

# Science and regulatory capture

Andrea Saltelli

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Lesson to the Università Politecnica delle Marche,  
Ancona, May 24, 2021



# Where to find this talk: [www.andreasaltelli.eu](http://www.andreasaltelli.eu)

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CAETERIS ARE  
NEVER PARIBUS

## Tweets by @AndreaSaltelli



**andrea saltelli**

@AndreaSaltelli

Rapper. Arrested. 2021? 🤔 <https://twitter.com/guardian/status/1362147283492552712>



55m



andrea saltelli Retweeted



**Philip Stark**

@philipstark

Replying to @AndreaSaltelli and 13 others

The IHME COVID model qualifies. The underlying Farr model was debunked by the AIDS epidemic, and its 95% next-day prediction intervals for deaths missed up to 70% of the time btw 3/20 & 8/20 [arxiv.org/abs/2004.04734](https://arxiv.org/abs/2004.04734) & [royalsocietypublishing.org/doi/10.1098/rs...](https://royalsocietypublishing.org/doi/10.1098/rs...)

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# Science, the Endless Frontier of Regulatory Capture

30 Pages • Posted: 12 Mar 2021

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Date Written: March 1, 2021

## Paper statistics

DOWNLOADS

131

ABSTRACT VIEWS

634

RANK

262,478

84

[References](#)

# From the abstract:

... a form of corporate penetration which is based on a strategic use of the image and legitimacy of science

...cases where lobbyists present themselves as upholders of the values of the evidence-based policy, and interested in the methodological and ethical aspect of science for policy

# From the abstract:

Epistemic ladder: lobbyists move from  
**questioning** the evidence to  
**questioning** its legitimacy, all the way to  
**creating** a worldview where not only the evidence, but the very  
idea of regulation, become irrelevant or undesirable

What is regulatory  
capture?

quis  
custodiet  
ipsos  
custodes?

SATYRÆ.

Decimus Junius Juvenalis  
1<sup>st</sup> century AD



Da Ercolano, Museo Archeologico Nazionale di Napoli

*“Regulatory capture is the process through which special interests affect state intervention in any of its forms, which can include areas as diverse as the setting of taxes, the choice of foreign or monetary policy, or the legislation affecting R&D”*

(Dal Bó, Ernesto. 2006. “REGULATORY CAPTURE: A REVIEW.” Oxford Review of Economic Policy 22: 203–25)



Source: Mimi & Eunice, <https://mimiandeunice.com/2011/07/21/lets-make-more-regulations/>

The ineluctability of regulatory capture cuts across schools of economic thought: public interest theory and regulatory capture theory



Arthur Cecil Pigou  
1877 –1959

George J. Stigler  
1911 –1991



**Regulation** in the public interest theory is seen as a need originating from market failure – hence the need for regulatory intervention



Arthur Cecil Pigou  
1877 –1959

**Regulation** in regulatory capture theory is seen as a result of particular interests which are favoured by it

*“regulation is acquired by the industry and is designed and operated primarily for its benefit”*

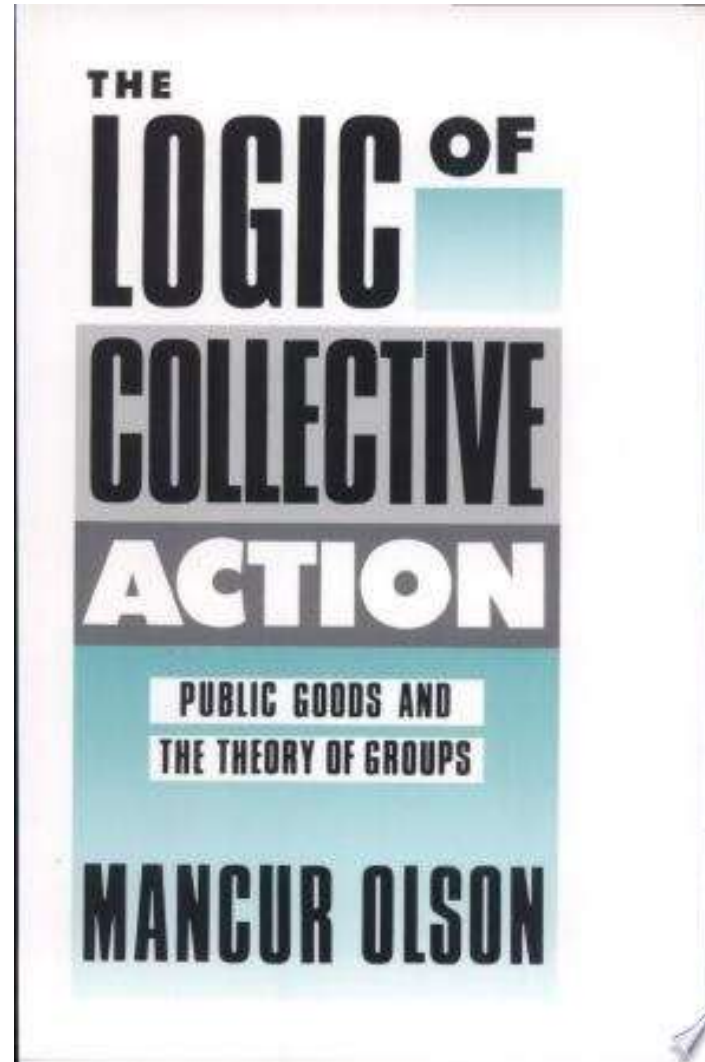
George J. Stigler  
1911 –1991



“The logic of collective action”: well-organized minorities win over majorities when it comes to satisfying their interests



Mancur Olson  
1932 –1998



# Beryl L. Crowe: a regulatory capture cycle

- An agency is created as a result of a period of social alarm
- Eventually, interest groups take control
- In the final phase, even the staff of the agency comes from the interest groups it should regulate

**The Tragedy of the  
Commons Revisited**

28 November 1969, Volume 166, Number 3909

**SCIENCE**

# Beryl L. Crowe: a regulatory capture cycle

- At the end of the cycle the regulators offer to society symbolic assurances, while their day-to-day job is to favour special interests

**The Tragedy of the  
Commons Revisited**

28 November 1969, Volume 166, Number 3909

**SCIENCE**

Paul Sabatier: a “Less pessimistic theory”

Regulators can take “active measures to reinvigorate and/or create a constituency supportive of aggressive regulation”.

Sabatier, Paul. 1975. “Social Movements and Regulatory Agencies: Toward a More Adequate—and Less Pessimistic—Theory of ‘Clientele Capture.’” *Policy Sciences* 6 (3): 301–42.

➔ consumer organizations, environmental groups, and public interest law firms

A more recent concept: **regulatory capitalism**, the new global world order where the importance of rules as a source of power has increased in scope



# Regulatory capitalism

**Optimistic view:** allowing a more balanced approach to the distribution of power and resources in favour of the global poor (Levi-Faur, David [Editor of Regulation and Governance]. 2005. “The Global Diffusion of Regulatory Capitalism.” The ANNALS of the American Academy of Political and Social Science 598 (1): 12–32.)

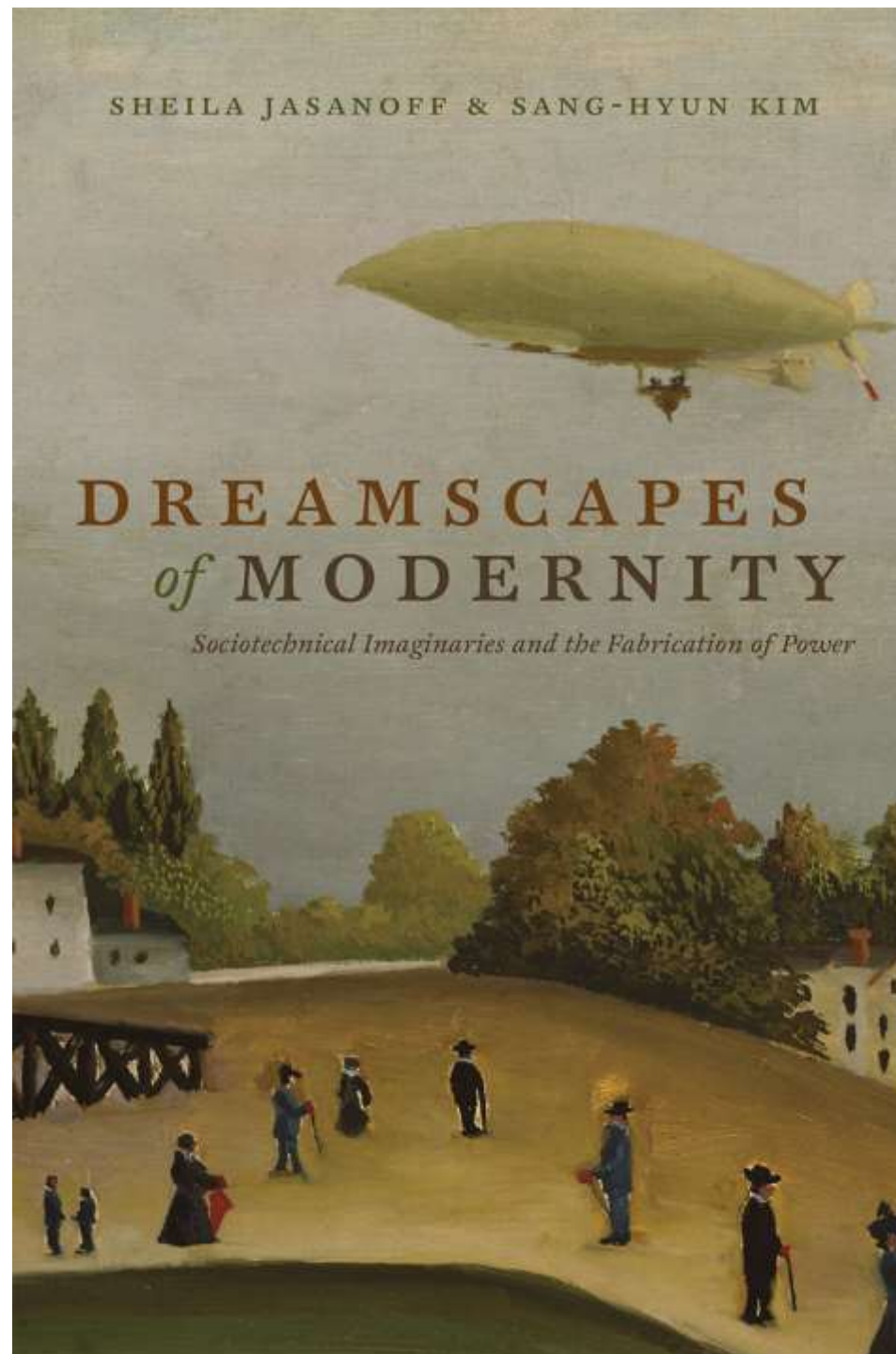
**Pessimistic view:** act of the tragedy of commodification, made possible by a subservient and commodified science (Draho, Peter. 2020. “Responsive Science.” Annual Review of Law and Social Science 16 (1): annurev-lawsocsci-040220-065454.)

