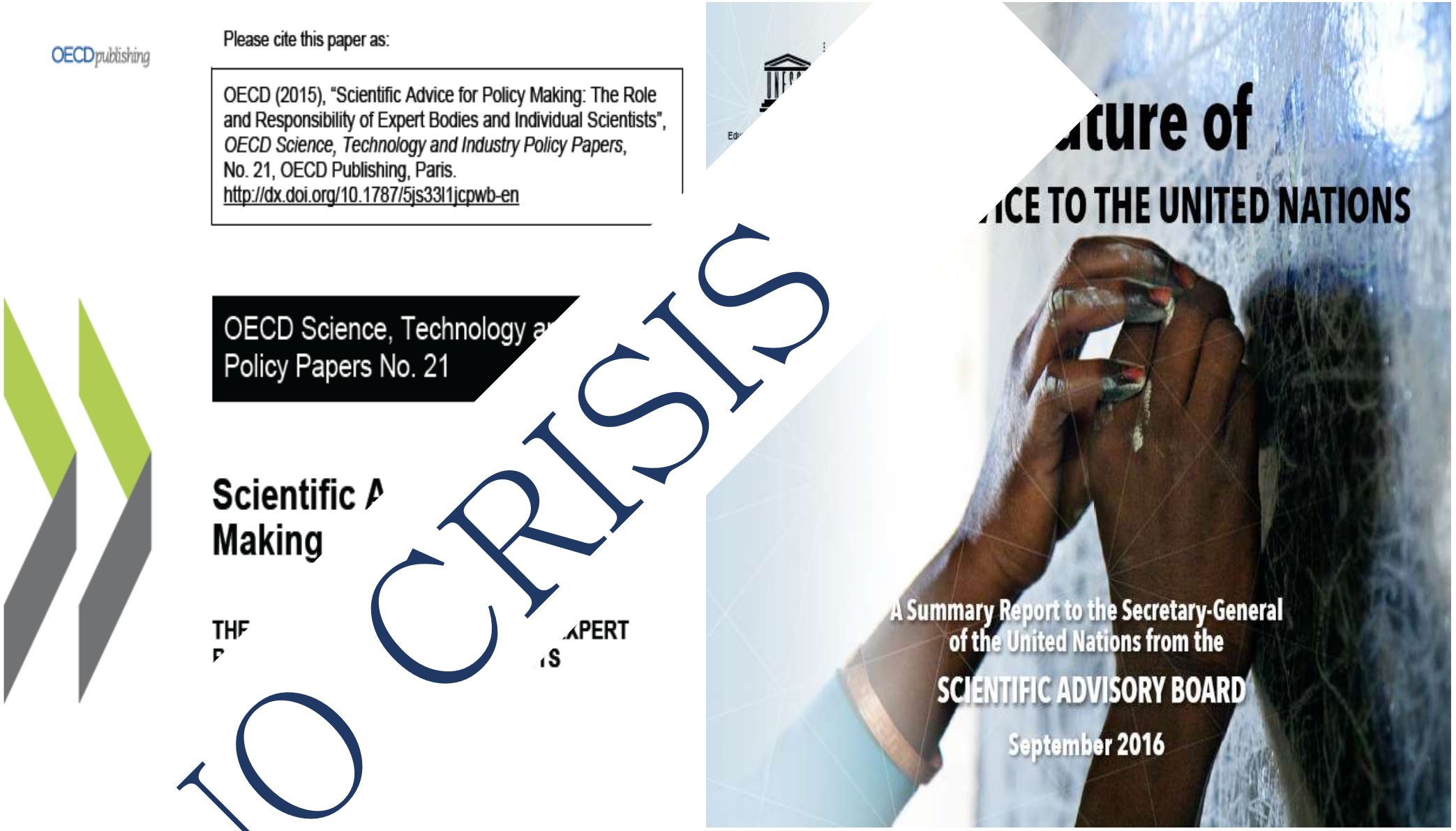
Sylvain Laurens



For both scholars a salient aspect of this power is lobbyists' access to more and better disseminated science

➔ Urgent a remedial action to give citizens and political staffers some structured mechanism of access to independent scientific evidence (L. Drutman)

See discussion on OTA in Adam Keiper, 2004, Science and Congress, The New Atlantis, https://www.thenewatlantis.com/publications/science-and-congress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http://dx.doi.org/10.1787/5js33l1jcpwb-en
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Making
THE
XPERT
S
ICE TO THE UNITED NATIONS
A Summary Report to the Secretary-General of the United Nations from the
SCIENTIFIC ADVISORY BOARD
September 2016
NO CRISIS
2015
2016

