





### Climate's clima

Andrea Saltelli Open Evidence Research, Open University of Catalonia

Course VIT212 Klima: Hva vet vi? Hva bør vi gjøre? Bergen, September 15, 2020

#### Where to find this talk: www.andreasaltelli.eu



HOME

ABOUT ME

**PUBLICATIONS** 

**NEWS & VIDEOS** 

RESOURCES

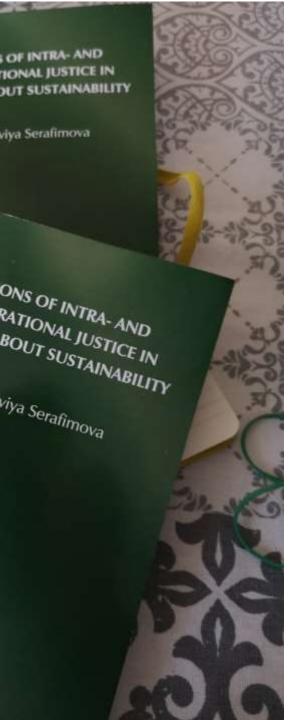






Edited by Silviya Serafimova, with chapters from SVT's Gunnar Skirbeck, Ragnar Fjelland and others

http://www.andreasaltelli.e u/file/repository/Serafimov aBook.pdf





Chapter 3, A Climate of dialogue, with Paul-Marie Boulanger

We agree on a lot of controversial issues (e.g. on vaccines), but we disagree on the relative importance of climate change on a scale of impending calamities.



The present dialogue explores this disagreement in a style which remains – to the best of the authors' capacity, pacated.



Source: pngtree.com/



Source: https://www.123rf.com/





Source Vectorstock:

### Paul-Marie



# From concern to alarm, from alarm to panic?



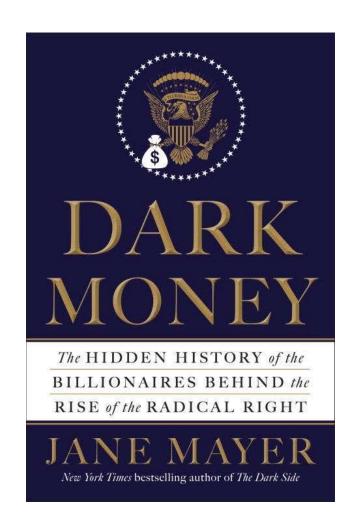


Greta Thunberg

## 'I want you to panic': 16-year-old issues climate warning at Davos - video

https://www.theguardian.com/science/video/2019/jan/25/i-want-you-to-panic-16-year-old-greta-thunberg-issues-climate-warning-at-davos-video

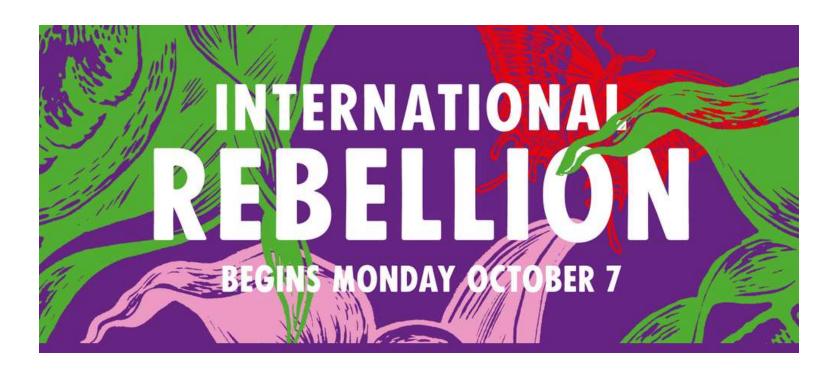
Main narratives: science as victim of big oil; if our lifestyles have not changed yet it is because of the so-called deniers (esp. in the US) & their dark money



The war on climate of the Koch brothers: chapter 8 of Dark Money

Some excerpts of chapter 8, The Fossils, here: http://www.andreasaltelli.eu/file/repository/Chapter\_8sr.pdf

Vandana Shiva, Naomi Klein, Noam Chomsky, and others call for citizens to organise for climate 'emergency'