# Cognitive capture?

“regulators may come to view the world the way firms do, not because they have been captured through incentives, but because they have been convinced”

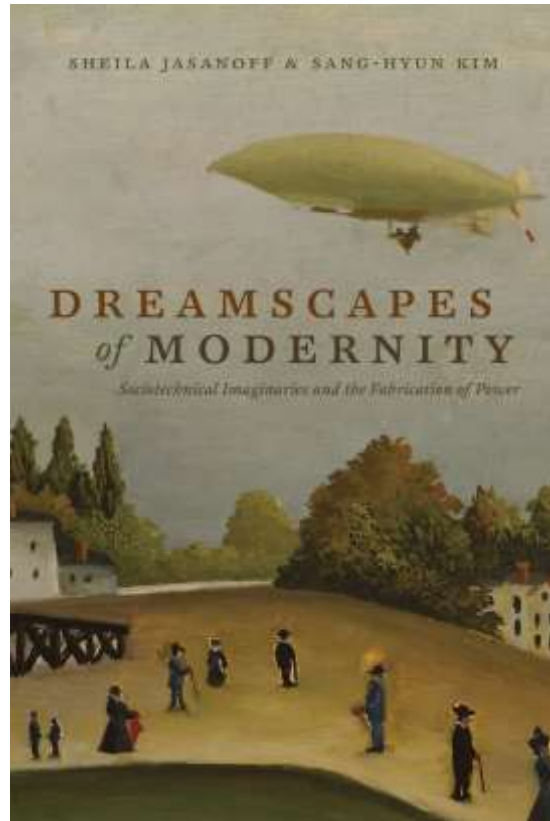
(Dal Bó, Ernesto. 2006. “REGULATORY CAPTURE: A REVIEW.” Oxford Review of Economic Policy 22: 203–25)

A battle about  
dominating the  
sociotechnical  
imaginary



Sheila Jasanoff

How visions of scientific and technological progress carry with them implicit ideas about public purposes, collective futures, and the common good



Sheila Jasanoff



George Lakoff



Philip Mirowski

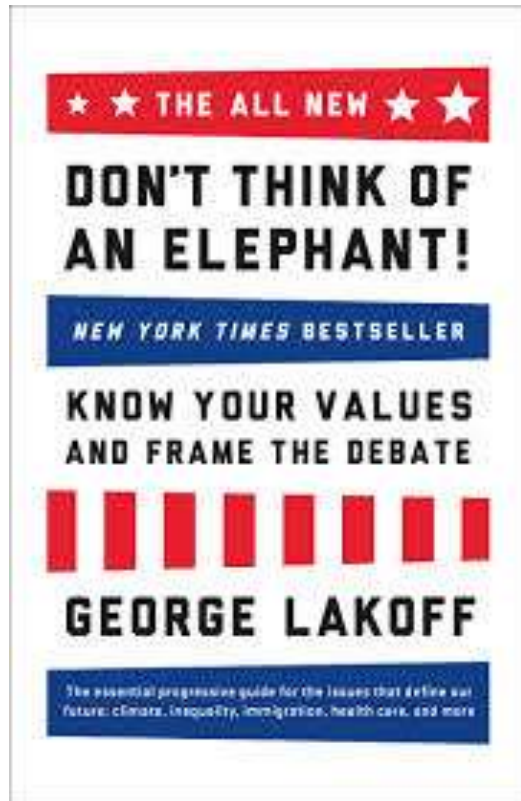
# Cognitive capture?

For George Lakoff and Philip Mirowski a neoliberal order seems to have won the ideological battle of hearts and minds



George Lakoff

Frames: The expression ‘tax relief’ is apparently innocuous but it suggests that tax is a burden, as opposed to what pays public expenditures



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.

# Cognitive capture?



Philip Mirowski

Mirowski suggests accepting the existence since the 50's of a **Neoliberal Thought Collective** consolidating a philosophical credo (market knows best, government is an impediment, there is no such thing as a society...)

Mont Pèlerin Society, Atlas Foundation,  
Liberty Fund, Mercatus Center,  
Heritage Action, Ethics and Public Policy Center,  
Federalist Society...

P. Mirowski, "Hell Is Truth Seen Too Late," Bound. 2, vol. 46, no. 1, pp. 1–53, Feb. 2019.

# Oxford/AstraZeneca Covid vaccine research 'was 97% publicly funded'

**Analysis rebuts claim by Boris Johnson that jab was developed 'because of greed'**



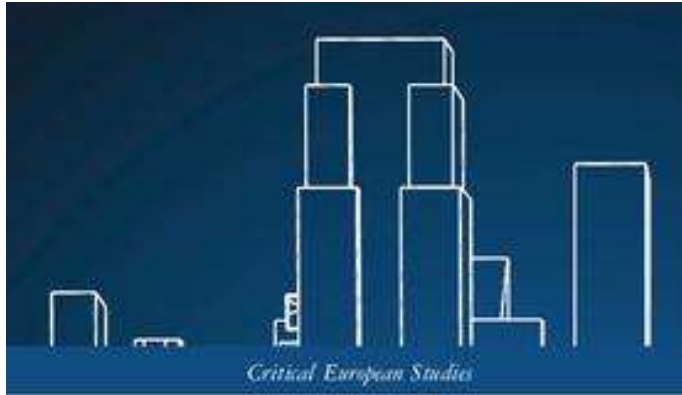
“the record-fast development of Covid-19 vaccines was “because of capitalism, because of greed”



What has science to  
do with all that?

Power asymmetries in the framing of issues:  
those who have the deepest pockets marshal  
the best [foremost ‘scientific’] evidence

# Sylvain Laurens

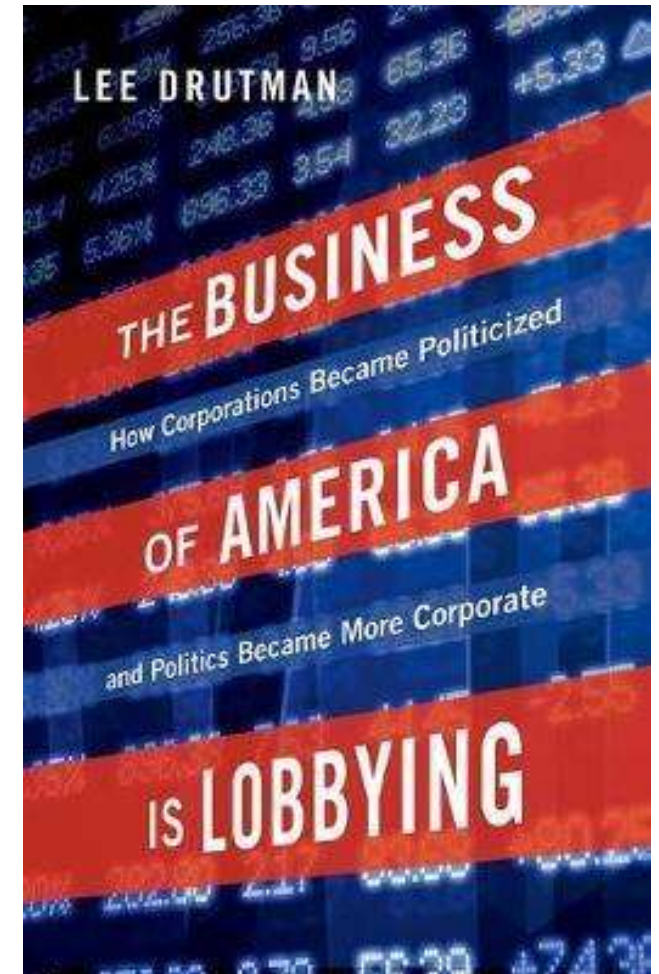


## LOBBYISTS AND BUREAUCRATS IN BRUSSELS CAPITALISM'S BROKERS

Sylvain Laurens



Lee Drutman



For both Laurens and Drutman a salient aspect of this power is lobbyists' access to more and better disseminated knowledge/science

