

Thoughts for the workshop “Engaged Social Studies of Modelling”

<https://khk.rwth-aachen.de/event/workshop-engaged-social-studies-of-modelling/>

Andrea Saltelli

Seminar in Aachen, Käte Hamburger Kolleg:
Cultures of Research



BARCELONA
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Models and the common good ☆

Andrea Saltelli

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Models and the common good

A short analysis of norms and counter-norms in modelling, discussing how models may misuse their epistemic authority for reasons of occasion, opportunity and interest. Outline: Narratives and counter-narratives, State of exception, Seeking Cinderella, Reformation



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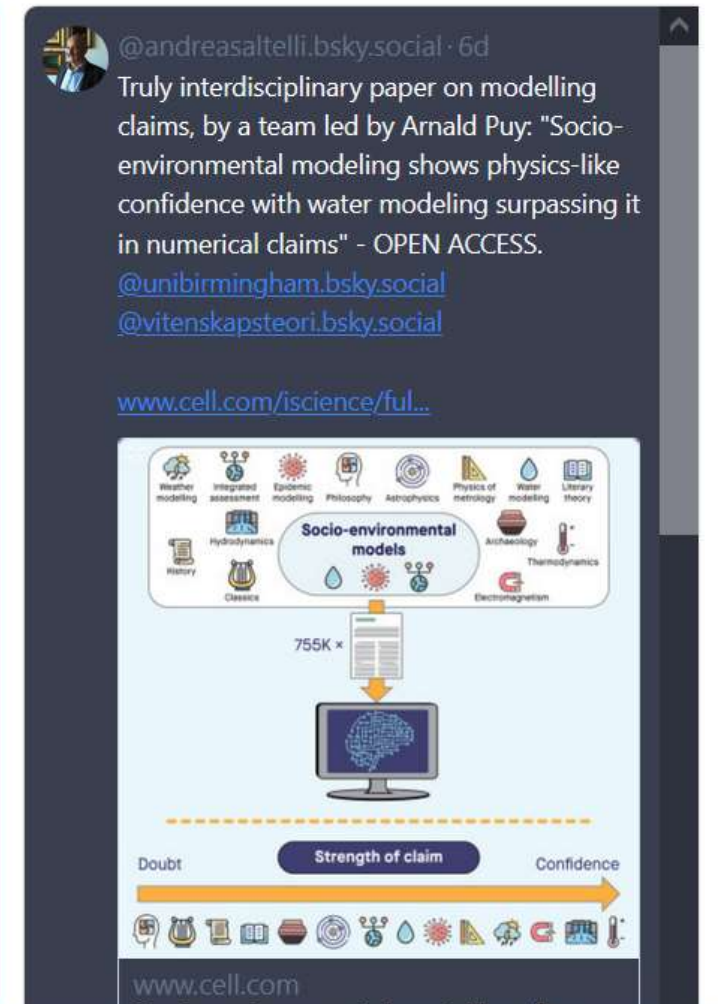
Ranking the rankers. An analysis of science-wide author databases of standardised citation indicators

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Ranking the Rankers

Ranking the Rankers? We investigate using global sensitivity analysis the properties of the science-wide author databases' standardised citation indicators produced

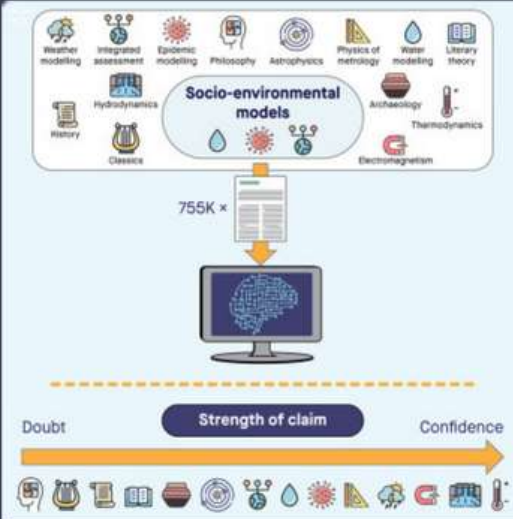


@andreasaltelli.bsky.social · 6d

Truly interdisciplinary paper on modelling claims, by a team led by Arnald Puy. "Socio-environmental modeling shows physics-like confidence with water modeling surpassing it in numerical claims" - OPEN ACCESS.