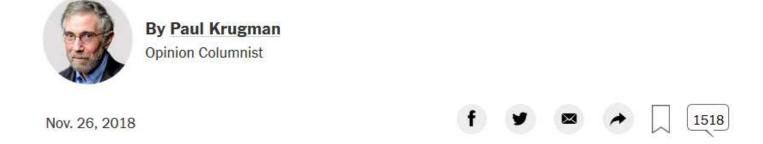


https://rebellion.earth/

Opinion

### The Depravity of Climate-Change Denial

Risking civilization for profit, ideology and ego.



https://www.nytimes.com/2018/11/26/opinion/climate-change-denial-republican.html

Green New Deal - Joseph Stiglitz: "It is better to leave a legacy of financial debts, which our children can somehow manage, than to hand down a possibly unmanageable environmental disaster"



Joseph Stiglitz

Joseph E. Stiglitz, "From Yellow Vests to the Green New Deal," Project Syndicate, Jan-2019.



NEWS - 18 SEPTEMBER 2019

Emma Marris

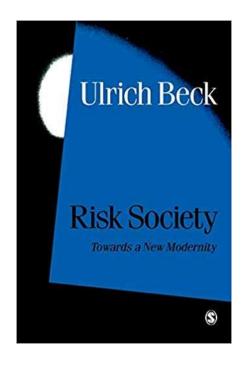
## Why young climate activists have captured the world's attention

As the movement prepares for a massive global protest, researchers break down why its message is gaining ground.

"Whatever they decide, nations will have to reckon with some difficult numbers that will ultimately determine whether the world can avoid the rapidly approaching climate meltdown"



Ulrich Beck (1944 -2015)



1992 (1986)

"Scientists act as if they held a lease on truth, and they must do this for the outside world, because their entire position depends on it [...]

what they are doing is changing the conditions of social life and hence making policy by their own means"



# Is this all science's responsibility?

It is not the scientists; no other issue – bar perhaps vaccines, has been so controversial in society.



#### **Futures**

Volume 115, January 2020, 102491



Technoscience, policy and the new media. Nexus or vortex?

Andrea Saltelli a, b ≈ Ø, Paul-Marie Boulanger © Ø

Show more 🗸

IPCC on the other hand, with its emphasis on "consensus" – in violation of existing Mertonian norms – has perhaps contributed more harm than doubt.

Robert K. Merton (1910–2003)

Banishing organized skepticism from science IPCC has left room for unorganized skepticism in the media turning the dispute into an almost religious one

Letters Sun 26 Aug 2018



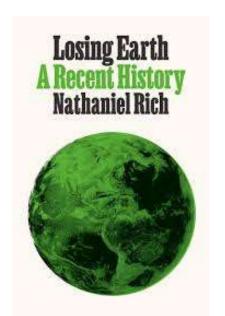
Climate change is real. We must not offer credibility to those who deny it

If 'balance' means giving voice to those who deny the reality of human-triggered climate change, we will not take part in the debate, say **Jonathon Porritt, Caroline Lucas, Clive Lewis** and 57 other writers, politicians and academics



▲ A dry cornfield in Ahlen, Germany, where harvests have suffered as a result of this year's extreme drought.

All that we know now was already well known in 1979, and in the ensuing decade we lost our chance to tame the problem (Nathaniel Rich)









Author(s): Evelyn Fox Keller

Source: Spontaneous Generations: A Journal for the History and Philosophy of

Science, Vol. 5, No. 1 (2011) 19-26.

Published by: The University of Toronto

DOI: 10.4245/sponge.v5i1.15165



The real problem is the media's obsession with 'balance' which over-represent the positions of the skeptics



# Climate: a convenient distraction?

Perhaps we could change our consumption pattern ourselves –





- irrespective of what deniers and president Trump choose to do WHO: 7 million people die every year of atmospheric pollution (outdoor and indoor)





→ 7,000,000
reasons to reduce
the consumption of
fossil fuels without
awaiting the climatic
Armageddon

A state of exception?

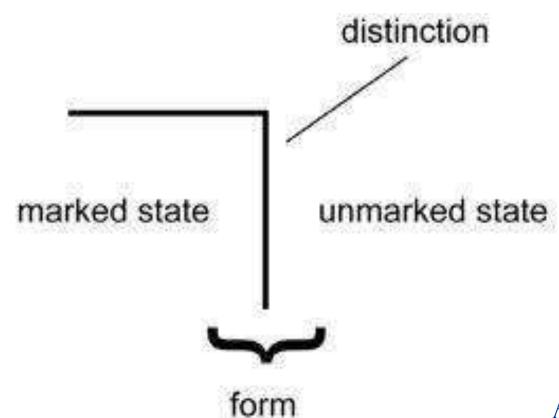
Increasing temperatures, sea levels, hurricanes, forest fires, climatic migrants...