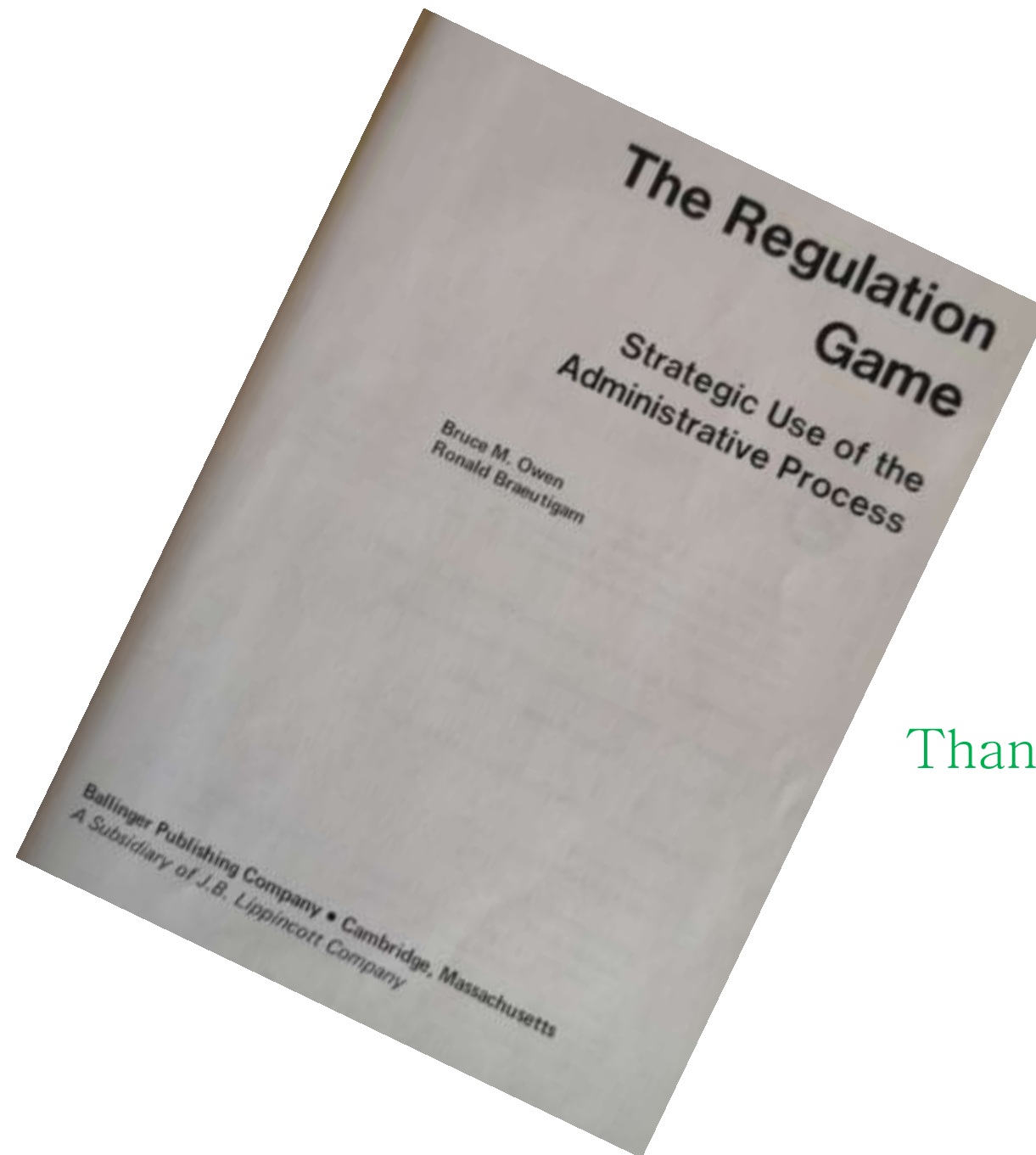
“They have the data”





**"HIS MASTER'S VOICE"**

REG. U.S. PAT. OFF.



Thanks to Erik Millstone  
(U. Sussex)

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

... remember  
regulatory capture  
theory

George J. Stigler  
1911 –1991



“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”

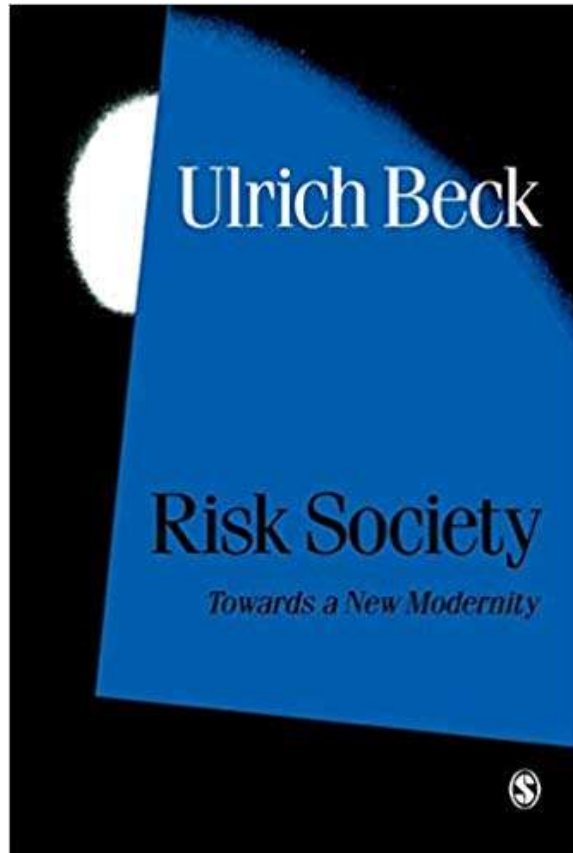


Owen, B. M., & Braeutigam, R., 1978 The regulation game, : Strategic Use of the Administrative Process, Ballinger Press

Corporate policy: get 'the best' among scientists ...  
Seducing them 'with a modicum of finesse'



Science as a self-service shop for financially well-endowed customers in need of arguments  
(Beck 1992)



1992 (1986)



Ulrich Beck  
(1944 –2015)

There is more to come: the next level of corporate capture: the battle for ‘sound science’ against “junk science”



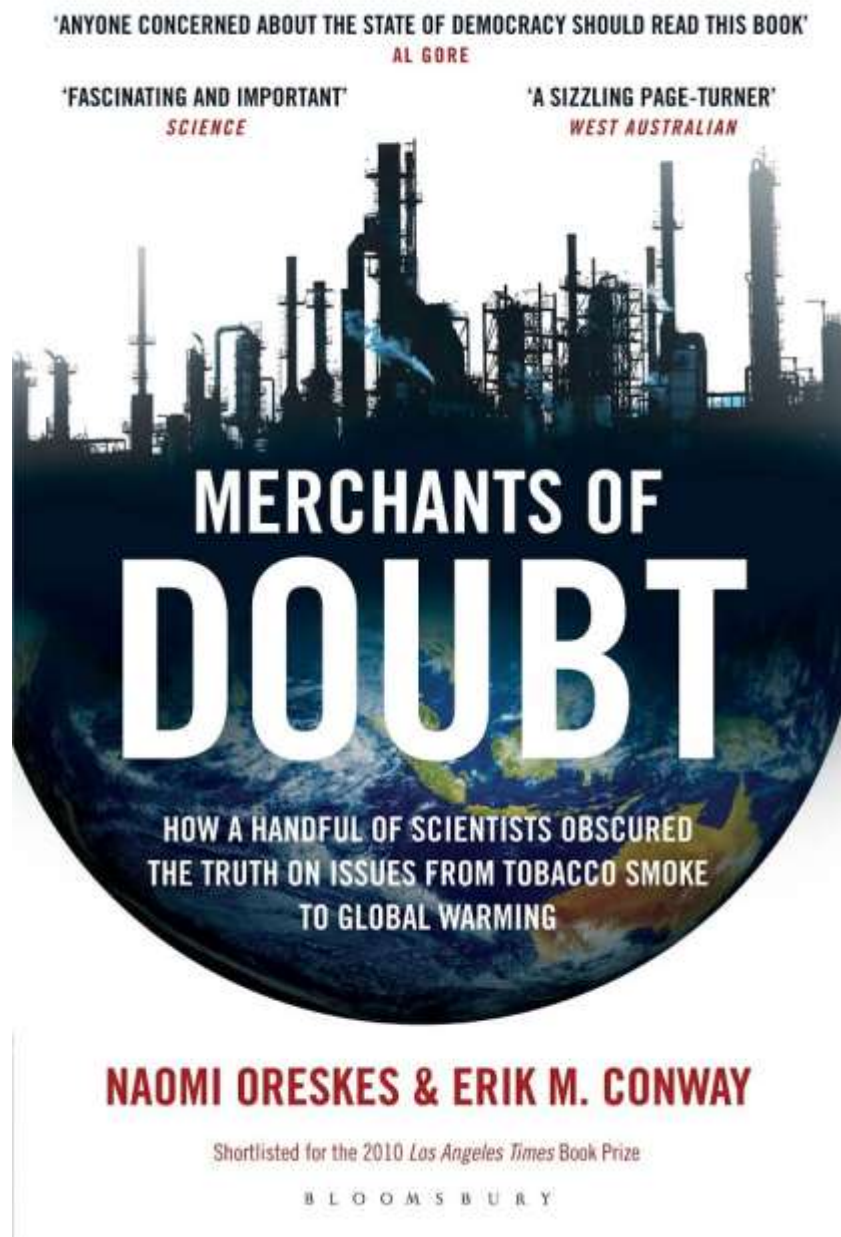
[Am J Public Health](#). 2001 November; 91(11): 1749–1757. PMCID: PMC1446868

doi: [10.2105/ajph.91.11.1749](https://doi.org/10.2105/ajph.91.11.1749)

PMID: [11684593](https://pubmed.ncbi.nlm.nih.gov/11684593/)

## **Constructing “Sound Science” and “Good Epidemiology”: Tobacco, Lawyers, and Public Relations Firms**

[Elisa K. Ong](#), MD, MS and [Stanton A. Glantz](#), PhD



Naomi Oreskes and Erik M. Conway

# Science's crisis is also fodder for the lobbyists

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Futures

Volume 104, December 2018, Pages 85-90



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

Andrea, Saltelli 

# Science's crisis is also fodder for the lobbyists



Futures

Volume 104, December 2018, Pages 85-90



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

Andrea, Saltelli [✉](#)

## Highlights

- Science' reproducibility crisis has become a political and industrial battleground.
- Conservatives and corporate interests use the crisis to weaken regulations, their opponent deny the existence of even a reproducibility crisis.