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755K ×

Doubt Strength of claim Confidence

www.cell.com

More sociology of models would help ... whom?

- Risk of preaching to the choir in a political economy of science dominated by journals
- Societal polycrisis where science plays a major role
- Modellers have interests, expediency and convenience
- Sociologists' message orthogonal to the 'party line'
- Sociology of models under-explored (versus Stats, algorithms...)

Article | [Open access](#) | Published: 06 May 2023

What can mathematical modelling contribute to a sociology of quantification?

[Andrea Saltelli](#)  & [Arnald Puy](#)

Humanities and Social Sciences Communications **10**, Article number: 213 (2023) | [Cite this article](#)

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Reformation in the Church of Science. How the truth monopoly was broken up

Saving the Real

Andrea Saltelli & Daniel Sarewitz on why the 95 THESES are back

End of truth of end of science's monopoly?

Like the catholic church at the time of Luther versus monk Pretzel

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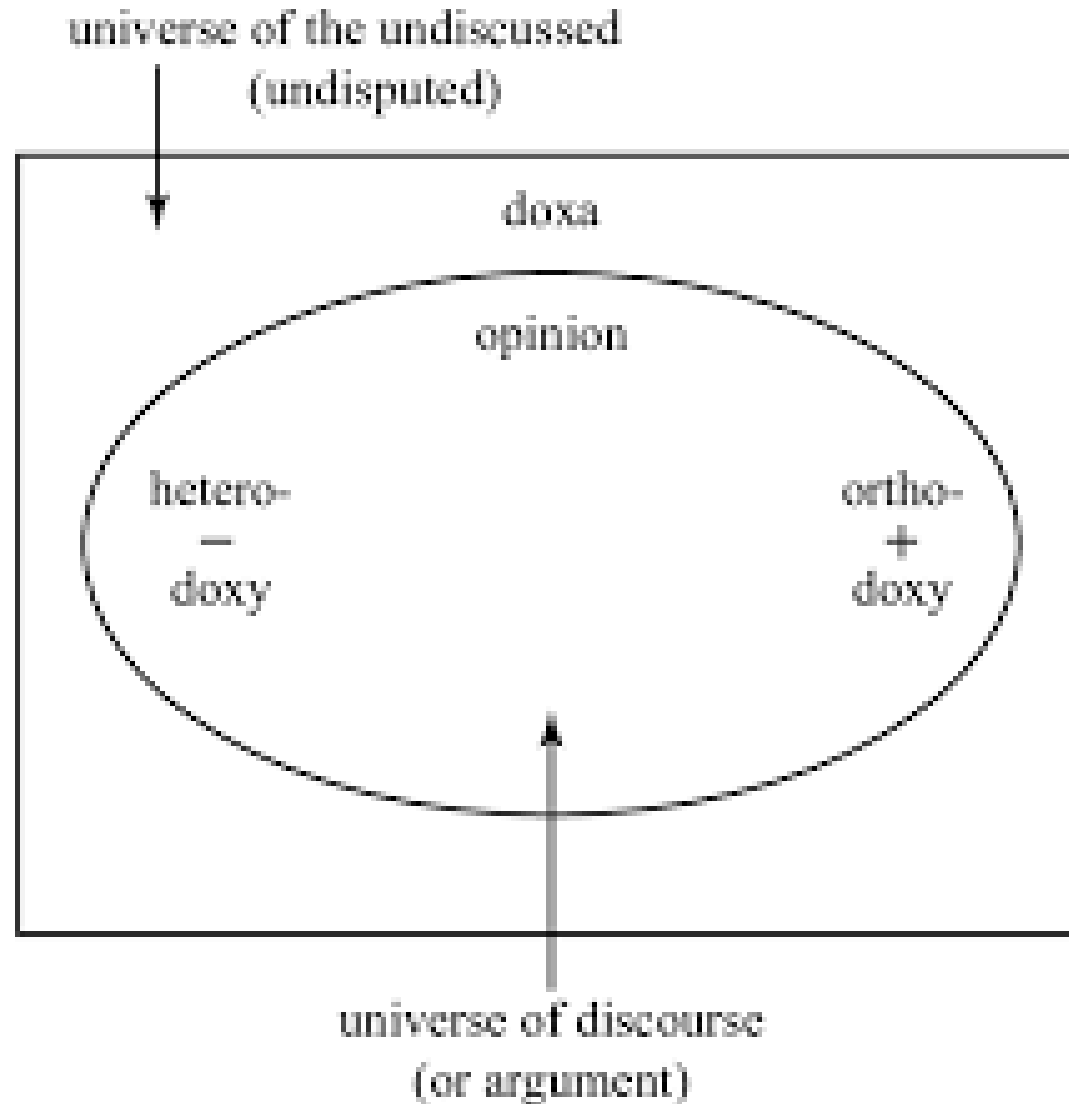
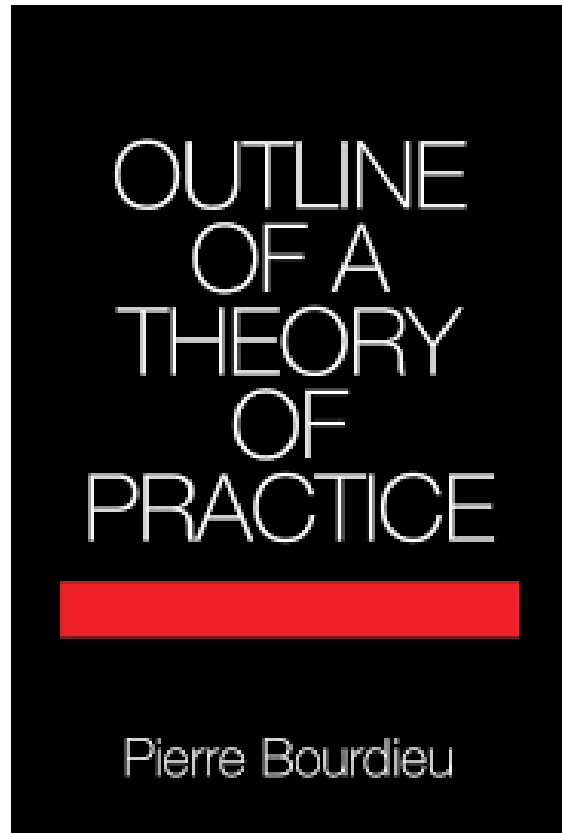
Paul Dicken ~ AI & HR's unholy union