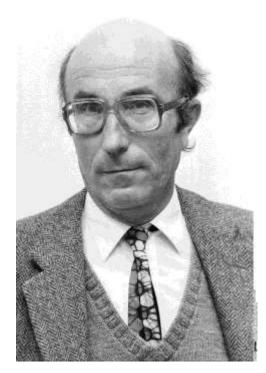




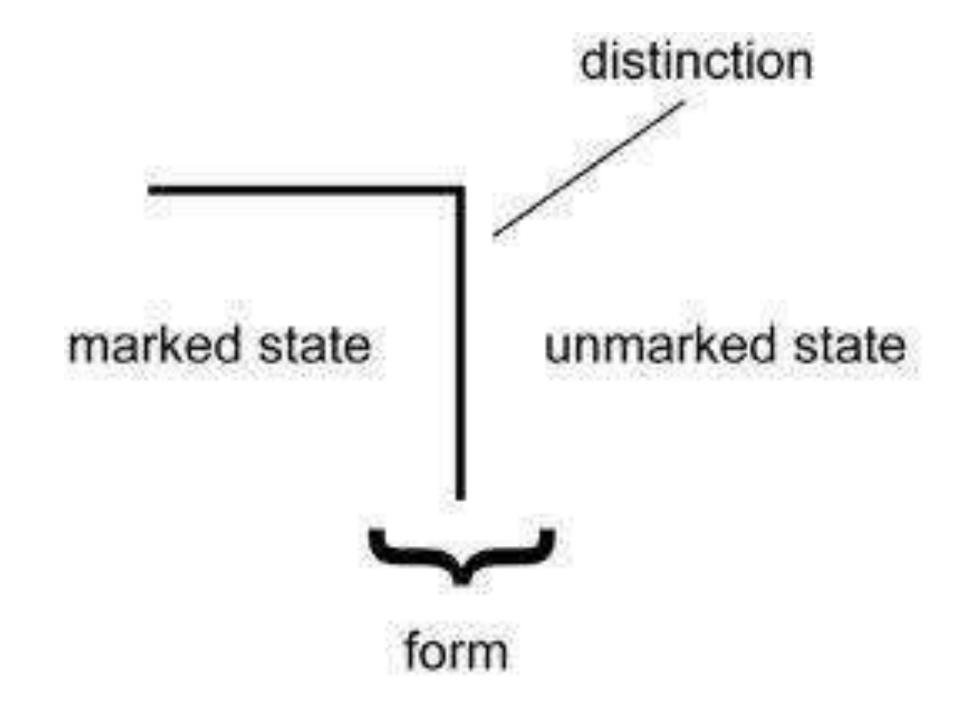
Or a convenient



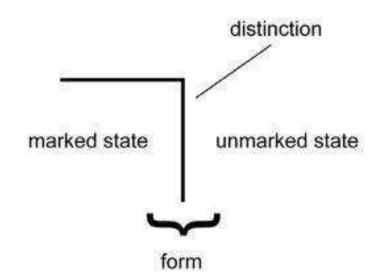




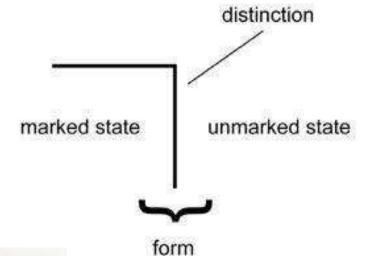
All observations require a distinction Niklas Luhmann, (1926–1998)



Instead of fostering ecological sensitivity, a status of climatic exception boxes ecological problem into a single planetary container, where an odourless and colourless gas slowly increases the temperature of the planet



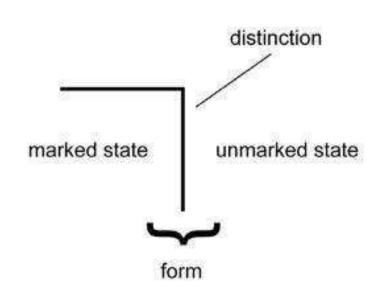
This vision risks obscuring the messier aspects of our impact on the planet