# The Irreproducibility Crisis of Modern Science

NATIONAL  
ASSOCIATION  
*of* SCHOLARS

David Randall Christopher Welser April 09, 2018

Argues that sloppy procedures are infecting science,  
advocacy-driven & victim of politicized groupthink  
➔ US agencies should only regulate on open,  
transparent and verifiable science ➔ Secret Science  
Reform Act

# 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.

Naomi Oreskes 

**WORLD VIEW** • 22 MAY 2018

**nature**

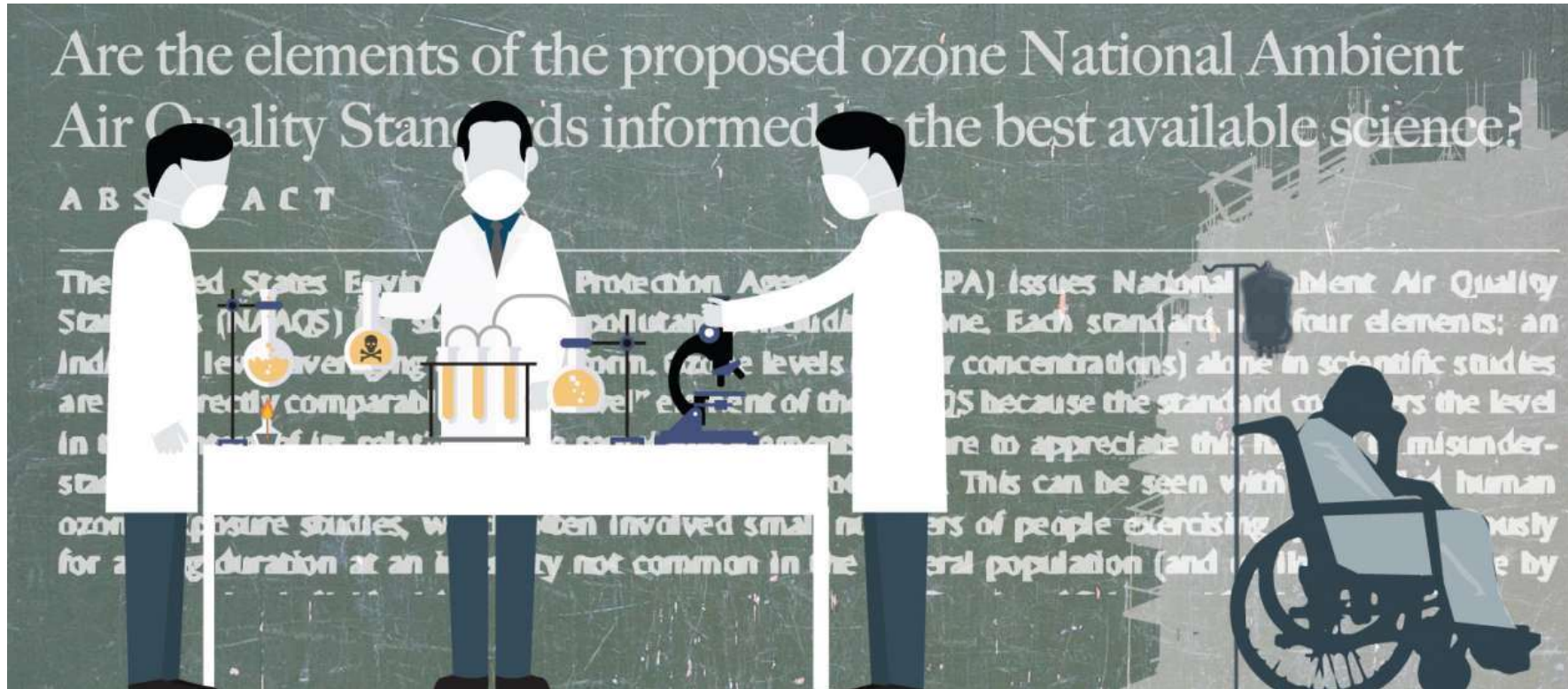
“The crisis is the attempt to discredit scientific findings that threaten powerful corporate interests”

Chemical, pharmaceutical, surgical, food, tobacco, sugar companies fund friendly science and seed doubt about adversarial one; the self-appointed guardians of sound science

<https://theintercept.com/2016/11/15/how-self-appointed-guardians-of-sound-science-tip-the-scales-toward-industry/>



Lobbyists recruit laws firms which in turn recruit scientific services for their customer;

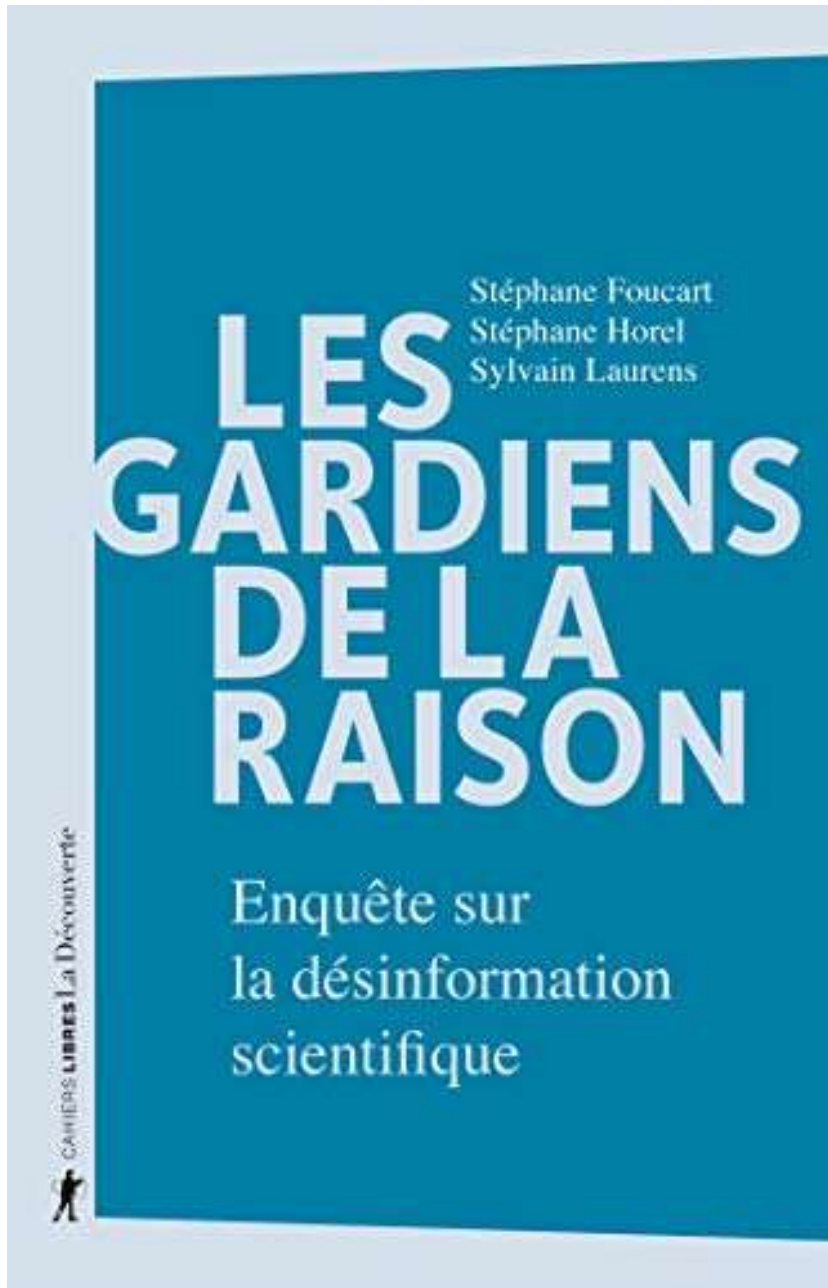


<http://www.publicintegrity.org/2016/02/08/19223/meet-rented-white-coats-who-defend-toxic-chemicals>

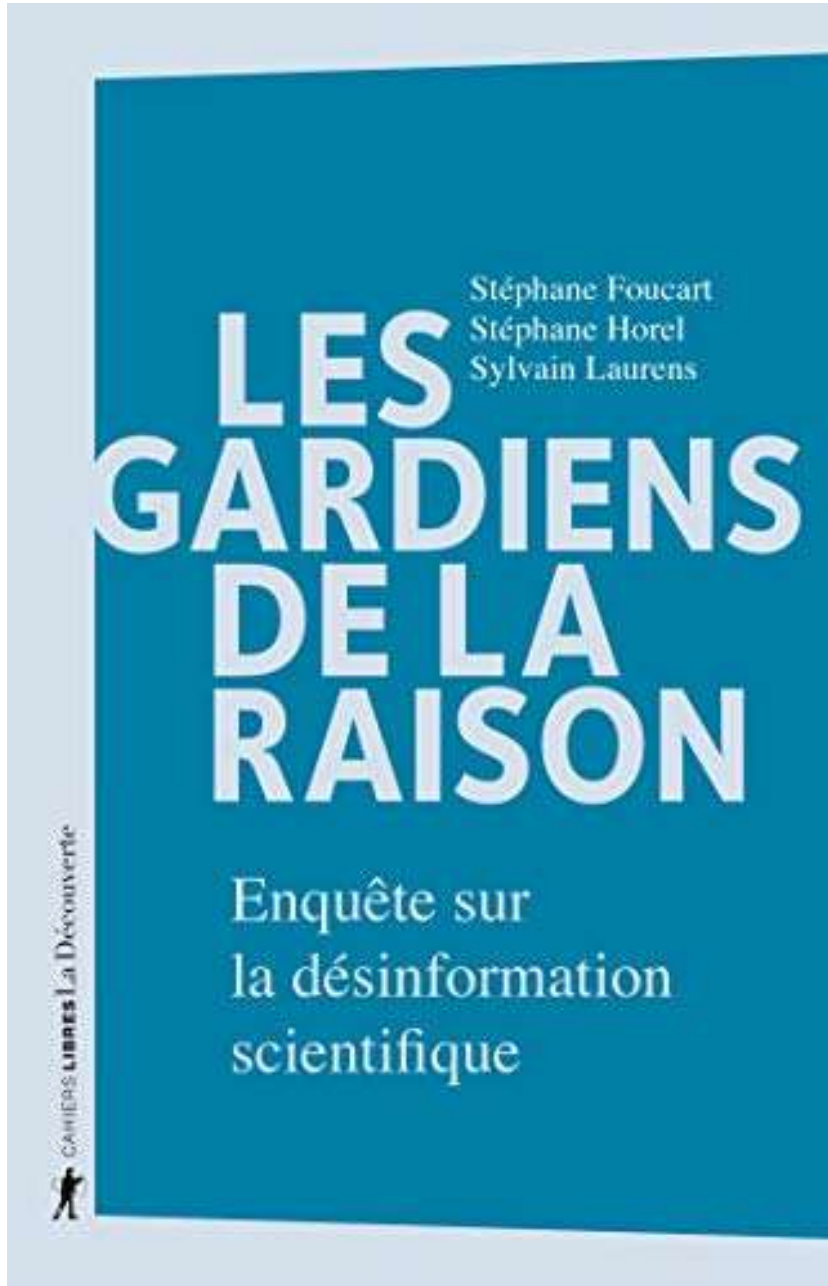
“Nearly half of Gradient’s articles that are peer-reviewed are published in two journals with strong ties to industry, *Critical Reviews in Toxicology* and *Regulatory Toxicology and Pharmacology*” [Gradient is the research services company enrolled by law firms]