Adopted Feb. 2017

symposium, 5y

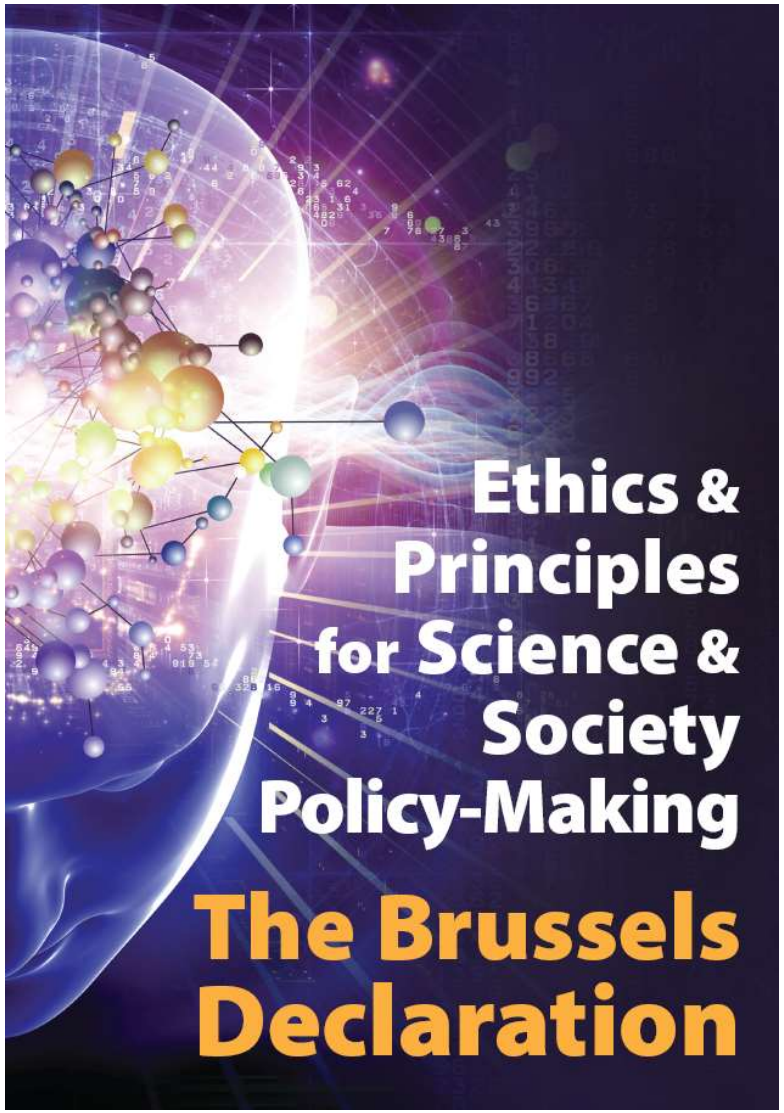
Hundreds

NO CRISIS

No effect of crisis on evidence-based policy

J. McCambridge, M. Daube, and M. McKee, "Brussels Declaration: a vehicle for the advancement of tobacco and alcohol industry interests at the science/policy interface?" Tob. Control, p. tobaccocontrol-2018-054264, Jun. 2018.

L. Bero, "Ten tips for spotting industry involvement in science policy." Tob. Control, p. tobaccocontrol-2018-054386, Jun. 2018.



Futures xxx (xxxx) xxx–xxx

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Why science's crisis should not become a political battling ground

Andrea Saltelli

Centre for the Study of the Sciences and the Humanities – University of Bergen, Norway; Open Evidence Research, Universitat Oberta de Catalunya (UOC), Barcelona, Spain

A left-right divide in the reading of the present predicaments is unhelpful and dangerous

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Futures xxx (xxxx) xxx–xxx

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FUTURES

Why science's crisis should not become a political battling ground

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Centre for the Study of the Sciences and the Humanities – University of Bergen, Norway; Open Evidence Research, Universitat Oberta de Catalunya (UOC), Barcelona, Spain

Corporate interests are quite active at the science-policy interface

Ewen Callaway, 2018, CRISPR plants now subject to tough GM laws in European Union, Top court's ruling threatens research on gene-edited crops in the bloc, Nature, doi: 10.1038/d41586-018-05814-6, https://www.nature.com/articles/d41586-018-05814-6


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"Regulatory policy is increasingly made with the participation of experts, especially academics. A regulated firm or industry should be prepared whenever possible to co-opt these experts. This is most effectively done by identifying the leading expert in each relevant field and hiring them as consultants or advisors or giving them research grant or the like"

Owen, B. M., & Braeutigam, R., 1978 The regulation game, : Strategic Use of the Administrative Process, Ballinger Press

“This activity requires a modicum of finesse; it must not be too blatant, for the experts themselves must not recognize that they have lost their objectivity and freedom of action”

Thanks to Erik Millstone

Owen, B. M., & Braeutigam, R., 1978 The regulation game, : Strategic Use of the Administrative Process, Ballinger Press

US news

Science institute that advised EU and UN 'actually industry lobby group'

International Life Sciences Institute used by corporate backers to counter public health policies, says study

Arthur Neslen

Mon 3 Jun 2019 03.00 BST

Regulatory capture in the name of enlightenment?

Science and its institutions – especially when operating at the science – policy interface, appear vulnerable to forms of societal penetration and control where lobbyists present themselves as upholders of the values of the Enlightenment against science's (and progress') purported enemies.

Defending science from its defenders? Regulatory capture in the name of Enlightenment, work in progress (2019).

DER TAGESSPIEGEL

EU guidelines

08.04.2019, 15:48 Uhr

Ethics washing made in Europe

By Thomas Metzinger

On Tuesday, the EU has published ethics guidelines for artificial intelligence. A member of the expert group that drew up the paper says: This is a case of ethical white-washing

"… a compromise of which I am not proud, but which is nevertheless the best in the world on the subject"

https://www.tagesspiegel.de/politik/eu-guidelines-ethics-washing-made-in-europe/24195496.html

A commission of 52 members, “with only four ethicists alongside 48 non-ethicists – representatives from politics, universities, civil society, and above all industry”

OK to involve industry from the start to get the sector onboard but “The guidelines are lukewarm, short-sighted and deliberately vague”

“They ignore long-term risks, gloss over difficult problems …with rhetoric, violate elementary principles of rationality and pretend to know things that nobody really knows”