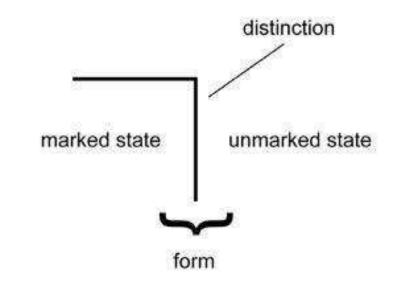
Since we need to fight all forms of fossil fuel we cannot fight the dirtiest, from tar sands to shale gas

fracking





Since we take up a fight with fossil fuels corporations we can fight less the agrochemical ones



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





Financialization of the economy, rampant inequality, Bolsonarization of democracies, incumbent geopolitical transformation...

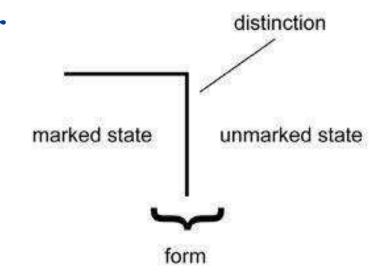


Not a threat to future generations, but to the present youth, cornered between the 4<sup>th</sup> industrial revolution and the neoliberal project to "render as many people as superfluous as possible" (Achille Mbembe)



https://www.newframe.com/thoughts-on-the-planetary-an-interview-with-achille-mbembe/

The climatic day of reckoning assuages our anxieties about the present by projecting the threat into a convenient not-soclose-to-affect-me future



# A Baconian idol of the theatre?

"Idols which have immigrated into men's minds from the various dogmas of philosophies, and also from wrong laws of demonstration."

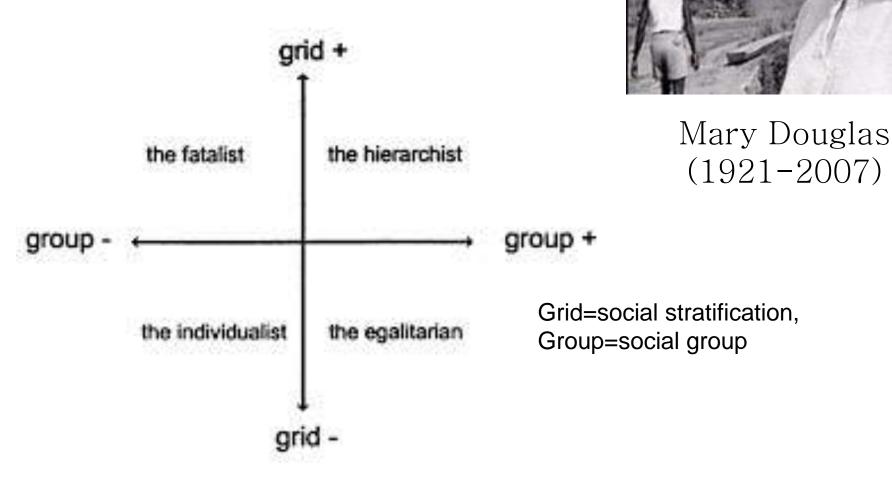


Francis Bacon (1561–1626)



# A different take on all that

Let's 'help' Luhmann with Mary Douglas cultural theory of risk 'adapted':



Cultural theory's style	Long ter	Long term	
Climate!		Societal collapse!	
Environment Pollution!		Societal contradictions	
	Short term		
Long term		Short term	
Environment	Society		
Luhmann's style	l		

### New axes;

x=environment/society

y=short/long term

All representations are equally legitimate, so depending upon where one stands in…

Society  $\leftarrow \rightarrow$  Environment

Short term ←→ Long term

... different sensibilities will play out!

And there is no point in opposing one mode of observation to another, as they are all equally legitimate













··· the discussion continued on the numbers of decarbonisation, the urgency of action and the role of public intellectuals ···





If you find this conversation interesting check ...

### Pandemic Luhmann

13 Pages • Posted: 30 Apr 2020



### Paul-Marie Boulanger

Institut pour un Développement Durable (IDD)

#### Andrea Saltelli

University of Bergen

Date Written: April 27, 2020

Ecomodernist/technooptimist narratives: the case of geoengineering Techniques for carbon dioxide removal (CDR);

BECCS (bioenergy with carbon capture and storage);

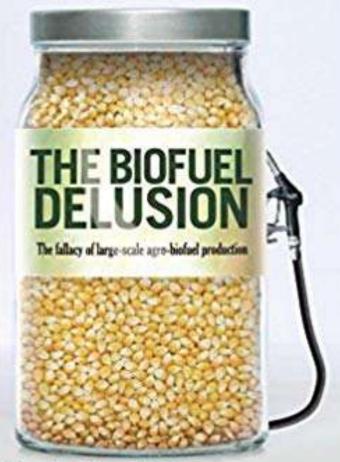
Same trajectory as biofuels?