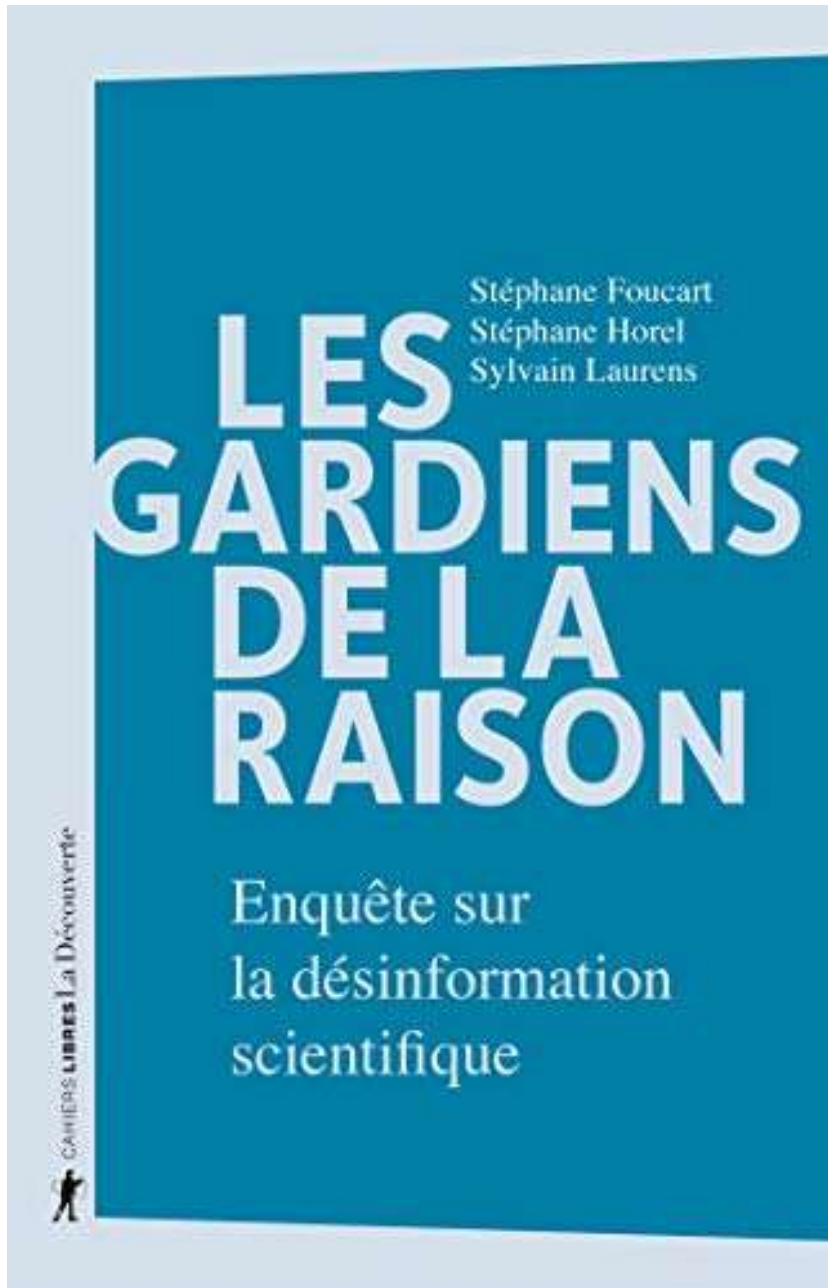
<http://www.publicintegrity.org/2016/02/08/19223/meet-rented-white-coats-who-defend-toxic-chemicals>



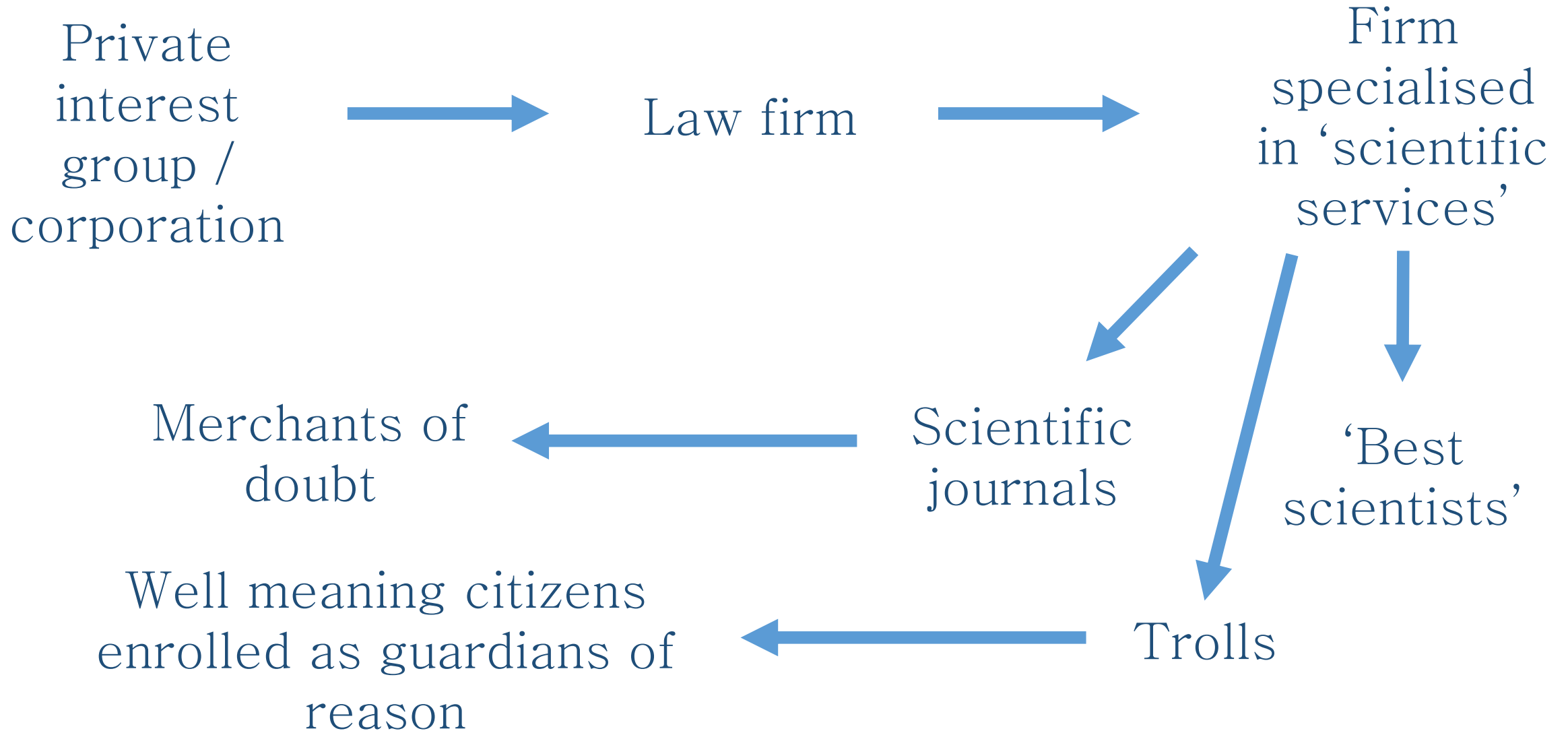
Well-meaning educators, scientific bloggers or micro-influencers, science associations are hijacked by corporate lobbyists to defend industrial positions on issues such as herbicides, genetically modified crops, nuclear energy, climate



A new frontier of lobbying, where the new game consists in colonizing the entire space of scientific intermediation.

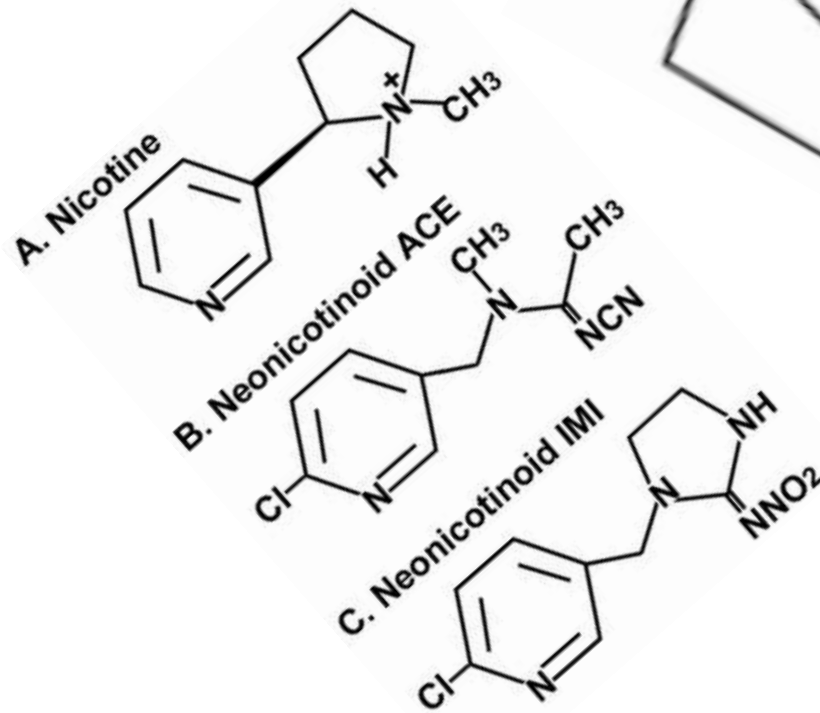


An army of self-proclaimed ‘fact checkers’ becomes mobilized in the defence of a neoliberal and conservative credo, posing as victims of an assault on science perpetrated by the purported enemies of reason