John Konichi & James Pethokoukis ~ Do Americans care about space?

NUMBER 88 - SPRING 2022 - \$10.00

TheNewAtlantis.com

Under the banner of 'saving science' science is enrolled in a defence of the orthodoxy



Eisenhower and Feyerabend on the same page?

Government captured by scientists? (Eisenhower)

Too much political authority entrusted on scientists! (Feyerabend)

The end of the *grand récit* (Lyotard, STS scholars, Post normal science)

... and sociological arguments might be seen as defeatism in the face of the present struggle

- Scientists cannot resolve the problem alone and have high stakes in the preservation of the status quo.
- Institutions are in denial pretending that current predicaments of science do not weaken its privileged role in governance.




Futures

Volume 91, August 2017, Pages 5-11

What is science's crisis really about?

Andrea Saltelli ^{a b}  , [Silvio Funtowicz ^a](#)

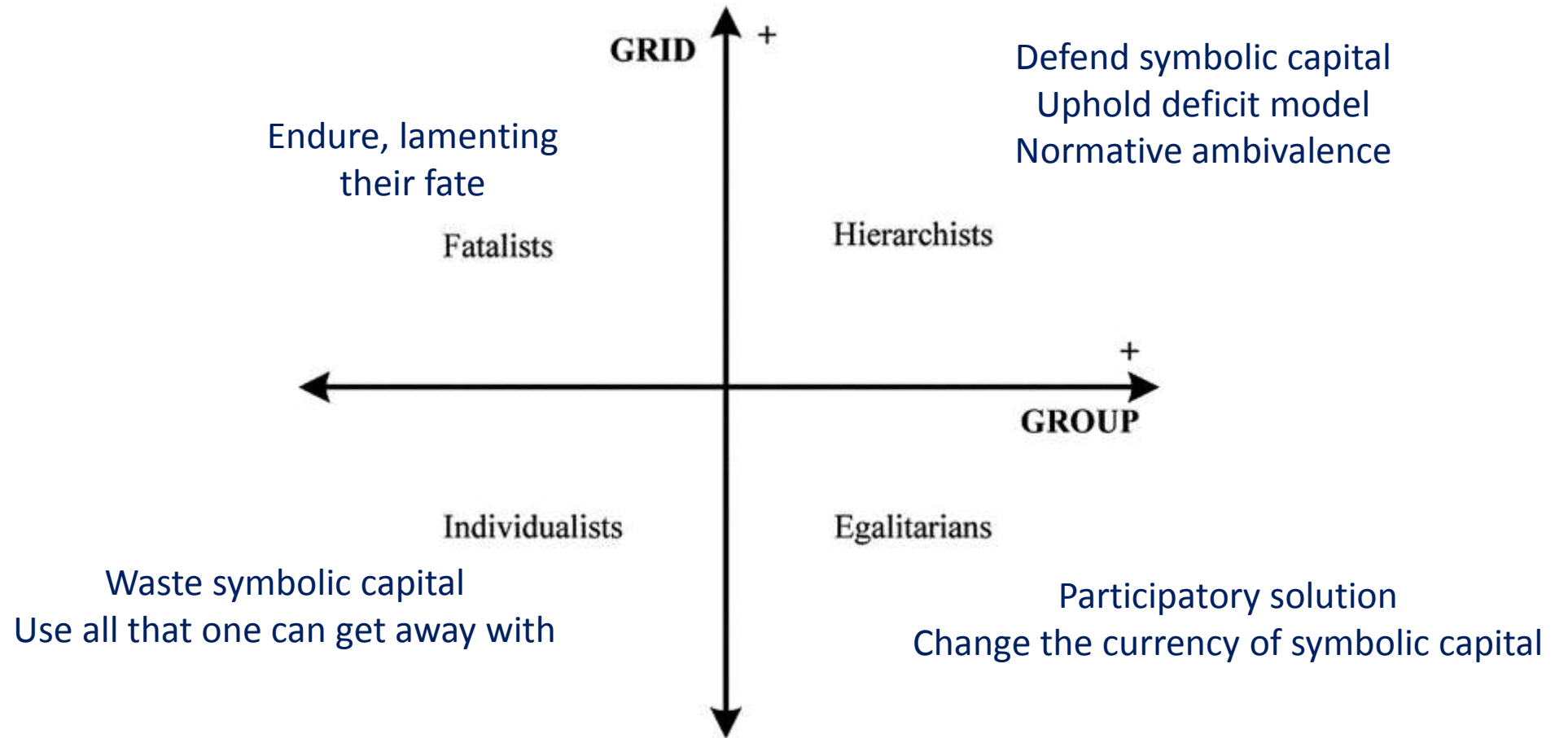
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Then there are the habitus – dispositions of scientists/modellers
(here on Mary Douglas' grid/group diagram)



Solutions are hard to come by for a variety of reasons ...

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Models and the common good*

ARTICLE INFO

Handling Editor: Daniel P Ames

ABSTRACT

How can models do well for the common good? Narratives and counter-narratives are possible to answer the question. The latter are taken here to argue that models may misuse their epistemic authority for reasons of occasion, opportunity and interest. A solution calls for the involvement of more disciplines and actors, but these are not by themselves sufficient due to the present governance, practice and circumstances of science. Short of a radical reset, or Reformation, change will be difficult.

