Enriching the methodological scope of prospective TA

First impressions from SYNENERGENE, the MMLAP on synthetic biology

STEFFEN ALBRECHT – INSTITUTE FOR TECHNOLOGY ASSESSMENT AND SYSTEMS ANALYSIS

TA as prospective thinking

- Focus on future implications of science and technology
- Trend to assessing new and emerging technologies
- Trend to open up expert community… (e.g., Bechmann 1997)
  - to include societal values more fully
  - to improve quality of decisions
  - to raise legitimacy of decisions
  - to broaden interest in science and technology
- Development of TA concepts and methods
  - Public engagement
  - Participatory TA
  - Upstream / constructive / real time TA
  - RRI

Problems with early engagement

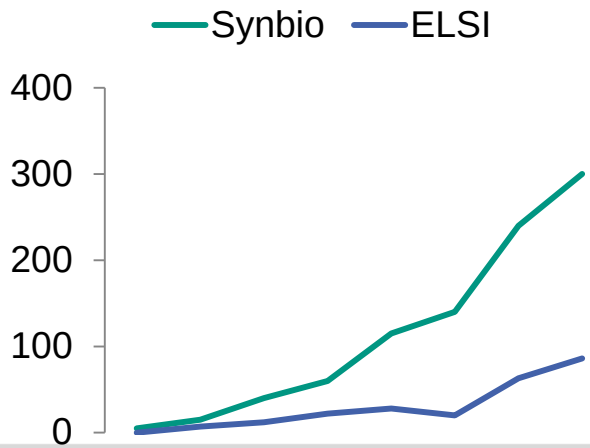
- Three major problems: (Hampel/Kronberger 2015)
  - Limited knowledge, vague definitions (e.g., Collingridge 1980)
  - Limited awareness and interest (e.g., Leopoldina/Allensbach 2015)
  - Which stakeholders to address? (e.g., Grunwald 2012)

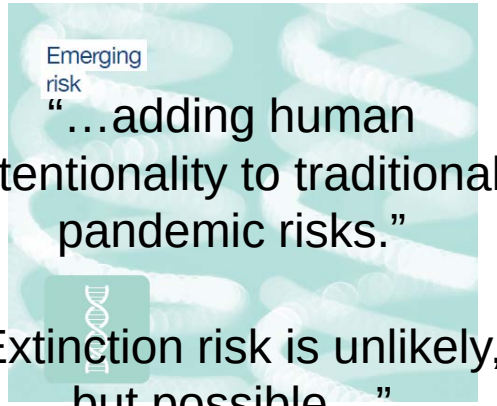
- But:
  - Influencing research and innovation is easier in early stages of the process (Collingridge 1980)

- What can we learn from the field of synthetic biology?

Synthetic Biology as NEST

- Starting to consolidate around 2004 with first synbio conference
- Boundaries are still unclear
- Old wine in new bottles? (e.g., Stemerding/Rerimassie 2013)
- Technoscience / “Hope, hype and fear technology”
  (e.g., Sauter 2011, Willets 2013, Oldham et al. 2012, Arnaldi/Lorenzet 2014, Global Challenges 2015)