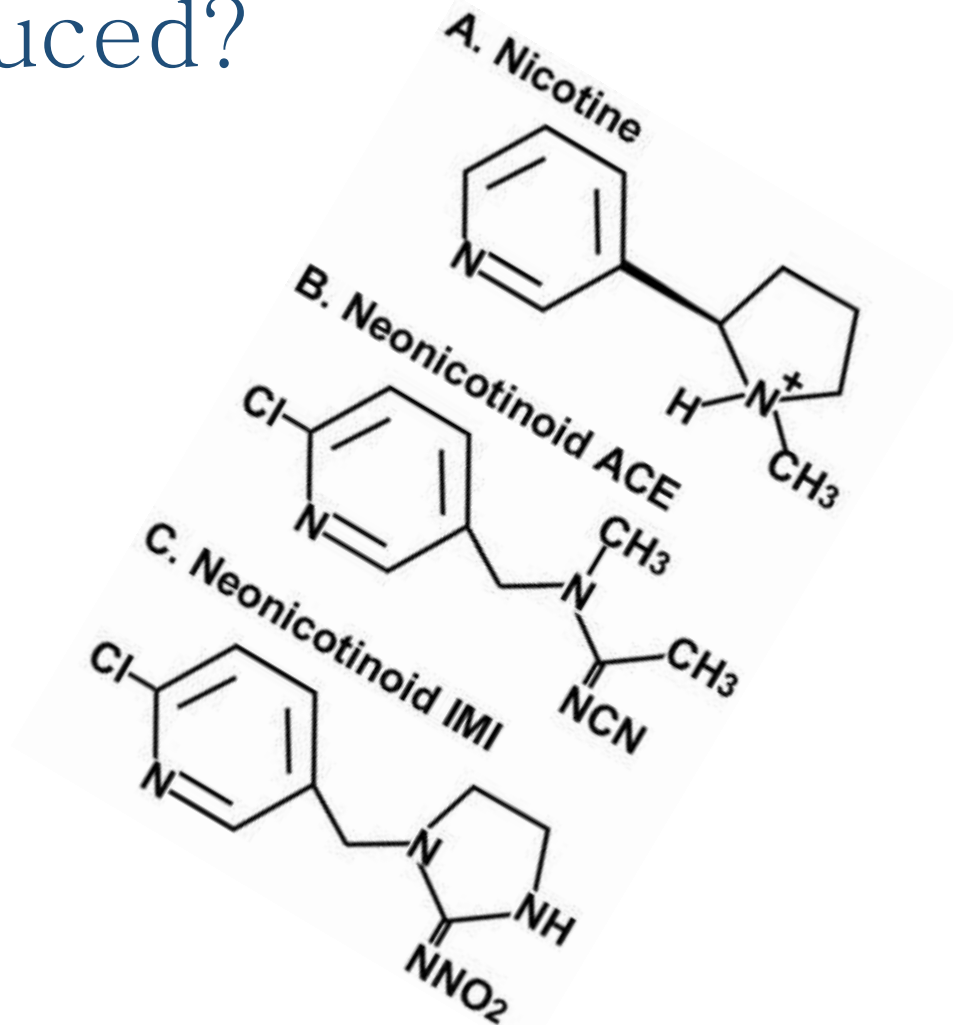


# The cases

1. Neonicotinoids: who sets the tests
2. The EU Science Advice Mechanism, using science to influence EU policy-making
3. Ethic washing; Ethics Guidelines for Trustworthy AI
4. Brussels Declaration
5. The innovation principle



1. Neonicotinoids: How can corporate power manage to influence the methodologies whereby evidence is produced?



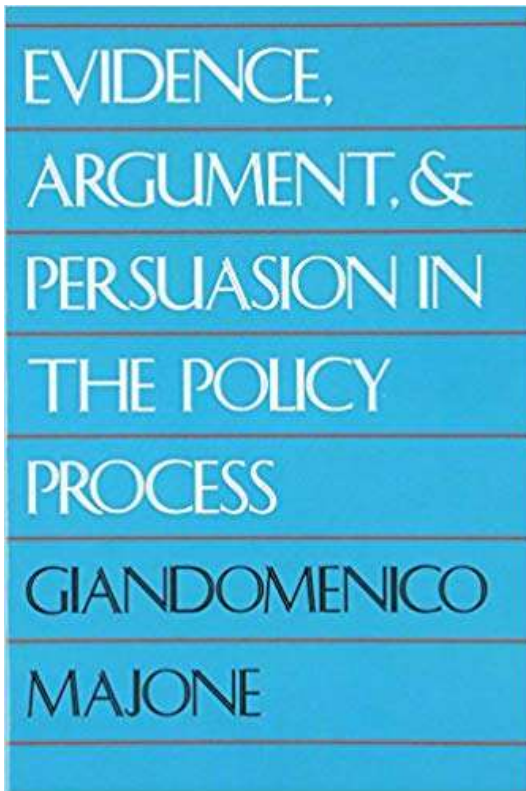
The battle over how to measure & over who should decide how to measure

Why? → The methodology is never neutral

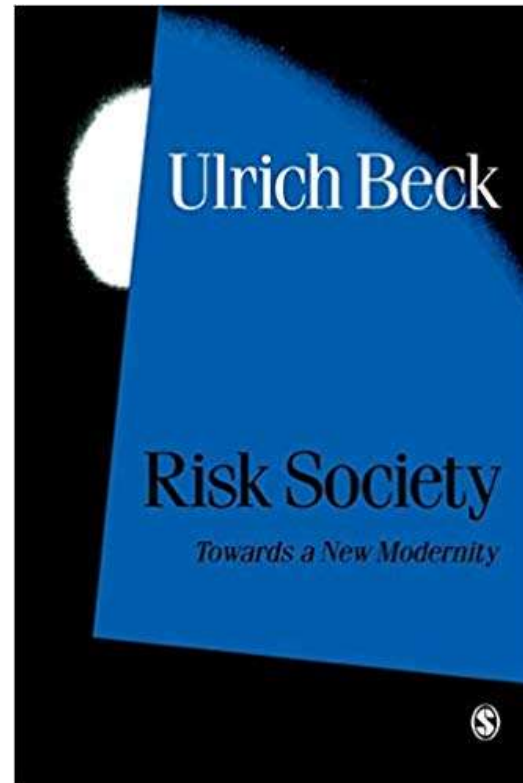
# From Ulrich Beck to Giandomenico Majone: the technique is never neutral



Ulrich Beck  
(1944 –2015)



1989



1992 (1986)



Environmental Science & Policy

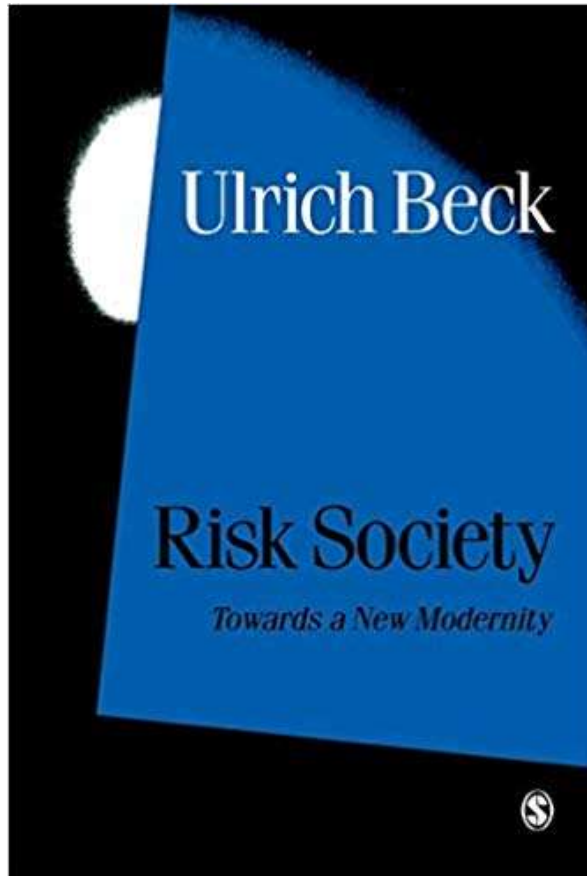
Volume 106, April 2020, Pages 87-98



The technique is never neutral. How  
methodological choices condition the  
generation of narratives for sustainability

Andrea Saltelli <sup>a, b</sup>  , Lorenzo Benini <sup>c</sup>, Silvio Funtowicz <sup>a</sup>, Mario Giampietro <sup>d, e</sup>, Matthias Kaiser <sup>a</sup>,  
Erik Reinert <sup>a, f</sup>, Jeroen P. van der Sluijs <sup>a, g, h</sup>

“It is not uncommon for political programs to be decided in advance simply by the choice of what expert representatives are included in the circle of advisers.”



1992 (1986)



Ulrich Beck  
(1944 –2015)

# Decline of pollinators (windshield effect)

The shocking collapse of insect populations hints at a global ecological meltdown

🐦 @GeorgeMonbiot

Fri 20 Oct 2017 12.11 BST

**Insects** Opinion

## Insectageddon: farming is more catastrophic than climate breakdown

*George Monbiot*



While the foraging area of bees may extend over up to 9 km away from the honeybees, and the impact of insecticides implies bioaccumulation and hence long term effects, **the prevailing measuring techniques held valid in regulation fail to detect the toxicity of these insecticides**



Jeroen van der Sluijs

Van der Sluijs, Jeroen P., Noa Simon-Delso, Dave Goulson, Laura Maxim, Jean-Marc Bonmatin, and Luc P Belzunces. 2013. “Neonicotinoids, Bee Disorders and the Sustainability of Pollinator Services.” *Current Opinion in Environmental Sustainability* 5 (3–4): 293–305.



Robinson, Claire, et al. 2018. “Ensuring a Higher Level of Protection from Pesticides in Europe: The Problems with Current Pesticide Risk Assessment Procedures in the EU – and Proposed Solutions. A White Paper Prepared for the Coalition Citizens for Science in Pesticide Regulation.” <https://doi.org/10.5281/ZENODO.2543743>.



