

Maastricht University *Leading in Learning!*

CLAIMS ABOUT RISK AND BENEFITS AS INGREDIENTS OF INNOVATION

THIRD PARIS RISK GROUP WORKSHOP
June 18th and 19th, 2015, RIVM, Bilthoven

Harro van Lente
University of Maastricht - Science and Technology Studies
NanoNextNL – Technology Assessment

NanoNextNL – research and innovation

- 2011-2016
- 250 PhD projects
- 10 universities
- 120 companies
- RA+TA=RATA

nanonextnl
Innovating with nano and nanotechnology

Risk analysis produces claims

- Circulate in various ways:
 - reports
 - articles
 - public media
- amidst other claims
 - folk theories
 - rumours
 - third parties
- so, politics of knowledge production
 - boundaries
 - mandate
 - authority

Claims are performative

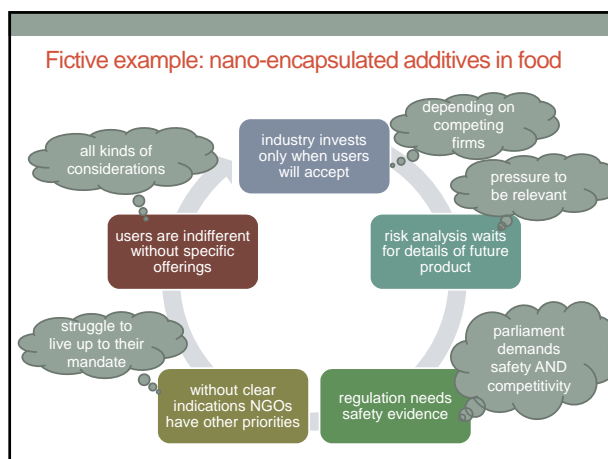
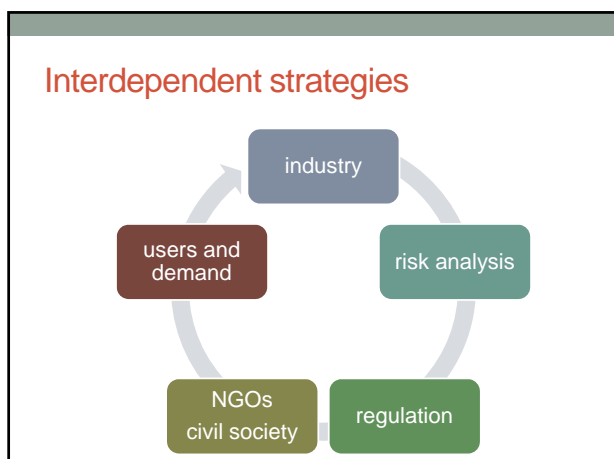
- Austin 1962: *How to do things with words?*
 - descriptive
 - prescriptive
 - performative
- Examples of performativity
 - "Yes, I will marry you"
 - "This engine can perform 25% better in two years time"
 - "This material is dangerous, in particular for children and elderly"
- Performative claims are part of innovation processes
 - guide actions
 - legitimate directions
 - coordinate efforts

Emerging technologies

- Characteristics of first stages
 - Unstable (fluidity)
 - Uncertainty (who, what, when, why)
- In decisions factors are connected
 - risks
 - technical performance
 - markets
 - players
 - futures
- When calculations are unreliable
 - heuristics are needed
 - decisions of others matter
 - strategic games emerge

Claims shape strategies in innovation

- technology developers and promoters
 - i.e. insiders / 'enactors'
- funders, consumers, citizens
 - i.e. outsiders / 'comparative selectors'
- third parties
 - e.g. insurance companies
- government actors
- NGOs and other civil society groups



Games and patterns in innovation

- Waiting games
 - paralysis as outcome
- Hypes and disappointment
 - trying to outsmart others
- Waves of innovation
 - the force of dominant designs
- Steady innovation
 - gradual increase as the rule (Moore's law)

Risk claims in innovation

dynamic	roles of risk claims	example
waiting game	prompting for delay	nanotech in food
hype cycle	feeding disappointment	gene therapy
innovation wave	downplaying the new wave	self-driving cars
steady innovation	choosing how to stay on scheme	paper pulp additives

How to make risk claims productive?

- Know thou dynamics
 - waiting game
 - hype-disappointment
 - waves of innovation
 - steady innovation
- Engage in positioning work
 - self-defined
 - attributed by others
- Build institutional coupling
 - business incubator
 - 'societal incubator'

Some references

- Van Lente, H., C. Spitters and A. Peine (2013), Comparing Technological Hype Cycles: Towards a Theory, *Technological Forecasting and Social Change*, Vol 80 (8) 1615-1628.
- Rip, A. and H. van Lente (2013), Bridging the gap between innovation and ELSA: the TA program in the Dutch nano-R&D program NanoNed, *Nanoethics*, Vol 7(1), 7-16.
- Van Lente, H. (2012), Navigating Foresight in a Sea of Expectations: Lessons from the Sociology of Expectations, *Technology Analysis & Strategic Management*, Vol. 24, No. 8, 789-802
- Bakker, S. H. van Lente and M. Meeus, (2012) Dominance in the Prototyping Phase: the Case of Hydrogen Passenger Cars, *Research Policy*, Vol 41, 871-883.
- Bakker, S. H. van Lente, R. Engels (2012), Competition in a technological niche: the cars of the future, *Technology Analysis & Strategic Management*, Vol 24(5), 421-434.
- Van Lente, H., R. Smits, M.P. Hekkert, and B. Van Waveren (2011), 'Systemic Intermediaries and Transition Processes' in S. Guy, S. Marvin, W. Mead and T. Moss (Ed.), *Shaping Urban Infrastructures: Intermediaries and the Governance of Socio-Technical Networks*, London: EarthScan, 36-52.
- Van Lente, H. en A. Rip (2011), De maatschappelijke inbedding van nanotechnologie, in D. Reinhoudt e.a., *Nanotechnologie, geen Kleinigheid*, Den Haag: SMO publicaties, 97-109. ISBN 978-90-6962-231-6
- Van Lente, H. and S. Bakker (2010), 'Competing expectations: the case of hydrogen storage technologies', *Technology Analysis & Strategic Management*, Vol 22 (6), 693-709