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Research Article

Mathematical models: a state of exception

Andrea Saltelli, Arnald Puy & Monica Di Fiore

Received 09 Jan 2024, Accepted 07 May 2024, Published online 11 Jun 2024

Cite this article <https://doi.org/10.1080/02692171.2024.2365727>

... made all too evident by the present discussion about digital twins of the earth

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Bring digital twins back to Earth


Andrea Saltelli, Gerd Gigerenzer, Mike Hulme, Konstantinos V. Katsikopoulos, Lieke A. Melsen, Glen P. Peters, Roger Pielke Jr, Simon Robertson, Andy Stirling, Massimo Tavoni, Arnald Puy

First published: 26 August 2024 | <https://doi.org/10.1002/wcc.915> | Citations: 2

Digital Twins of the Earth between vision and fiction
--Manuscript Draft--

With Lieke and Arnald

Minerva
A REVIEW OF SCIENCE, LEARNING AND POLICY



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The engagement of social science and humanities that gets accepted in journals tends to be of a confirmatory nature – to help the actors of DestinE to receive societal consensus

For example:
Purportedly a critique but ...




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Digital twins of the Earth with and for humans

[W. Hazeleger](#) , [J. P. M. Aerts](#), [P. Bauer](#), [M. F. P. Bierkens](#), [G. Camps-Valls](#), [M. M. Dekker](#), [F. J. Doblas-Reyes](#), [V. Eyring](#), [C. Finkenauer](#), [A. Grundner](#), [S. Hachinger](#), [D. M. Hall](#), [T. Hartmann](#), [F. Iglesias-Suarez](#), [M. Janssens](#), [E. R. Jones](#), [T. Kölling](#), [M. Lees](#), [S. Lhermitte](#), [R. V. van Nieuwpoort](#), [A.-K. Pahker](#), [O. J. Pellicer-Valero](#), [F. P. Pijpers](#), [A. Siibak](#) ... [F. C. Vossepoel](#) [+ Show authors](#)

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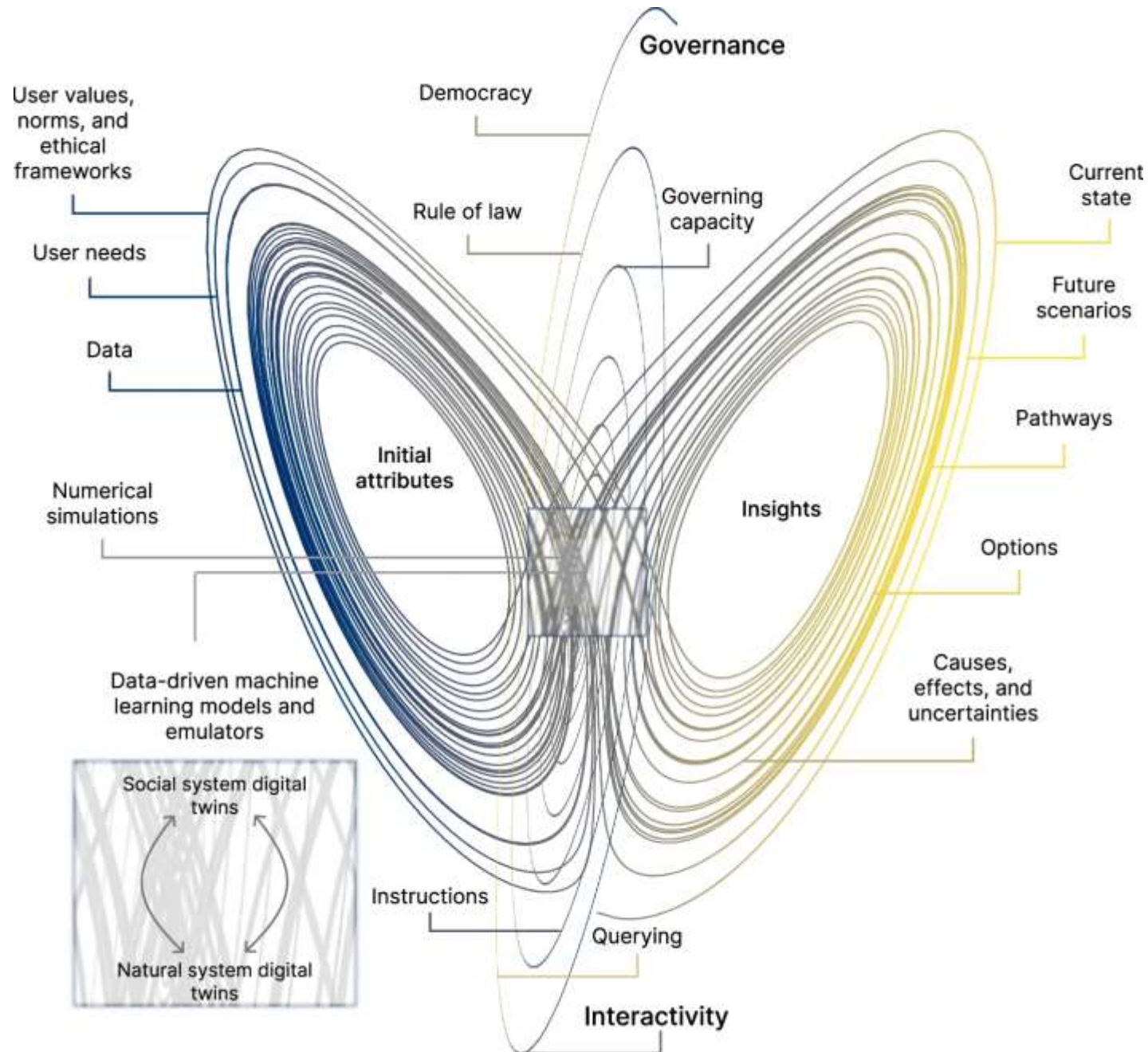
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“Incorporating human interactions in digital twins of the Earth represents a transformative frontier, promising unparalleled insights into Earth system dynamics and empower humans for action.”