# 10% biofuel in transport by 2020 (EU target) also to abate CO2 emissions

- → > food prices
- → > deforestation
- → < biodiversity
- → > CO2 emission because of fertilizers (nitrous oxide)
- → As much energy in as out!

Copyrighted Material



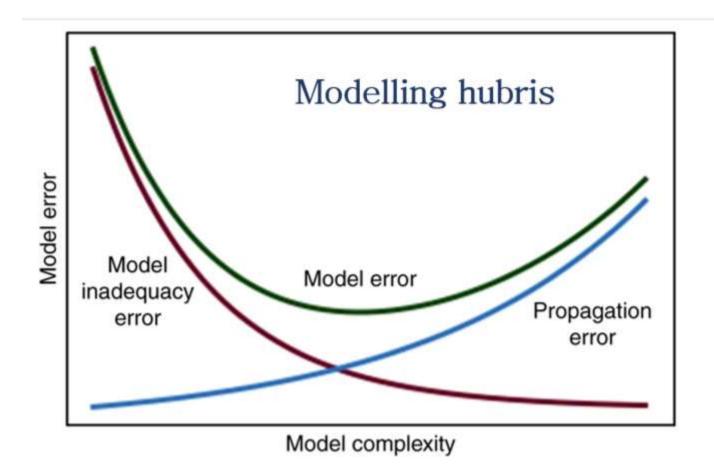


### Mario Giampietro Kozo Mayumi

Forewords by Vacley Smil and Jerome Royetz

Copyrighted Material

### More on modelling



POLICY COMMENT - 24 JUNE 2020 Five ways to ensure that models serve society: a manifesto Pandemic politics highlight how predictions need to be transparent and humble to invite insight, not blame. Illustration by David Parkins nature



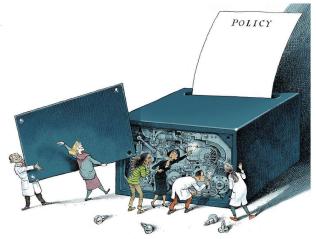
### Five ways to ensure that models serve society: a manifesto

Pandemic politics highlight how predictions need to be transparent and humble to invite insight, not blame.

Andrea Saltelli , Gabriele Bammer, Isabelle Bruno, Erica Charters, Monica Di Fiore, Emmanuel Didier, Wendy Nelson Espeland, John Kay, Samuele Lo Piano, Deborah Mayo, Roger Pielke Jr, Tommaso Portaluri, Theodore M. Porter, Arnald Puy, Ismael Rafols, Jerome R. Ravetz, Erik Reinert,

Daniel Sarewitz, Philip B. Stark, Andrew Stirling, Jeroen van der Sluijs & Paolo Vineis

Jeroen van der Sluijs among the authors



### Mind the assumptions

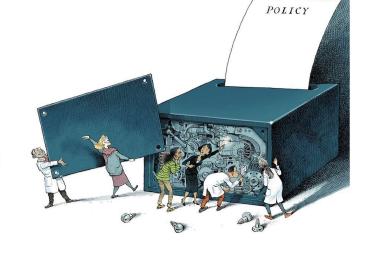
Assess uncertainty and sensitivity

### Mind the hubris

Complexity can be the enemy of relevance

### Mind the framing

Match purpose and context



### Mind the consequences

Quantification can backfire.

### Mind the unknowns

Acknowledge ignorance

#### SUPPLEMENTARY INFORMATION

>260 references

### Mind the assumptions

Assess uncertainty and sensitivity

··· assumptions that are reasonable in one situation can become nonsensical in another···

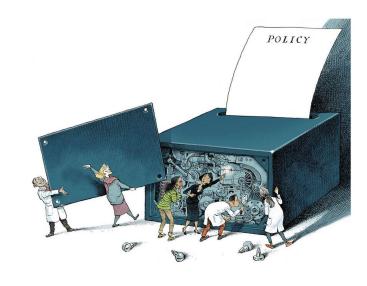
··· models require input values for which there is no reliable information.



