Scenario glossary

Debate

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Introduction

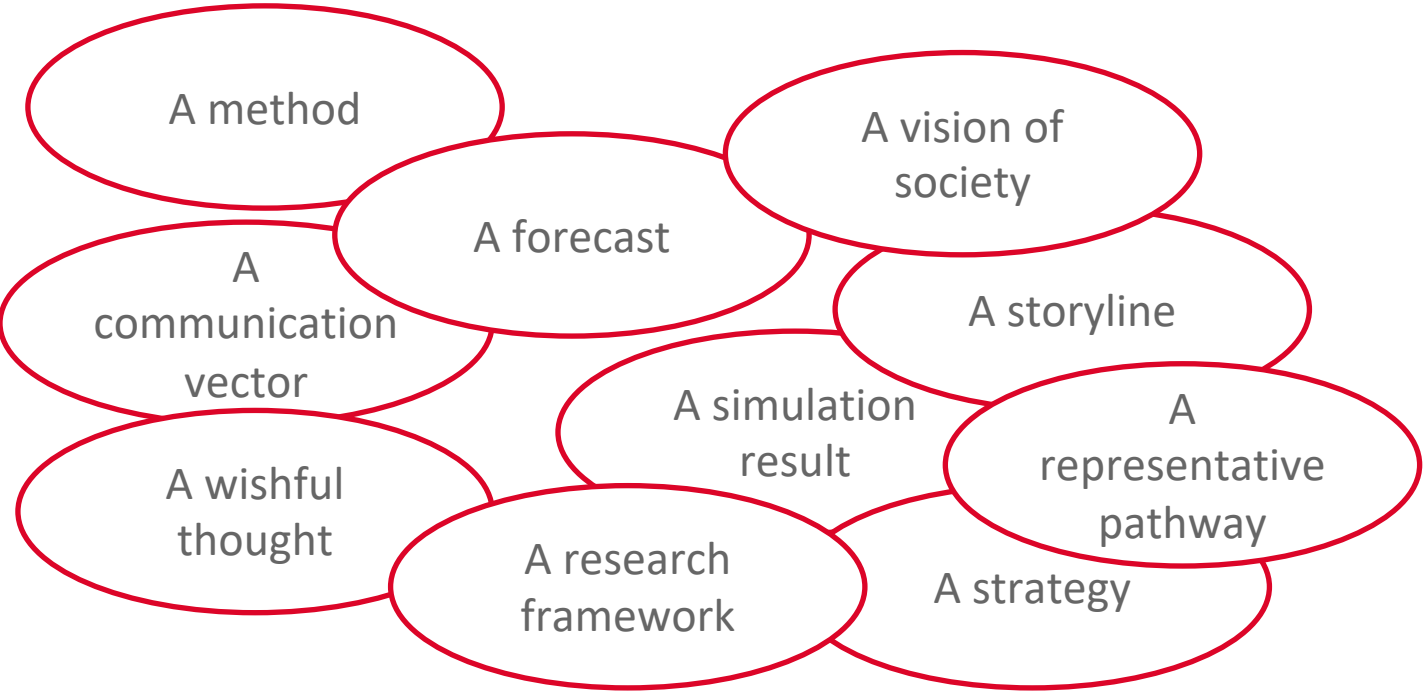
Fuel cycle scenario studies

- Vastly interdisciplinary
  - Boundary objects*
  - Borrows terms from other fields: physics, operational research, mathematics, economy, sociology etc.

- Different actors with different needs
  - Market economy or political decision?
  - Global trends or technological roadmaps?

*S. Tillement et.al. (2017), *Between heterogeneity and cooperation. The (electronuclear) scenario as a 'boundary object' for decision-making?* 2nd annual Technical Workshop on Fuel Cycle Simulation, USA.

What is a scenario?



Scenarios used in many fields

- Nuclear fuel cycle
- Climate and environmental change

IPCC, 2018: Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty [V. Masson-Delmotte, et. al.]

- Energy

AIE (2018). World Energy Outlook 2018, AIE, Paris, https://doi.org/10.1787/weo-2018-en

- Aircraft design

A. Strohmayer (2001). Improving Aircraft Design Robustness with Scenario Methods. Acta Polytechnica Vol. 41 No. 4–5/2001

- Urban planning

Milica Stojanovic, Petar Mitkovic, Mihailo Mitkovic (2014). The scenario method in urban planning. Architecture and Civil Engineering Vol. 12, No 1, 2014, pp. 81 - 95

- Industrial maintenance

Jon Bokrantz, Anders Skoogh, Cecilia Berlin, Johan Stahre, "Maintenance in digitalised manufacturing: Delphi-based scenarios for 2030",International Journal of Production Economics, Volume 191, 2017, Pages 154-169, ISSN 0925-5273, https://doi.org/10.1016/j.ijpe.2017.06.010.

