

Post-normal science and developments in the US

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Abstract

Post-normal science (PNS) describes scientific analysis under high stakes and high uncertainty. While this is a general problem for modeling complex systems, the current political climate in the United States adds new challenges in relation to misinformation, expert distrust, and the impending and well-signaled assault on government science. One response to these developments is to strengthen academic and crowdsourced analysis, as the TEMOA project, North Carolina State University, is considering.

Challenges

How to address, as energy modelers:

- the issues raised by post-normal science
- falling public trust in experts
- loss of government information and government science capacity

Post-normal science (PNS)

- "facts [are] uncertain, values in dispute, stakes high, and decisions urgent"
- initiated in the 1990s by Silvio Funtowicz and Jerome Ravetz
- responses:
 - complex systems science
 - redefine context and role of analysis and advice

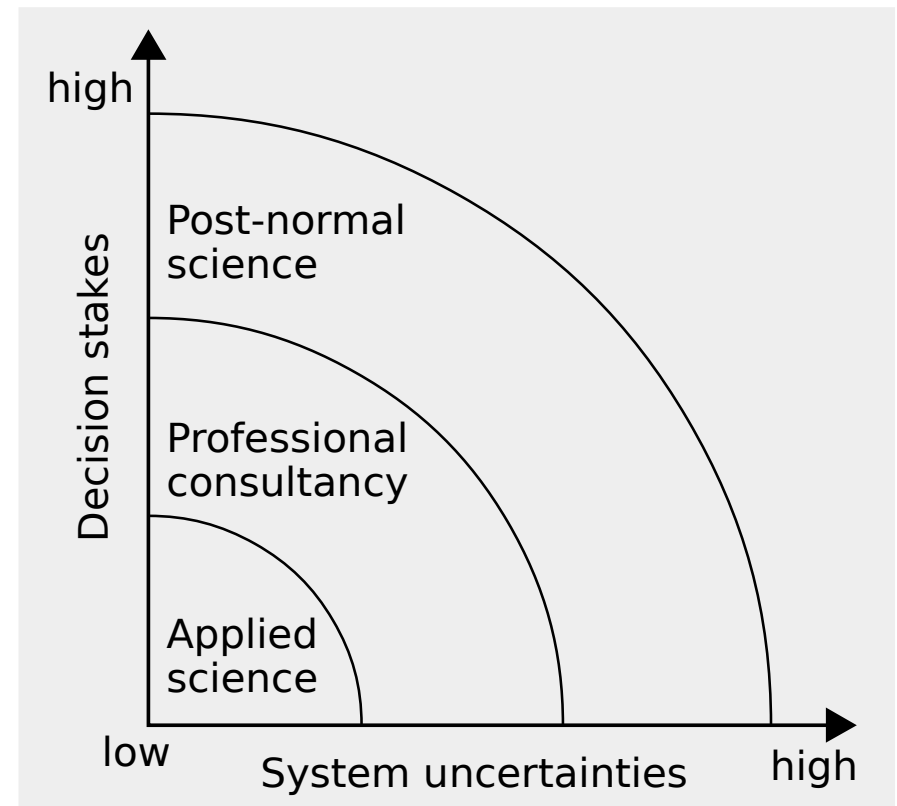


Diagram based on figure in Funtowicz, Silvio and Jerome Ravetz (1993) "Science for the post-normal age". *Futures*. 25:735–755. doi:10.1016/0016-3287(93)90022-L.

Anti-expert trend

- "people in this country have had enough of experts"
(Gove during Brexit referendum)
 - the public is not interested in policy
(Trump while campaigning)
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- social versus scientific consensus
 - personal values and political views, not knowledge, drive attitudes on climate change
 - the social silence on climate change filled by contrarian views in the media
 - the need to change social norms
 - the need to be persuasive as well as right