### Mind the assumptions

Assess uncertainty and sensitivity

··· to mitigate these issues: perform global uncertainty and sensitivity analyses ···



This often reveals that the uncertainty in predictions is substantially larger than originally asserted

The manifesto comes with a long supplementary material file (>260 references) where PNSinspired methods are described: POLICY NUSAP and Sensitivity Auditing

### More reading



### Energy Research & Social Science

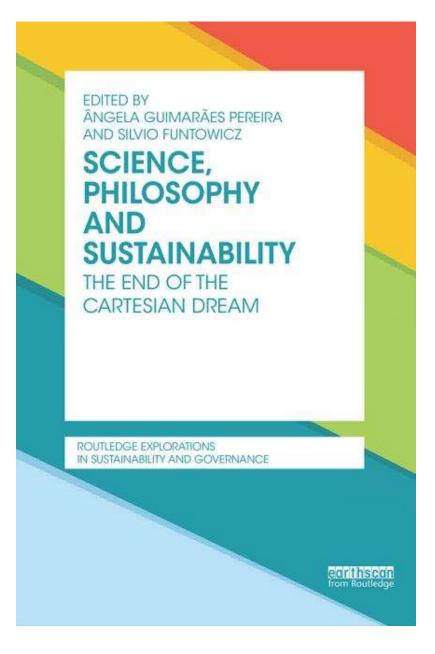


Volume 59, January 2020, 101279

Original research article

Socio-technical discourses of European electricity decarbonization: Contesting narrative credibility and legitimacy with quantitative story-telling

Ansel Renner <sup>a</sup> ≈ ™, Mario Giampietro <sup>a, b</sup>



### 7 Geoengineering dreams

Paula Curvelo

The Cartesian mechanistic view of nature still is still dominant in techno scientific framing of climate change



# 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

#### DOUBT HAS BEEN ELIMINATED1

### Roger Strand

In a speech before the United Nations (UN) Commission on Sustainable Development in 2007, Gro Harlem Brundtland, the UN Secretary-General's Special Envoy on Climate Change, memorably spoke the following words:



## A critique of computing 'increased crime rate' due to climate change to the year 2100



### Climate Models as Economic Guides

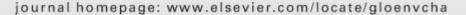
### Scientific Challenge or Quixotic Quest?

The uncertainties associated with mathematical models that assess the costs and benefits of climate change policy options are unknowable. Such models can be valuable guides to scientific inquiry, but they should not be used to guide climate policy decisions.



Contents lists available at ScienceDirect

### Global Environmental Change





Sensitivity analysis didn't help. A practitioner's critique of the Stern review

Andrea Saltelli\*, Beatrice D'Hombres

Joint Research Centre, Institute for the Protection and Security of the Citizen, Ispra, Italy

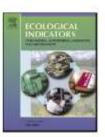
A critique of both the Stern review of the impact of climate change and of its refutation



Contents lists available at ScienceDirect

### **Ecological Indicators**





#### Footprints to nowhere





b Institute for the Protection and Security of the Citizen (IPSC), The European Commission, Joint Research Centre, TP 361, 21027 Ispra, VA, Italy



### Highlights

- The EF is inconsistent with its stated purpose of measuring demand on ecosystems.
- The EF depends mostly from a dimensionally flawed energy emissions assessment.
- The EF is optimistic at the global scale and policy-misleading at the local one.
- One cannot accept EF's flaws on the ground that the EF has normative virtues.
- EF's rhetoric trivializes bio-economics and muddles the sustainability debate.

Catalan Institution for Research and Advanced Studies (ICREA), Passeig Lluís Companys, 23, 08010 Barcelona, Spain

### The End



@andreasaltelli

### The Next Genocide

By TIMOTHY SNYDER SEPT. 12, 2015

"New Haven — BEFORE he fired the shot, the Einsatzgruppe commander lifted the Jewish child in the air and said, "You must die so that we can live." As the killing proceeded, other Germans rationalized the murder of Jewish children in the same way: them or us."

The New York Times

### The Next Genocide

By TIMOTHY SNYDER SEPT. 12, 2015

"Hitler spread ecological panic [...] the United States has done more than any other nation to bring about the next ecological panic [...] deniers [...] intellectual stance that is uncomfortably close to Hitler's."

The New York Times