Expression such as “non-negotiable” and “Red Lines” had to be dropped for the sake of a “positive vision”

https://ec.europa.eu/digital-single-market/en/news/ethics-guidelines-trustworthy-ai

DER TAGESSPIEGEL

The guidelines touch on hot issues such as

- citizens scoring,
- autonomous lethal weapons,
- covert AI systems,
- tracking of individuals…

https://ec.europa.eu/digital-single-market/en/news/ethics-guidelines-trustworthy-ai

This amounts to “ethics washing = cultivating ethical debates to buy time, distract the public and to prevent or at least delay effective regulation

… industry is building one “ethics washing machine” after another”

Since China is already embarked in “digital totalitarianism” and little hope of strong regulation from the US, Europe bears the responsibility

DER TAGESSPIEGEL

The EU guidelines are good by comparison, but

"Because industry acts more quickly and efficiently than politics or the academic sector, there is a risk that, as with "Fake News", we will now also have a problem with fake ethics"

DER TAGESSPIEGEL

The innovation principle

English EN

Home > Research and innovation > Law and regulations > Innovation-friendly legislation

Ensuring EU legislation supports innovation

What the Innovation Principle is, how it was developed, links to Innovation Deals as well as the better regulation research and innovation tool.

The innovation principle

European Commission

Ensuring EU legislation supports innovation

What is the Innovation Principle?

The Innovation Principle is a tool to help achieve EU policy objectives by ensuring that legislation is designed in a way that creates the best possible conditions for innovation to flourish.

The principle means that in future when the Commission develops new initiatives it will take into account the effect on innovation.

This will ensure that all new EU policy or regulations support innovation and that the regulatory framework in Europe is innovation-friendly.

Against the principle of precaution:

"How an industry association wrote a new principle on innovation and succeeded in introducing this [innovation] principle into a number of European Union (EU) texts"

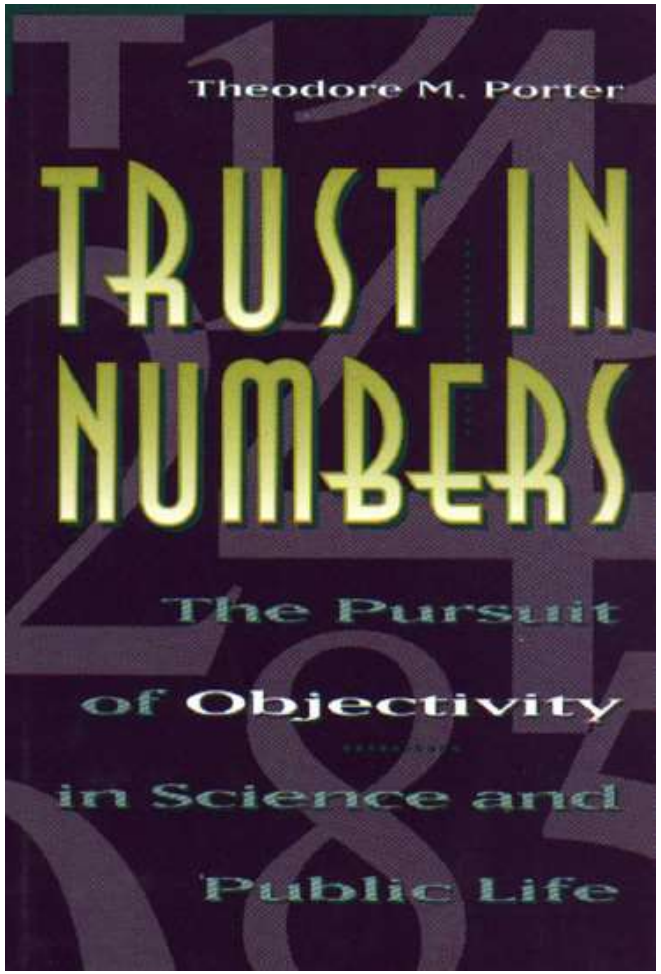
Garnett, Kathleen & Van Calster, Geert & Reins, Leonie. (2018). Towards an innovation principle: an industry trump or shortening the odds on environmental protection?. Law, Innovation and Technology. 10. 1-14.

“This is the first time an industry association has successfully tried to introduce a new principle into the EU’s legal order”

Garnett, Kathleen & Van Calster, Geert & Reins, Leonie. (2018). Towards an innovation principle: an industry trump or shortening the odds on environmental protection?. Law, Innovation and Technology. 10. 1-14. 10.1080/17579961.2018.1455023.

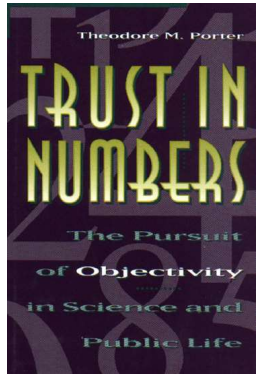
Numbers and trust

Theodor
M. Porter



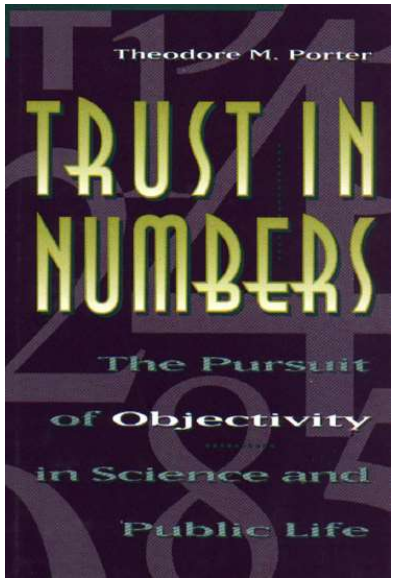
Theodore M. Porter, Trust in Numbers,
The Pursuit of Objectivity in Science and Public Life, Princeton 1995

p. 8: “The appeal of numbers is especially compelling to bureaucratic officials who lack the mandate of a popular election, or divine right.



