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# *Strangers in the Night?*

## Analysing the Developer - User Nexus in Scenario Practice through Concepts of Plausibility

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**Ricarda Scheele, M.Sc.**

*Stuttgart Research Center for Interdisciplinary Risk and  
Innovation Studies (ZIRIUS)*

University of Stuttgart



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What happens when energy scenarios leave their  
**happy** sphere of generation?

## Scenario Travel!

What happens when they travel? Not only  
through time and space but through actor  
worlds?

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## Scenarios as knowledge work in society

- In business and policy contexts energy scenarios emerged as promising tools to explore the future, such as the emergence of technologies and their societal implications.

### Two Observations:

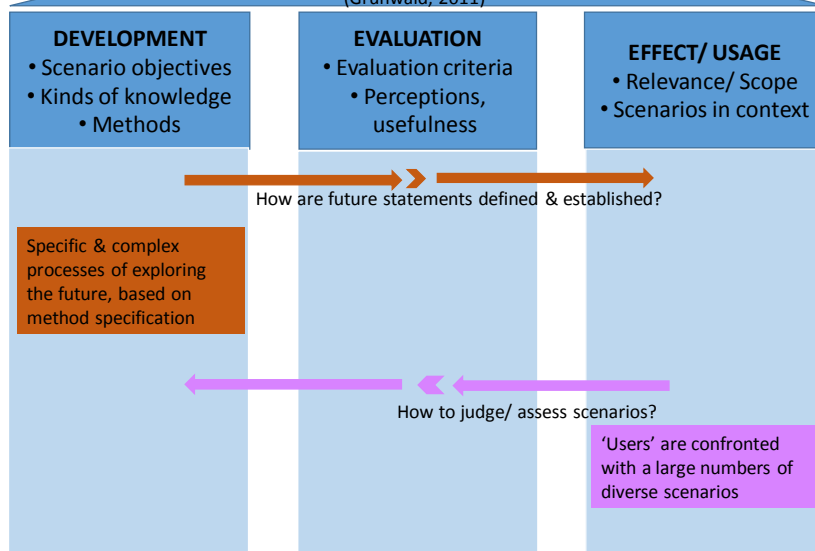
1. Increase in 'large-scale' scenario work (IPCC, Greenpeace Energy [R]evolution, guiding scenarios [Leitstudien]) – produced and disseminated in forms of reports, narratives etc.
2. Scenarios leave their generative sphere; it opens up scenarios to society, to a wide audience that was not involved/ envisioned/ intended; 'user-recipients' instead of 'user-producers'(Pulver & VanDeveer 2009)

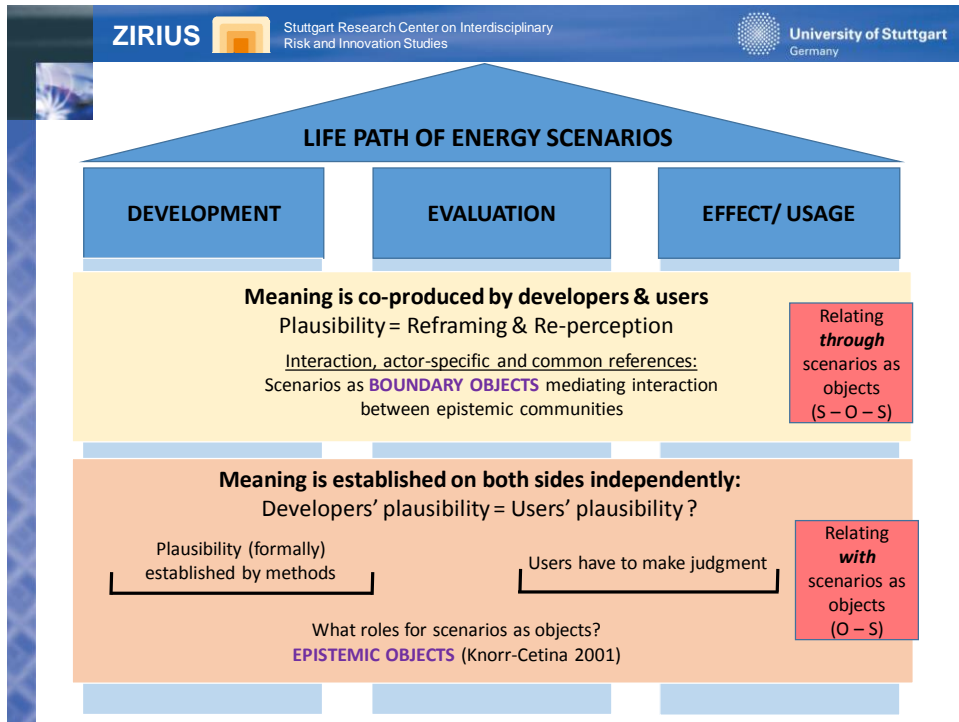
- **My argument:** Scenarios are (knowledge) objects in society, taking on a more prominent role in society, shaping society and its view on the future while being shaped by it.
- Shift in analysis towards scenarios as being objects in society itself.