The white paper reveals a jungle of conflicts of interests, loopholes, and sloppy regulation in the way pesticides are regulated in the EU

# Structural reasons for the EFSA and European Commission commitment to a ‘sound-science’?

- Commitment to the single market: the EC needs a centralized, standardized, risk assessment approach
- A pro-biotech agenda in the interest of EU growth and competitiveness

Zwanenberg, Patrick van. 2020. “The Unravelling of Technocratic Orthodoxy.” In *The Politics of Uncertainty*, edited by Ian Scoones and Andy Stirling, 58–72. Routledge

# Structural reasons for the EFSA and European Commission commitment to a ‘sound-science’?

- A fear that abandoning a standardized approach may open the road to endless deconstruction, leading to more burdensome regulations

Zwanenberg, Patrick van. 2020. “The Unravelling of Technocratic Orthodoxy.” In *The Politics of Uncertainty*, edited by Ian Scoones and Andy Stirling, 58–72. Routledge

# Structural reasons for the EFSA and European Commission commitment to a ‘sound-science’?

- A latent form of scientism among officials who sincerely subscribe to a vision of science’s neutrality – so that critical voices must be either ‘hidden interests’ or ‘anti-science’

Zwanenberg, Patrick van. 2020. “The Unravelling of Technocratic Orthodoxy.” In *The Politics of Uncertainty*, edited by Ian Scoones and Andy Stirling, 58–72. Routledge

Wynne, Brian. 2014. “Further Disorientation in the Hall of Mirrors.” *Public Understanding of Science*. SAGE PublicationsSage UK: London, England.

## 2. The EU science advice mechanism

Chief Science Advisor – a "constant target for lobbying", but not well equipped to deal with it



### **The EU Chief Scientific Adviser and endocrine disrupting chemicals**

**New evidence the role's existence enabled undue influence  
at the top of the European Commission**



Ann Glover  
Chief Scientific  
Adviser to the  
President of the  
European Commission  
from 2012 to 2014

### 3. Ethic washing: Guidelines for AI. Are scientific ethical committees a venue lobbyists?



Thomas Metzinger

## 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>



# 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

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”

## 4. The 2017 Brussels Declaration




- Promoted by World Science Forum
- Journal Nature (January 2017)
- Announced by (AAAS, February 2017)
- Events in 2012–2016, 300 individuals from 35 countries

Published: 19 January 2017

Brussels Declaration


**nature**

**Twenty-point plan for science policy**

Michel Kazatchkine, Julian Kinderlerer & Aidan Gilligan 

*Nature* **541**, 289(2017) | [Cite this article](#)

**138** Accesses | **1** Citations | **19** Altmetric | [Metrics](#)



ADVANCING SCIENCE, SERVING SOCIETY

- Attended by the elite of EU science governance:  
president of ERC, Former Chief Science Adviser to  
EC President, European Commission's cadres,  
Lancet's Richard Horton...



Then someone pulls  
the alarm



THE LANCET

Volume 396 Number 10253 Pages 731-768 September 13-18, 2020

www.thelancet.com

Richard Horton laments his name, photo, and one of his statements being dragged into a document “whose intention seems to be to undermine the value of science in policy making, and was created with the input of industries that are anathema to health”

# What had happened?

The event had an important presence of alcohol and tobacco lobbies



Source: <https://www.gr8ambitionz.com/>

What is written in the declaration?

*Scientists must learn to use established communication channels for providing policy advice more effectively and be less aloof and perhaps less arrogant.*



*Scientists need to recognise that they are advocates with vested interests too—in their case, in their own science.*



*Industry is an investor in knowledge generation and science and has every right to have its voice heard.*



*Nevertheless, industry is too often perceived as suffering from fatal conflicts of interest and its views are therefore dismissed.* 🤔

*In fact, commercial conflicts of interest are fairly easy to deal with if they are properly declared and the relationship between the science and the marketing made explicit.* 🤔

*Ideological, personal, or academic conflicts of interest, on the other hand, are much harder to detect or deal with.*



*... the precautionary principle must not be misused in a way that impedes technological progress towards reducing risk or public harms.*





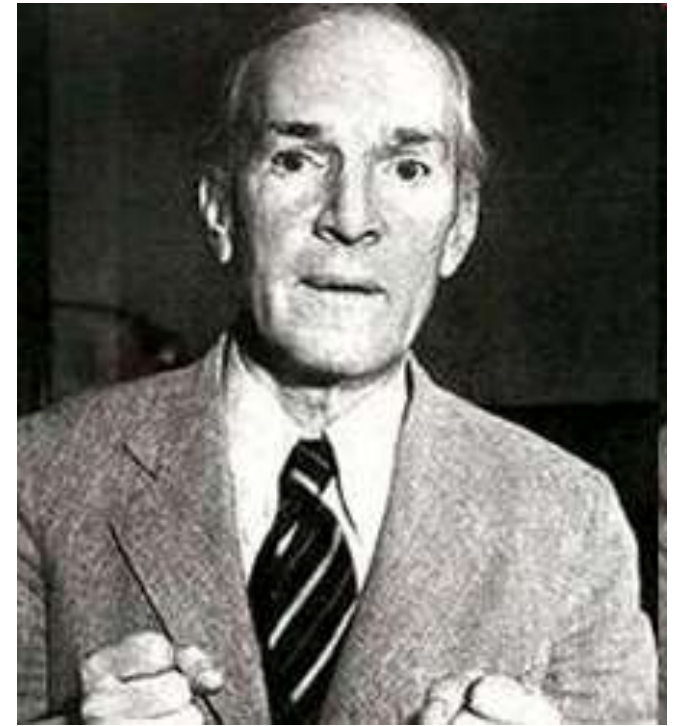
Lisa A. Bero

Why are  
scientists so  
gullible?

Lisa A. Bero, “Ten tips for spotting industry involvement in science policy,” Tob. Control, p. tobaccocontrol-2018-054386, Jun. 2018.

A possible answer:

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



Upton Sinclair

# 5. Innovation principle: How can corporate influence lead to the creation of a new EU principle?



[Home](#) > [News](#) > [Innovation principle makes EU laws smarter and future-oriented, experts say](#)

NEWS | 25 November 2019 | Brussels, Belgium | Research and Innovation

## **Innovation principle makes EU laws smarter and future-oriented, experts say**

# The innovation principle



**Ensuring EU legislation supports innovation**

## **What is the Innovation Principle?**

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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.

“In 2013, the European Risk Forum, with the support of CEOs from twenty-two of the world's largest corporate investors in innovation, launched the Innovation Principle (IP).



## **The European Regulation and Innovation Forum**

**For a sustainable future through good quality regulation and innovation**

Holland, Nina. 2018. “The ‘Innovation Principle’ Trap.” Corporate Europe Observatory. 2018.  
<https://corporateeurope.org/en/environment/2018/12/innovation-principle-trap>

“Actively supported by BusinessEurope and the European Roundtable of Industrialists, endorsed by the European Council and supported by successive EU presidencies, it has achieved significant prominence within the EU institutions”



## **The European Regulation and Innovation Forum**

**For a sustainable future through good quality regulation and innovation**

Holland, Nina. 2018. “The ‘Innovation Principle’ Trap.” Corporate Europe Observatory. 2018.  
<https://corporateeurope.org/en/environment/2018/12/innovation-principle-trap>

**BUSINESSEUROPE**



**European Round Table  
for Industry**



## **The European Regulation and Innovation Forum**

**For a sustainable future through good quality regulation and innovation**

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. 10.1080/17579961.2018.1455023.

“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.

This is not the end of the story, as ERF now chose to ‘energize’ the proportionality principle with ‘Four conditions’



## **PROPORTIONALITY PRINCIPLE AND THE MANAGEMENT OF RISK**

### **HIGHLIGHTS NOTE 12**

Source: [https://www.eriforum.eu/uploads/2/5/7/1/25710097/erif\\_highlights\\_12\\_-\\_proportionality\\_principle.pdf](https://www.eriforum.eu/uploads/2/5/7/1/25710097/erif_highlights_12_-_proportionality_principle.pdf), published June 2020

The principle of proportionality is subject to four conditions:

- Importance of objective—the intended goal, theoretical or practical, must be important;
- Relevance of means—the means, such as treatment or a drug, must bring about or at least help to achieve the goal;
- Most favourable option—there is no other less controversial or risky means to achieve the goal;
- Non-excessiveness—the means used should not be excessive in relation to the intended goal.

Source:

[https://www.eriforum.eu/uploads/2/5/7/1/25710097/erif\\_highlights\\_12\\_-\\_proportionality\\_principle.pdf](https://www.eriforum.eu/uploads/2/5/7/1/25710097/erif_highlights_12_-_proportionality_principle.pdf),  
published June 2020