Arbitrariness and bias are the most usual grounds upon which such officials are criticized.

A decision made by the numbers (or by explicit rules of some other sort) has at least the appearance of being fair and impersonal.”



p. 8: “Scientific objectivity thus provides an answer to a moral demand for impartiality and fairness.

Quantification is a way of making decisions without seeming to decide.

Objectivity lends authority to officials who have very little of their own.”

Trust, authority and styles of quantification: two different stories

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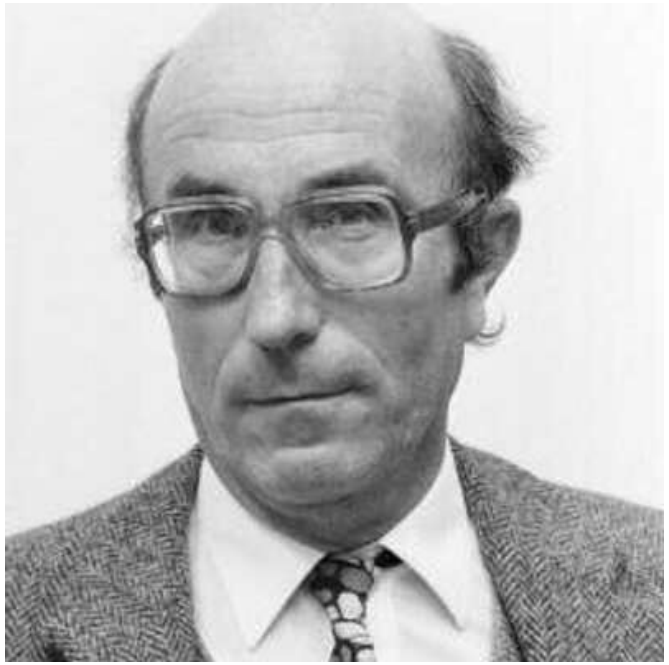
Porter's story: Quantification needs judgment which in turn needs trust …without trust quantification becomes mechanical, a system, and 'systems can be played'.

‘System trust’, is social system theory:

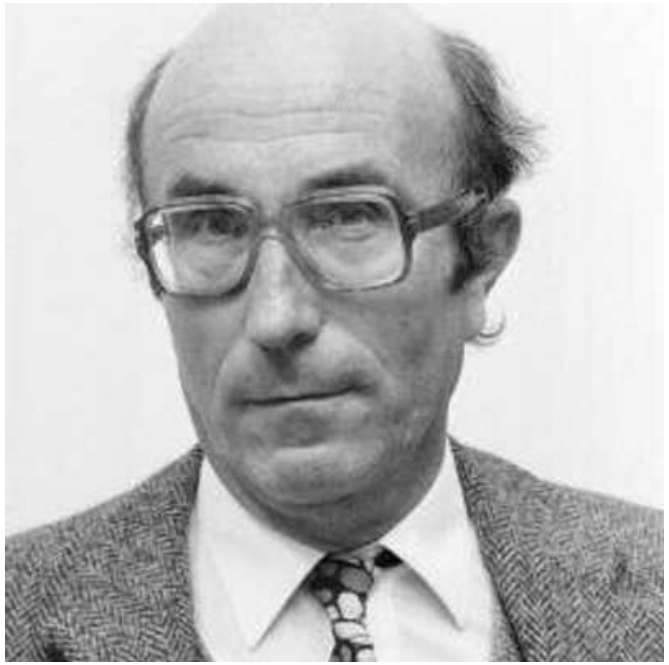
“The reduction of complexity [made possible by generalized media of communication as money, power and truth] **assumes trust** on the part of those who are expecting such reduction and of those who are supposed to accept it once it is accomplished”



Niklas Luhmann

N. Luhmann, Trust and Power. Polity Press, 2017.

"[System trust thus permits] the bank to lend more money than it possess, the state to issue more commands than it can enforce using the police, that more information is divulged in professional advice than could be backed up empirically or logically".



Niklas Luhmann

N. Luhmann, Trust and Power. Polity Press, 2017.

‘the essential fiduciary status’ of science= Trust in science is necessary for the general society to continue to support it, materially and with recruits. And mutual trust within science is necessary for its systems of quality assurance to function