Loss of government information and government science capacity

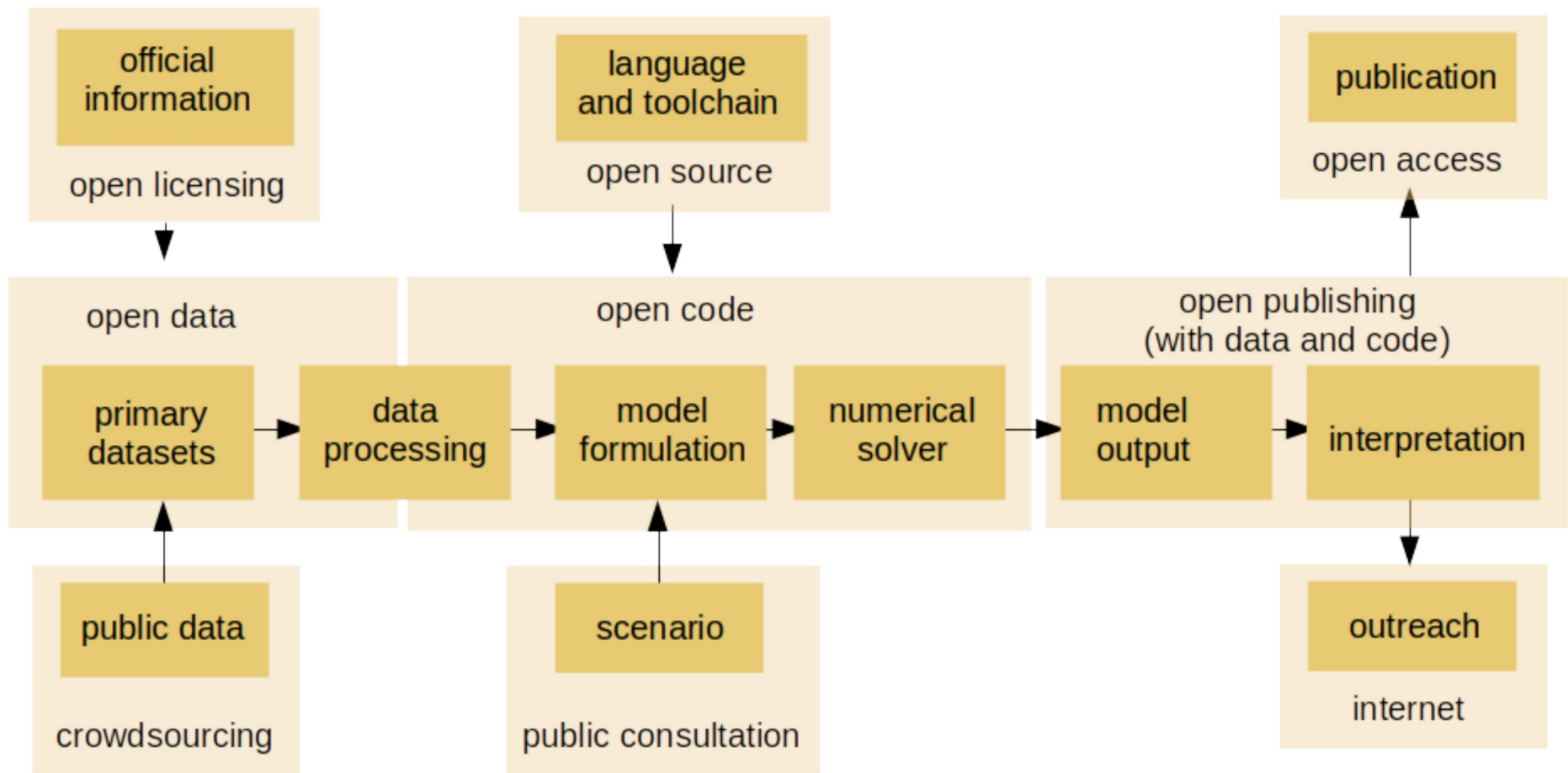
- purges of web documents and datasets (Canada, USA)
- terminated collection programs (NOAA signaled)
- reduced analytical capacity (UK DECC)
- reduced interest in science-led policy appraisal (UK Foreign Office, Trump administration)

Regarding point one, see Herrmann (2017)
DECC was the Department of Energy and Climate Change

TEMOA project

- Tools for Energy Model Optimization and Analysis
- North Carolina State University, North Carolina, USA
- Code license: GPLv2
- programmed using the Pyomo Python library
- project leader: Joe DeCarolis

Public-oriented energy modeling



Outcomes

- break-out group to determine

References

Corner, Adam (31 March 2017). "Is it socially acceptable to challenge climate denial?". *The Guardian*. London, United Kingdom. ISSN 0261-3077. Retrieved 2017-04-11.

Corner, Adam and Jamie Clarke (2017). *Talking climate: from research to practice in public engagement*. London, United Kingdom: Palgrave Macmillan. doi:10.1007/978-3-319-46744-3. ISBN 978-3-319-46743-6.

Herrmann, Victoria. (28 March 2017). "I am an Arctic researcher. Donald Trump is deleting my citations". *The Guardian*. London, United Kingdom. ISSN 0261-3077. Retrieved 2017-04-11.