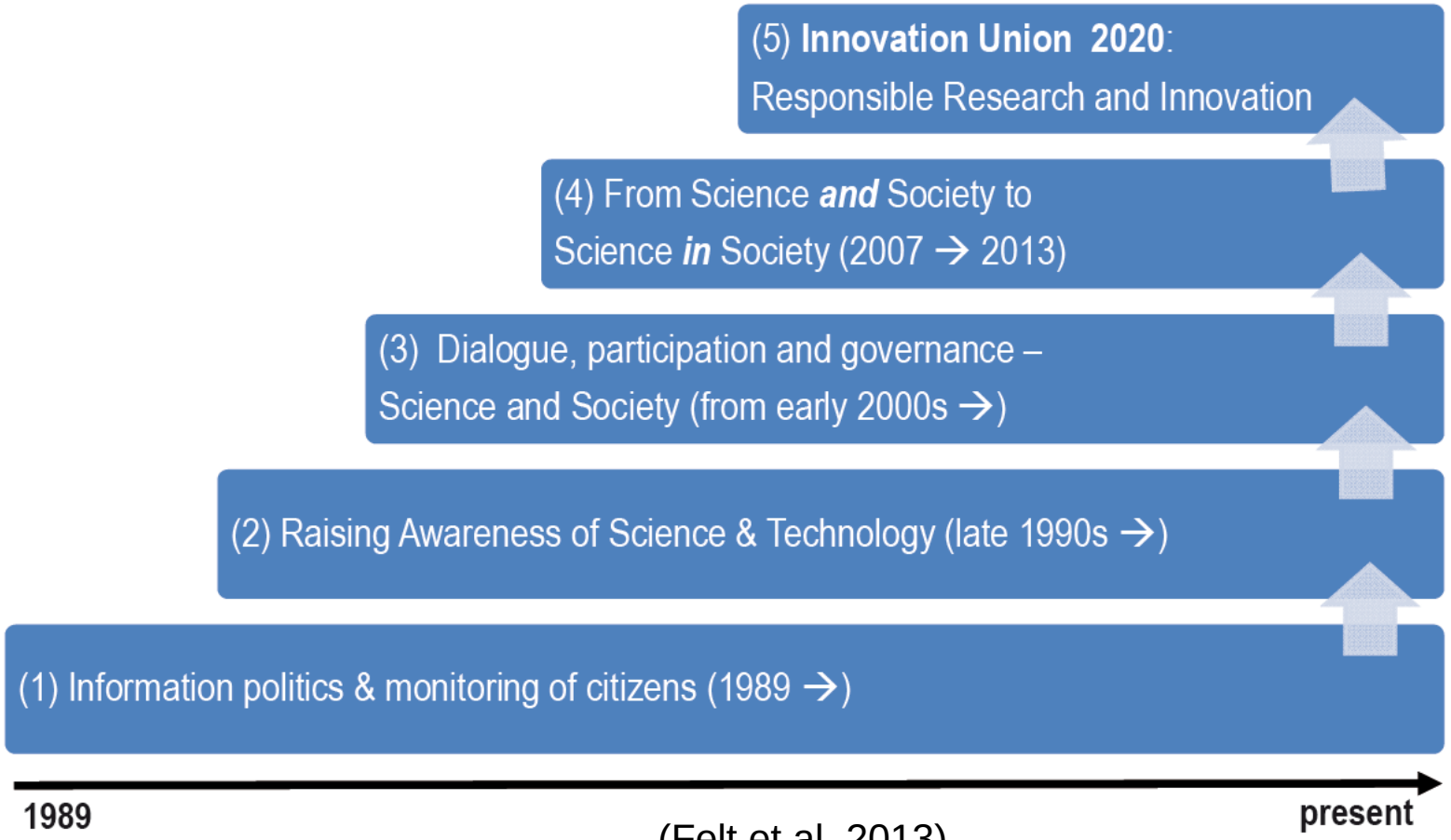
Previous assessments of Synthetic Biology

Persistent problems

- CSOs rarely engaged (e.g., SCENIHR 2014)
- People find it difficult to grasp synthetic biology (Bruce 2010)
- Deliberation requires openness, but values are fundamental (Kaebnick et al. 2014)
- Vested interests work against effective governance (König et al. 2013)

  - Public debate of synthetic biology is still a long way ahead!

Is RRI the solution?



(Felt et al. 2013)

Implementing RRI in SB: SYNENERGENE

PF1:
SynBio Futures

PF2: Public Science
& Participation

WWICS

Rathenau

Ecsite

Open Fora (OFs)

Zebralog

Mobilisation and
Mutual Learning
RRI

CD2: Online
Communication

'Business', 'Civil Society', 'Media'
'Policy', 'Science'

KIT

CD1: International
Dimension

Biofaction

PF4: Research
& Policy

PF3: Art, Culture
& Society

Problems with early engagement revisited

- Three major problems: (Hampel/Kronberger)
  - Limited knowledge, vague definitions (e.g., Collingridge 1980)
  - Limited awareness and interest (e.g., Leopoldina/Allensbach 2015)
  - Which stakeholders to address? (e.g., Grunwald 2012)

- SYNENERGENE tries to contribute:
  - (inviting a variety of perspectives)
  - Mobilising multiple actors, many of them multipliers
  - Experimental approach, learning from experiences

First experiences from the project

- Successful engagement of a variety of relevant stakeholders (iGEM, ECSITE, DIYbio, TA community, ERASynbio, etc group)
- Encouraging experiences with artistic reflection and DIYbio, opening up spaces for reflection and discourse
- Mutual learning and sharing of best practices within the TA community

- Challenges…
  - in getting different groups / cultures to talk to each other
  - in getting from reflections to changes in actual (research) practice
  - in transferring tacit knowledge to those not directly involved

- TA in RRI as real-world experiment – Evaluation as core component
- Various methods are applied and tested, but broader public engagement has yet to come

What‘s on the horizon?

- SYNENERGENE contributes to
  - the development and the testing of methodologies for early engagement in technology development
  - identifying the new role of TA in the context of RRI and science-society-policy relations
  - answering questions of practical implementation left open in RRI discourse

- RRI as an experimentation process?
- RRI as mode 2 science, becoming reflexive?
- TA as continuous learning process!

Further information: www.synenergene.eu

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