Jerome R. Ravetz

Charles Goodhart

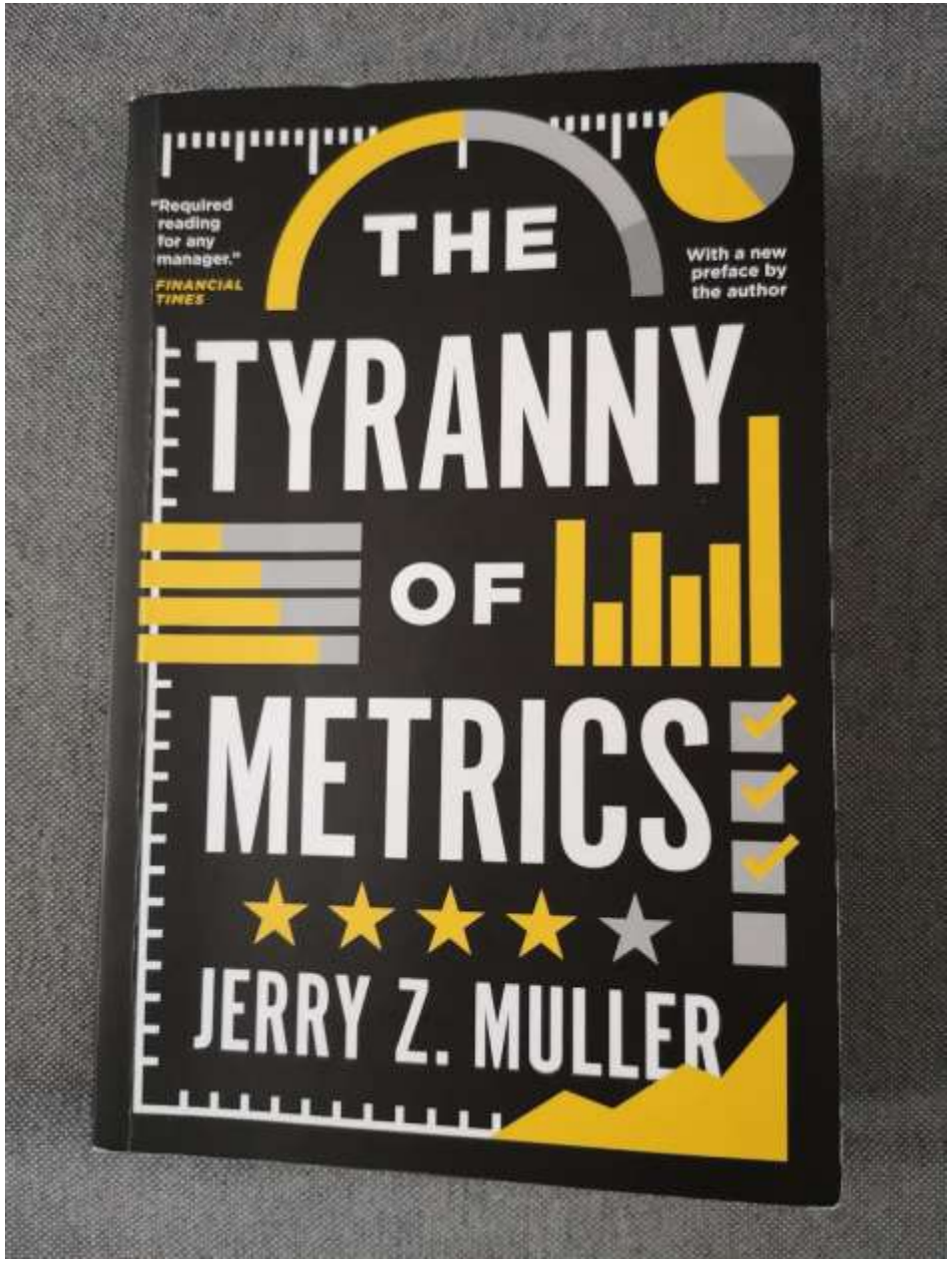
p. 44 “Any … measures necessarily involve a loss of information … [and distorts behavior]” (Porter, 1995)

This is what we normally call Goodhart’s law, from Charles Goodhart. "When a measure becomes a target, it ceases to be a good measure."

Also known as Campbell's law (1976);
https://en.wikipedia.org/wiki/Goodhart%27s_law

For Ravetz (1971, pp. 295–296), when the goals of a task are complex, sophisticated, or subtle, then crude systems of measurements can be played exactly by those persons possessing the skills to execute the tasks properly, who thus manage to achieve their own goals to the detriment of those assigned.

Ravetz, J.R., 1971, Scientific Knowledge and Its Social Problems, 1996 Edition, Transaction Publishers. See plenty of examples in Muller, J.Z., 2018, The Tyranny of Metrics, Princeton.



More reading

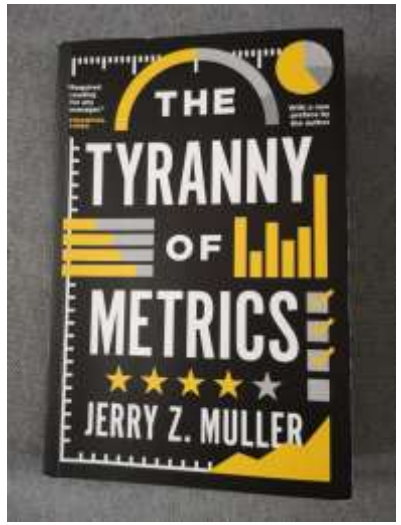
J. Z. Muller, The tyranny of metrics. Princeton University Press , 2018.

Metric fixation, or the irresistible pressure to measure performance

Gaming of metrics (recall Goodhart law)

“The calculative is the enemy of the imaginative”

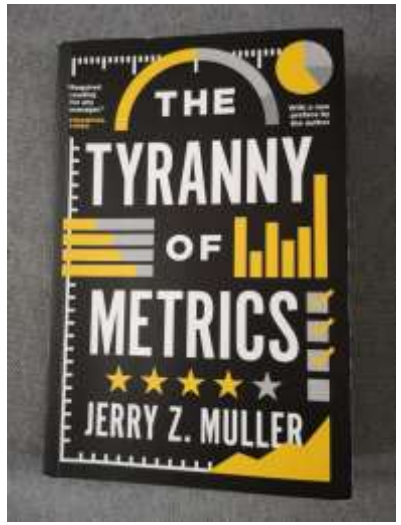
A wealth of case studies from education to war to medicine to foreign aid..