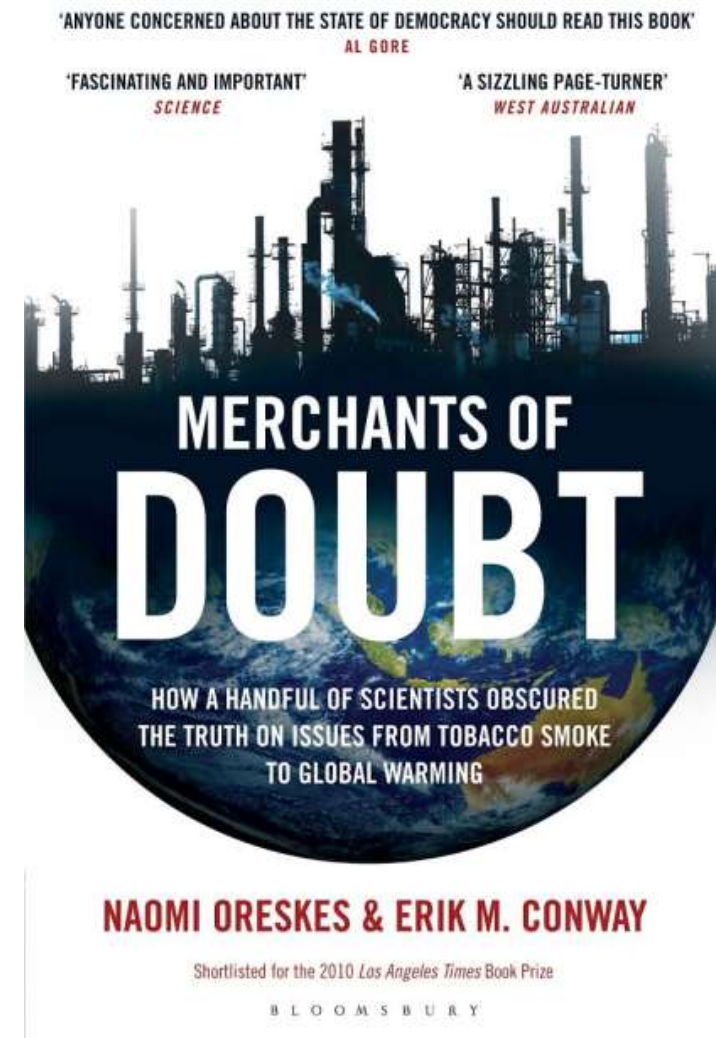


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**HIGHLIGHTS NOTE 12**

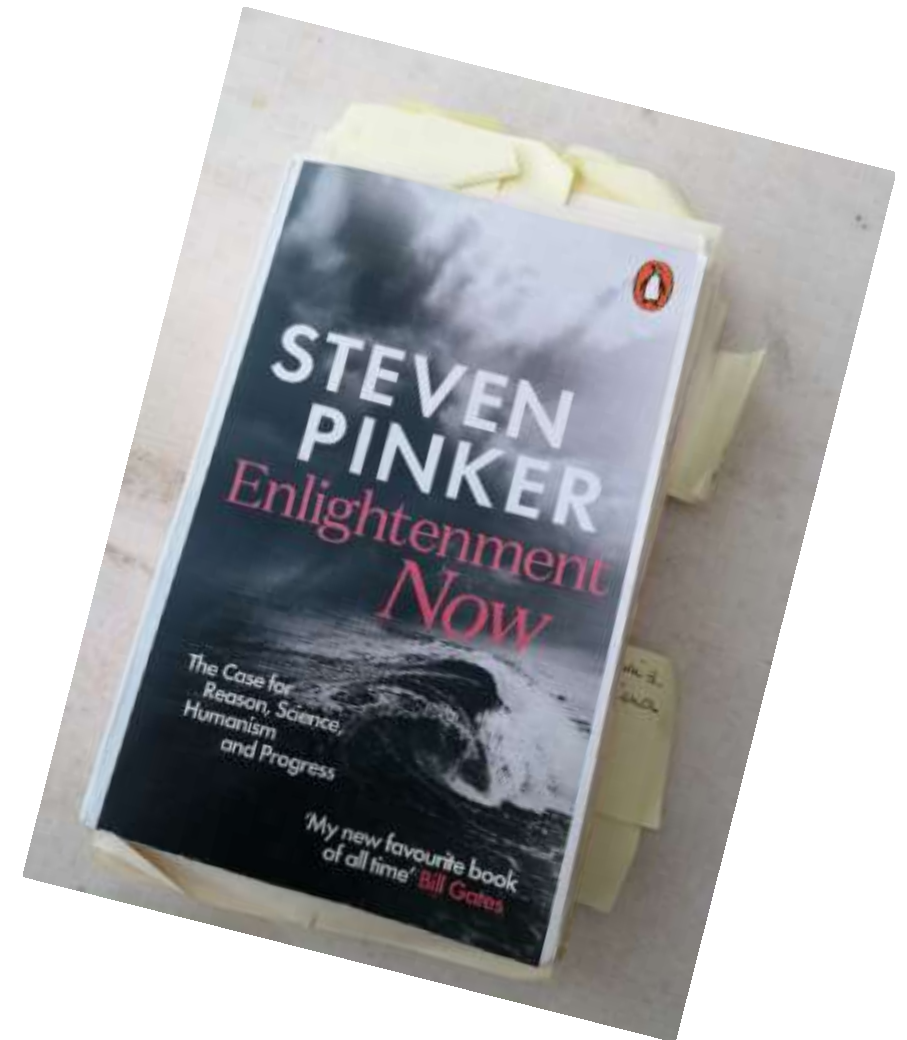
What conditions have made it possible for the frontier of regulatory capture to adopt strategies so *rapides et inédites* (Foucart et al, 2020)

1) Corporate reaction to the unmasking of the strategy of “Merchant of doubts”



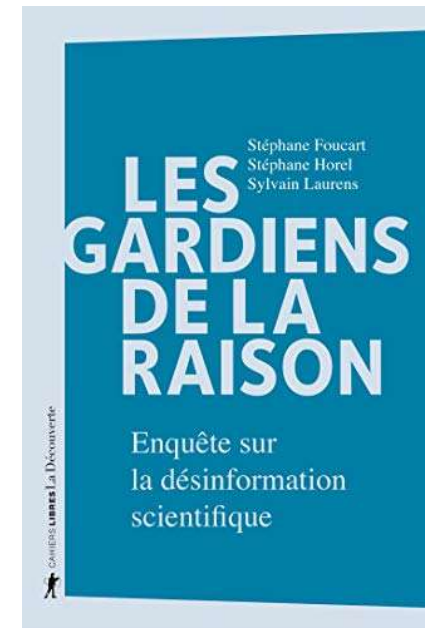
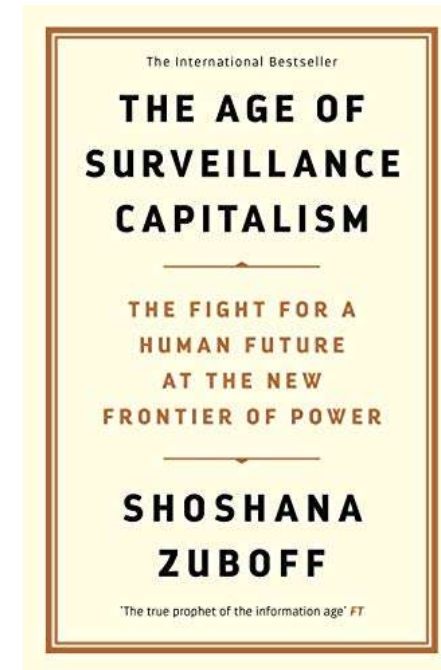
What conditions have made it possible for the frontier of regulatory capture to adopt strategies so *rapides et inédites*

2) A cultural and political climate, 'cosmopolitan or liberal or classical liberalism' which claims for itself the control and the authority of science; doubters can be labelled as enemies of science or victims of 'cultural pessimism' (Pinker 2018).



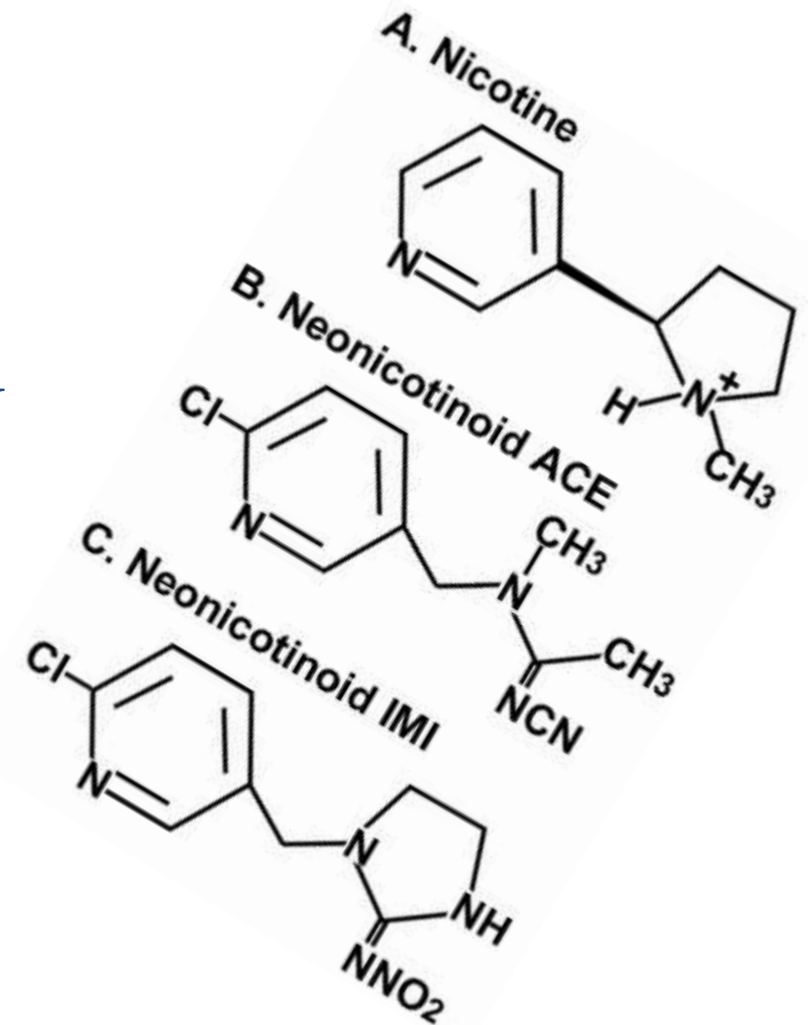
What conditions have made it possible for the frontier of regulatory capture to adopt strategies so *rapides et inédites*

3) New powerful instruments such as the use of AI and algorithms in combination with cognitive psychology and the new social media to influence the behaviour of consumers / voters



# An epistemic ladder?

1) Contesting the evidence or influencing the methods whereby the evidence is produced → Epistemic strategy



# An epistemic ladder?

2) Delegitimising or appropriating the role of the institutional settings which produces the evidence → Institutional strategy



# An epistemic ladder?

3) Changing the framework or the worldview, to the effect that regulation is undesirable → Political strategy



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Case	Strategy	Resources	Target
Neonicotinoids	<p><b>Epistemic</b></p> <p>Invalidating the inference or influencing the methods whereby the evidence is produce</p>	<p>Specialised firms or agencies, ‘merchants of doubt’, defenders of ‘sound epidemiology’, captured scientific journals</p>	<p>Science quality criteria and epistemology</p>

Case	Strategy	Resources	Target
<p>The EU science advice mechanism</p> <p>Ethics washing: Guidelines for AI</p> <p>Brussel declaration</p>	<p><b>Institutional</b></p> <p>Delegitimising the institutional settings which produces the evidence or otherwise 'colonising' it</p>	<p>Science experts able to populate scientific ethical committees and to influence the agenda of science governance</p>	<p>Science governance</p>

Case	Strategy	Resources	Target
Innovation principle	<p><b>Political</b></p> <p>Changing the framework or the worldview in the context of which the evidence –or the very idea of regulation -are relevant or desirable</p>	<p>Intellectuals, policy brokers, disciplines (cognitive psychology and behavioural sciences), defenders of science (organizations and individuals), trolls and bots for astroturfing</p>	<p>Cultural capture</p> <p>Relation between science and society</p>



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C o a u t h o r s

# Readings

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# The End



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