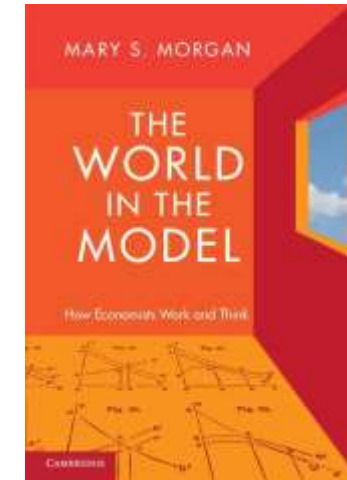
Advocacy will be hard as a place needs to be found
between the **'save the science'** and the
'kill the science of the elites' camps.

Companions will need to be found among those with
different norms and beliefs

Reformation?

Reforming the catholic church from the inside ~1517?

A return to craftsmanship with ‘more time inside the model’?



Andy Stirling’s ‘Cinderella methods’?

Sensitivity auditing, interval analysis, scenario processes, uncertainty heuristics, interactive modelling, exploratory modelling, backcasting workshops, q method, multi-criteria mapping, post-normal science, flexibility assessment, diversity analysis, precautionary appraisal participatory deliberation, transformation labs, pathways approach, reflexive design, participatory design, open appraisal, civic research, statactivism ([Stirling et al., 2023](#)).”



Adopt the practice of statactivists?



... Or damage limitation against model-based narratives of technological solutionism, ecological modernization, green growth, planetary twins ...



Volume 28, Issue 4, 18 April 2025, 112184

Article

Socio-environmental modeling shows physics-like confidence with water modeling surpassing it in numerical claims

Arnald Puy ^{1,13}, Ethan Bacon ¹, Alba Carmona ^{2,3}, Samuel Flinders ¹, David Gefen ⁴, Mohammad Khanjani ⁵, Kai R. Larsen ⁶, Alessio Lachi ⁷, Seth N. Linga ¹, Samuele Lo Piano ⁸, Lieke A. Melsen ⁹, Emily Murray ¹, Razi Shekholeslami ⁵, Ariana Sobhani ¹⁰, Nanxin Wei ¹, Andrea Saltelli ^{11,12}

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The more things change, the more they stay the same: promises of bioeconomy and the economy of promises

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Dennis Eversberg, Philip Koch, Rosa Lehmann, Andrea Saltelli, Sabaheta Ramcilovic-Suominen & Zora Kovacic

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COMMENTARY |  Open Access |  

What did COVID-19 really teach us about science, evidence and society?

Andrea Saltelli , Joachim P. Sturmberg, Daniel Sarewitz, John P. A. Ioannidis

First published: 06 June 2023 | <https://doi-org.sare.upf.edu/10.1111/jep.13876> | Citations: 2