Critiques of metrics

From the left: metric fixation promotes deskilling

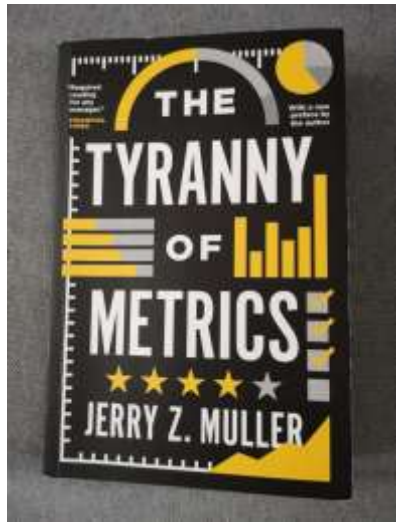
From the right (Friedrich Hayek): metric fixation reproduces features of the soviet system



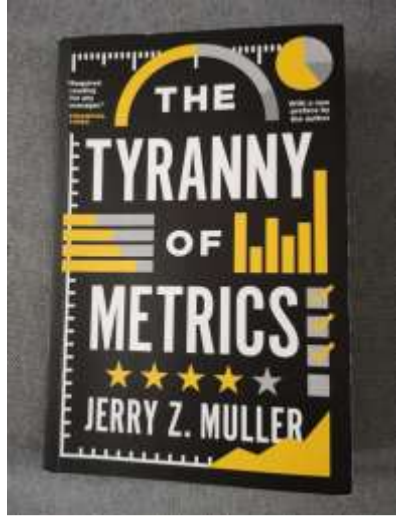
Critiques of metrics

An epistemological critique: metrics privilege abstract and formulaic knowledge against practical and tacit knowledge

(Greek concept of metis)



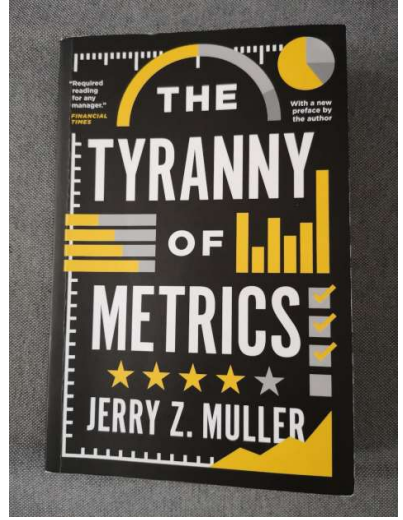
Unintended consequences: a litany



- Goal displacement
- Short termism
- Diminishing utility
- Rule cascade
- Discouraging risk taking
- Discouraging innovation
- Rewarding luck
- Discouraging cooperation and common purpose
- Degrading work
- Time waste
- Loss of productivity

A concluding remark

Considering all of the above keep in mind at every step that “the best use of metrics may be not to use it at all”



Frames

“There is only a perspective seeing, only a perspective “knowing”; and the more affects we allow to speak about one thing, the more eyes, different eyes, we can use to observe one thing, the more complete will our “concept” of this thing, our “objectivity”, be.”

Friedrich Nietzsche, Genealogy of Morals, Third Essay.

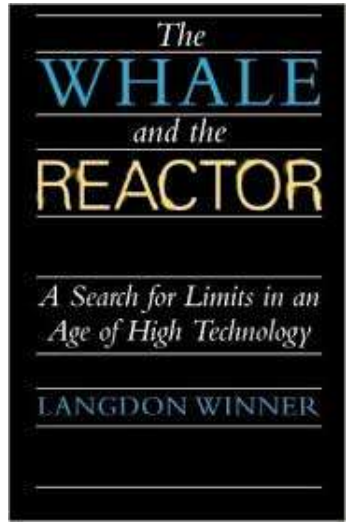
Frames

Most analyses offered as input to policy are framed as cost benefit analysis or risk analyses.