### LIFE PATH OF ENERGY SCENARIOS

(Grunwald, 2011)





ZIRIUS Stuttgart Research Center on Interdisciplinary Risk and Innovation Studies University of Stuttgart Germany

## New Perspectives on the Concept of Plausibility

- In light of intrinsic uncertainty, a non-technical concept as alternative to precise estimates of probabilities (Strand 2013)
- Sense-making, meaning-making, spectrum of plausibility – implausibility

*“[T]here is little in the literature on scenario planning that describes what is meant by plausibility or how plausibility is established in practice.” (Selin & Pereira 2013)*

**Analytical interest in scenarios as objects allows for new perspectives:**

- **Subject-object relationship:** Plausibility is derived from engaging with the object and its characteristics ('non-social practice', Knorr-Cetina 2001)
- **Materiality of object:** Scenario as object is central to processes of learning and knowing, of meaning-producing
- Informs **research** that follows the trajectories of plausibility



## Semi-experimental study on plausibility

**Sample:** n= 55, Master-degree students, University of Stuttgart

- Sample: Social sciences vs. engineering students, all with focus on energy

**2 treatment groups:** 2 scenario reports in different order (n=30/n=25)

**Material:** 2 Scenario Reports (à 2 individual scenarios) previously developed using different scenario methods

- Intuitive Logics (after van der Heijden, 2006)
- Cross-Impact Balance Analysis (after Weimer-Jehle, 2006)
- Differences in content scenarios

**Within-subject Procedure:**

- T0: Online questionnaire
- T1: Classroom session: Read reports, plausibility judgments, related concepts
- T2: Group discussions, epistemic evaluation, following recurring judgments



## Qualitative Data

[Data evaluation according to Models-of-Data Theory (Chinn & Brewer, 2003)]

**Different patterns in reasoning observable, e.g.:**

**Type 'Pro scientific nature of scenarios'**

Discussions of scenarios are dominated by scientific character, "the scenario looks more solid due to the matrix", "there is no scientific theory behind it"

- Potentially strong influence on others
- Engineering students particularly critical towards matrix-based method (CIB)

**Type 'The critical and undecided'**

Discussions of scenarios are dominated by uncertainty; "How can I even say something about this scenario?!", "it is a too small picture of a potential reality"

- New furthering questions/ issues posed
- Social science students are particularly undecided



## Quantitative Data

[Data evaluation according to plausibility judgement in conceptual change (Lombardi et al. 2015)]

### Individual-related factors:

- *Background knowledge*: Less knowledge about energy correlated positively with judgment in extremes
- *Need for cognitive closure*: Individuals with motivation to engage in controversial topics, showed high plausibility judgements
- *Beliefs*: Scenarios were ranked higher when featuring personal beliefs about success factors of the German 'Energiewende'
- *Expectations*: Positive correlation between expectation of success of Energiewende and the content of scenarios.

### Method and expertise-related factors:

- Plausibility judgments depended on trust in method: Narratives (developed with IL) were less trusted, but generated more questions in discussion
- *Trustworthiness* of developers, degree of complexity positively correlated with plausibility



## Conclusions: What does this tell us?

- Current scenario literature and practice in energy tends to present users as passive recipients, as empty signifiers in the scenario life path
- Scenarios as epistemic objects shifts attention (see Knorr-Cetina):
- ✓ **Changing and unfolding ontology:**
  - 'Lack of completeness of being', objects are constantly emerging,
  - Empirical data suggests a multiplicity of source-related and individual-related factors play a role
  - New meanings/ contexts are created by participants because scenarios were stripped off their original development context
- ✓ **Dispersed character:**
  - Partial objects may unfold the ontology of the scenario as a whole
  - For different people, different partial objects are conducive in relating to the 'whole' (narrative, matrix, network diagram)
- ✓ **Signifying meaning:**
  - The lack epistemic objects show, point to avenues for exploration and meaning-making
  - Trust in source: Scenarios embody something contradicting: Alleged clarity and precision through models & ambiguity through selectivity, arbitrariness of a few scenarios



## Thank you for your attention!



**Ricarda Scheele, M.Sc.**

Stuttgart Research Center for Interdisciplinary Risk  
and Innovation Studies

University of Stuttgart

[www.zirius.eu](http://www.zirius.eu)

[ricarda.scheele@zirius.uni-stuttgart.de](mailto:ricarda.scheele@zirius.uni-stuttgart.de)



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