Scenario typology and meta-scenario

- Defining scenario

M. J Spaniol et. al., “Defining scenario”, Futures Foresight Sci. 2019;1:e3

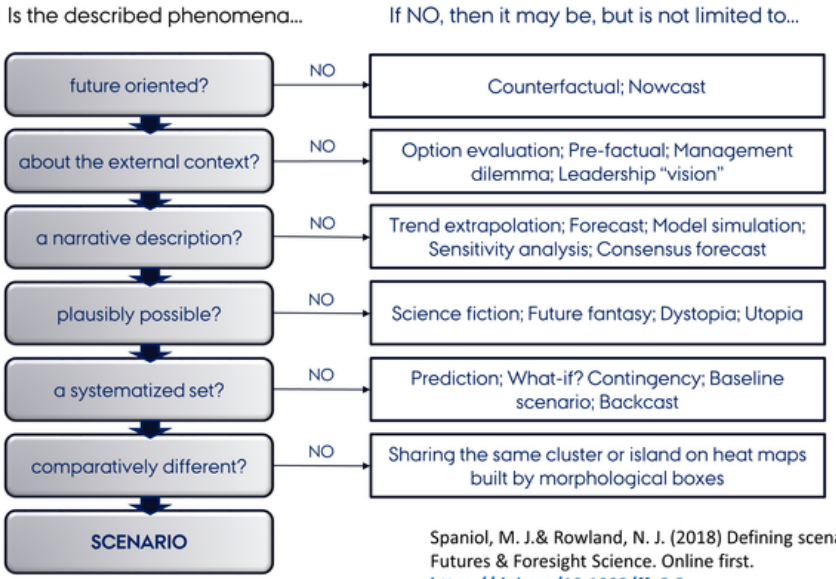
- An updated scenario typology

P.W.F van Notten et. al., “An updated scenario typology”, Futures Volume 35, Issue 5, June 2003, Pages 423-443

- The future of scenarios: challenges and opportunities

Stephen M. Millett, “The future of scenarios: challenges and opportunities” (2003), Strategy & Leadership, Vol. 31 Issue: 2, pp.16-24

A question already discussed in literature



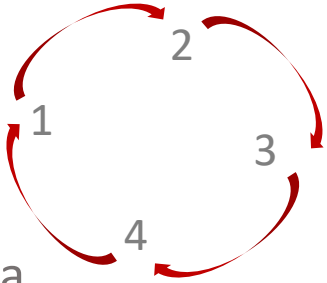
Spaniol, M. J.& Rowland, N. J. (2018) Defining scenario. Futures & Foresight Science. Online first. https://doi.org/10.1002/ffo2.3

The debate

Goal

- Not giving a definitive answer to complex questions
- No good / bad answer
- Comparing views of the different actors of the community and understanding their motivations

Debate teams



- 4 groups
- Each group chooses an ambassador and a spokesperson
- Each groups debates on a different question (15 min)
- The ambassadors moves to the next groups and explain their group's point of view on their question
- The groups provides a counterpoint on the question brought by the ambassador (15 min)
- The spokespersons present the counterpoint on behalf of their group (2 min each) + debate (until lunchtime)

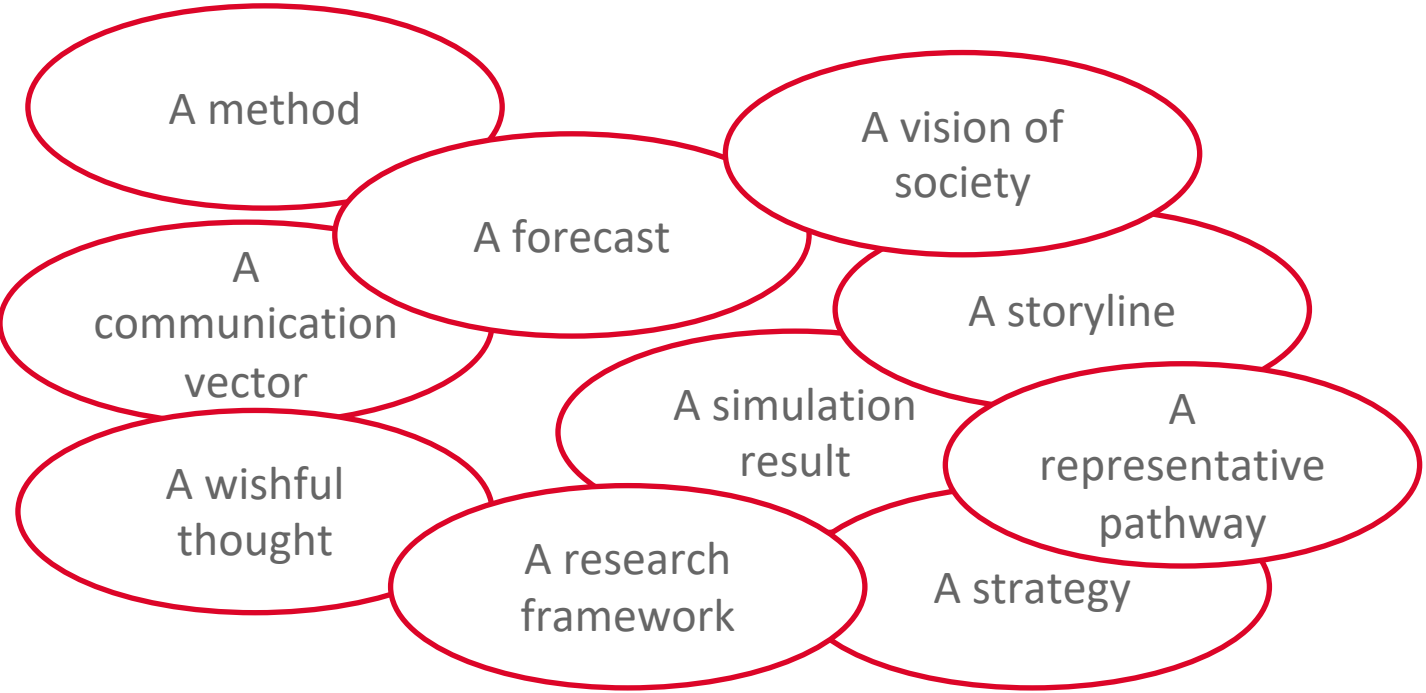
1. What is an electro-nuclear scenario? What is not an electro-nuclear scenario ?