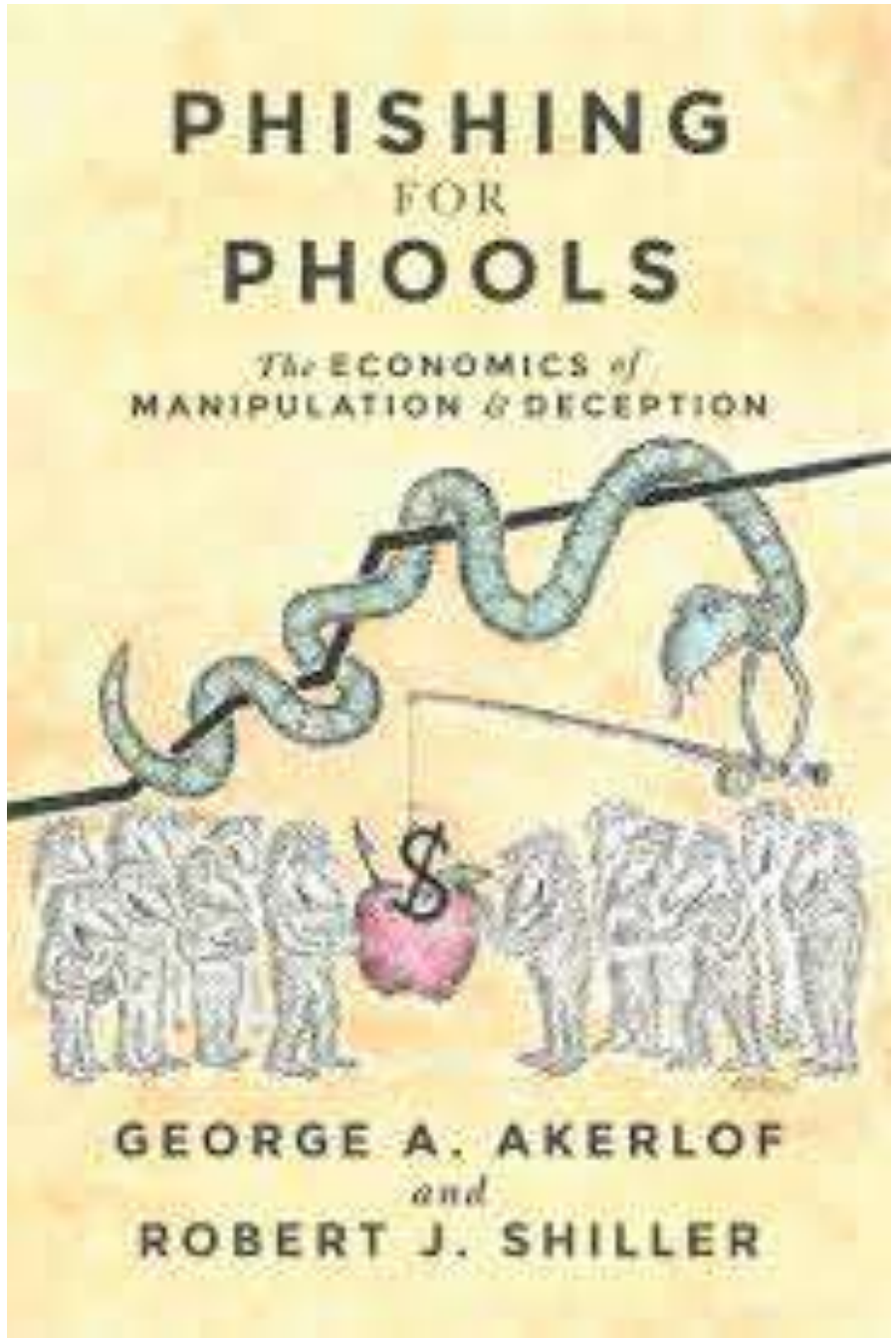
Langdon Winner

8

ON NOT HITTING THE TAR-BABY



Winner, L., 1986. The Whale and the Reactor: a Search for Limits in an Age of High Technology. The University of Chicago Press, 1989 edition.


PHISHING
FOR
PHOOLS
The ECONOMICS of
MANIPULATION & DECEPTION
$
GEORGE A. AKERLOF
and
ROBERT J. SHILLER

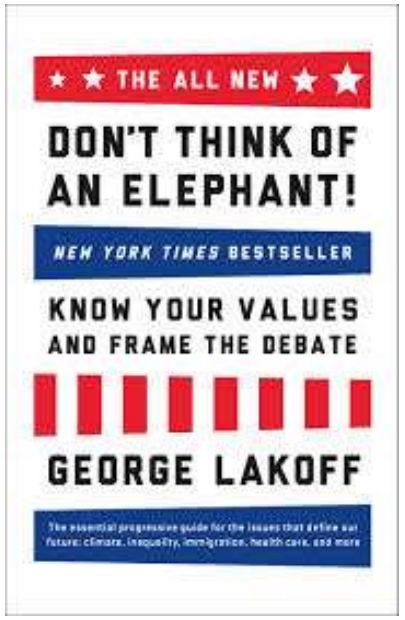
For Akerlof and Shiller – against what the ‘invisible hand’ would contend – economic actors have no choice but to exploit frames to ‘phish’ people into practices which benefit the actors not the subject phished.

George Akerlof

Robert R. Shiller

Frames: The expression ‘tax relief’ is apparently innocuous but it suggests that tax is a burden, as opposed to what pays for road, hospitals, education and other infrastructures of modern life (Lakoff, 2004).

George Lakoff



Lakoff, G., 2010, Why it Matters How We Frame the Environment, Environmental Communication: A Journal of Nature and Culture, 4:1, 70-81.

Lakoff, G., 2004-2014, Don’t think of an elephant: know your values and frame the debate, Chelsea Green Publishing.

Frames as hypocognition & Socially constructed ignorance

For Rayner (2012) “Sense-making is possible only through processes of exclusion. Storytelling is possible only because of the mass of detail that we leave out. Knowledge is possible only through the systematic ‘social construction of ignorance’ (Ravetz, 1986)”

Steve Rayner Jerry Ravetz

Ravetz, J., R., 1987, Usable Knowledge, Usable Ignorance, Incomplete Science with Policy Implications, Knowledge: Creation, Diffusion, Utilization, 9(1), 87-116. Rayner, S., 2012, Uncomfortable knowledge: the social construction of ignorance in science and environmental policy discourses, Economy and Society, 41:1, 107-125.

Rayner's (2012) strategies to deal with "uncomfortable knowledge".

1. Denial: "There isn't a problem"

2. Dismissal: "It's a minor problem"

Rayner, S., 2012, Uncomfortable knowledge: the social construction of ignorance in science and environmental policy discourses, Economy and Society, 41:1, 107-125.

Rayner's (2012) strategies to deal with "uncomfortable knowledge".

3. Diversion: "Yes I am working on it" (In fact I am working on something that is only apparently related to the problem)

Rayner, S., 2012, Uncomfortable knowledge: the social construction of ignorance in science and environmental policy discourses, Economy and Society, 41:1, 107-125.

Rayner's (2012) strategies to deal with "uncomfortable knowledge".