2. What is the meaning of « scenario uncertainty »?

3. What are scenarios inputs and outputs? Who sets them?

4. What is a good scenario-maker? And a bad one?

What is a scenario?



1. What is an electro-nuclear scenario? What is not an electro-nuclear scenario ?

   Keywords: trajectory, pathway, trend, prediction, study, plausible

2. What is the meaning of « scenario uncertainty »?

   Keywords: confidence, decision, risk, resilience, flexibility, adaptation

3. What are scenarios inputs and outputs? Who sets them?

   Keywords: Parameters, constraints, objectives, hypotheses, exo/endogenous

4. What is a good scenario-maker? And a bad one?

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A different scenario community

- Next slides: definitions taken from the IPCC report

IPCC, 2018: Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty [V. Masson-Delmotte, et. al.]

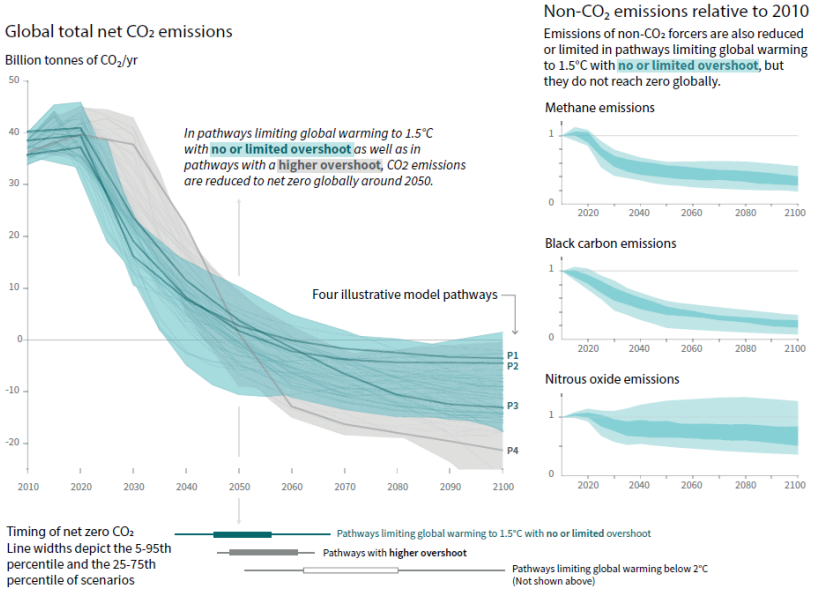
- Scenario

Plausible description of how the future may develop based on a coherent and internally consistent set of assumptions about key driving forces (e.g., rate of technological change, prices) and relationships. Note that scenarios are neither predictions nor forecasts, but are used to provide a view of the implications of developments and actions.

- Pathway:

The temporal evolution of natural and/or human systems towards a future state. Pathway concepts range from sets of quantitative and qualitative scenarios or narratives of potential futures to solution-oriented decision-making processes to achieve desirable societal goals. Pathway approaches typically focus on biophysical, techno-economic, and/or socio-behavioural trajectories and involve various dynamics, goals and actors across different scales

Pathways



Source: IPCC, 2018: Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty [V. Masson-Delmotte, et. al.]

- Projection:

A potential future evolution of a quantity or set of quantities, often computed with the aid of a model. Unlike predictions, projections are conditional on assumptions concerning, for example, future socio-economic and technological developments that may or may not be realized.

- Resilience

The capacity of social, economic and environmental systems to cope with a hazardous event or trend or disturbance, responding or reorganizing in ways that maintain their essential function, identity and structure while also maintaining the capacity for adaptation, learning and transformation. This definition builds from the definition used by Arctic Council (2013).

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