4. Displacement: "Yes and the model we have developed tells us that real progress is being achieved" (The focus in now the model not the problem).

Rayner, S., 2012, Uncomfortable knowledge: the social construction of ignorance in science and environmental policy discourses, Economy and Society, 41:1, 107-125.

“Uncomfortable knowledge” can be used as a gauge of an institution’s health.

The larger the “uncomfortable knowledge” an institution needs to maintain, the closer it is to its ancient régime stage

Use of frames in the social disputes about technology: the case of GMO

The Washington Post

Speaking of Science

107 Nobel laureates sign letter blasting Greenpeace over GMOs

https://www.washingtonpost.com/news/speaking-of-science/wp/2016/06/29/more-than-100-nobel-laureates-take-on-greenpeace-over-gmo-stance/

By Joel Achenbach

While Greenpeace and other organizations oppose genetically engineered food, more than 100 Nobel laureates are taking a stand on the side of GMOs. Here's a look at each side's arguments. (Jenny Starrs/The Washington Post)

"While Greenpeace and other organizations oppose genetically engineered food, more than 100 Nobel laureates are taking a stand on the side of GMOs. Here's a look at each side's arguments. (Jenny Starrs/The Washington Post)"

From the Nobel laureates' letter:

"Greenpeace has spearheaded opposition to Golden Rice, which has the potential to reduce or eliminate much of the death and disease caused by a vitamin A deficiency (VAD), which has the greatest impact on the poorest people in Africa and Southeast Asia.

[…] a total of one to two million preventable deaths occur annually as a result of VAD, […] VAD itself is the leading cause of **childhood blindness globally affecting 250,000 – 500,000 children each year. Half die within 12 months of losing their eyesight**"

From the Nobel laureates' letter:

"[…] Opposition based on emotion and dogma contradicted by data must be stopped.

How many poor people in the world must die before we consider this a "**crime against humanity**"?"

http://supportprecisionagriculture.org/nobel-laureate-gmo-letter_rjr.html

Opposing evidence on Golden Rice

Nutritionally: not enough beta carotene

Golden rice not authorized yet

More politically viable alternative successful

Dangerous colour

Low yield of the modified variety …

http://www.ecowatch.com/greenpeace-to-nobel-laureates-its-not-our-fault-golden-rice-has-failed-1896697050.html

https://theconversation.com/forcing-consensus-is-bad-for-science-and-society-77079.

Frame: Resistance to GMO is irrational as GMO are safe

GMO opponents as ‘New-Agers’

The Economist, Vermont v science, The little state that could kneecap the biotech industry, May 10th 2014

Myth I: The primordial cause of the problem is that lay people are ignorant about scientific facts

Myth 2: People are either 'for' or 'against' GMOs

Myth 3: Consumers accept medical GMOs but refuse GMOs used in food and agriculture

Myth 4: European consumers are behaving selfishly towards the poor in the Third World

Myth 5: Consumers want labelling in order to exercise their freedom of choice

Myth 6: The public thinks – wrongly – that GMOs are unnatural

Myth 7: It's the fault of the BSE crisis: since then, citizens no longer trust regulatory institutions

Myth 8: The public demands 'zero risk'– and this is not reasonable

Myth 9: Public opposition to GMOs is due to "other – ethical or political– factors“

Myth 10: The public is a malleable victim of distorting sensationalist media

Why do we need GMOs? What are the benefits?

Who will benefit from their use?

Who decided that they should be developed and how?

Marris, C., Wynne, B., Simmons P., and Weldon, S. 2001. Final Report of the PABE research project funded by the Commission of European Communities, Contract number: FAIR CT98-3844 (DG12 - SSMI), December 2001.

Why were we not better informed about their use in our food, before their arrival on the market?

Why are we not given an effective choice about whether or not to buy and consume these products?

Do regulatory authorities have sufficient powers and resources to effectively counter-balance large companies who wish to develop these products?

Can controls imposed by regulatory authorities be applied effectively?

Have the risks been seriously assessed? By whom? How?

Have potential long-term consequences been assessed? How?

How have irreducible uncertainties and unavoidable domains of ignorance been taken into account in decision-making?

What plans exist for remedial action if and when unforeseen harmful impacts occur?

Who will be responsible in case of unforeseen harm? How will they be held to account?

The National Academies of SCIENCES • ENGINEERING • MEDICINE

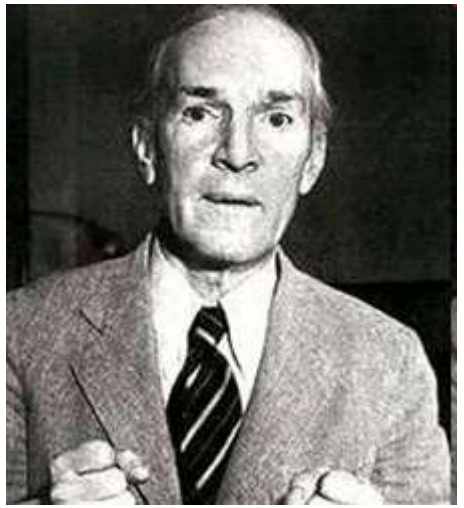
A SCIENCE-BASED LOOK AT GENETICALLY ENGINEERED CROPS

US National Academy of Sciences report on genetically engineered crops: "Products of new technologies should be regulated not only on the basis of their benefit–risk profiles, but also on their societal context and need"

Hunter, J., Duff, G., GM crops—lessons from medicine, Science, 353, 1187 (2016)

Why frames ‘stick’

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



Upton Sinclair

The End

@andreasaltelli