

Scientific Advice & Political Decisions

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Little societal priority
for health care,
education,
research

No authority of
Professor
Teacher,
Doctor

We live in a techno-
logical culture:

Modern society
cannot exist
without
Science and
Technology

Paradox
of scientific
authority



Question

How to democratize technological culture while:

- Making use of the specific qualities of various forms of expertise, including scientific and engineering expertise
- And also allow for a more active role of citizens

Or:

Is there still a role for scientific advice?



Theory of scientific advising*

Specifies scientific advising as:

- **Product**
- **Work**
- **Process**

* Bijker, W. E., Bal, R., & Hendriks, R. (2009) *Paradox of Scientific Authority: the role of scientific advice in democracies*. Cambridge, MA: MIT Press.



Product of Scientific Advising

Advisory report:

- Front stage identity
- Scientific, but not like research article:
Serviceable truth: Scientific knowledge, which is tuned to
policy making
(e.g. IReR, *Governance: the Lombardy Way*, 2007)

Work of scientific advising

- Backstage activity
- Boundary work +



- Coordination mechanisms:
Inseparable acts of distinguishing and
coordinating

backstage

interests

science

hearings

policy

knowledge

frontstage



Committee membership

- *frontstage*
 - members are selected *a titre personnel*: no representation
 - only 'certified experts' are eligible for committee membership
- *backstage*
 - membership is used for
 - *distancing* from the societal problem ('taking the academic route')
 - *inducing commitment* of the field (by strategically choosing experts)

Hearings and reviews as a form of 'qualitative research'

- On problem definitions and evaluations: attributing expertise to lay people

“Cochlear implants are an example. How do the deaf experience such a development? And how does it relate to children, especially in cases of genetic hearing problems? You won't get that from the literature, but they are important for your advice. That is not diplomacy or politics, you need it for your analysis.”

- On possible impact

“It is a test of the rationale of the advice. You can test how the advice is read by the different stakeholders, who will look at it through differently colored glasses.”

Scientific advising in Process

How to position scientific advising in the wider political process?

plea:

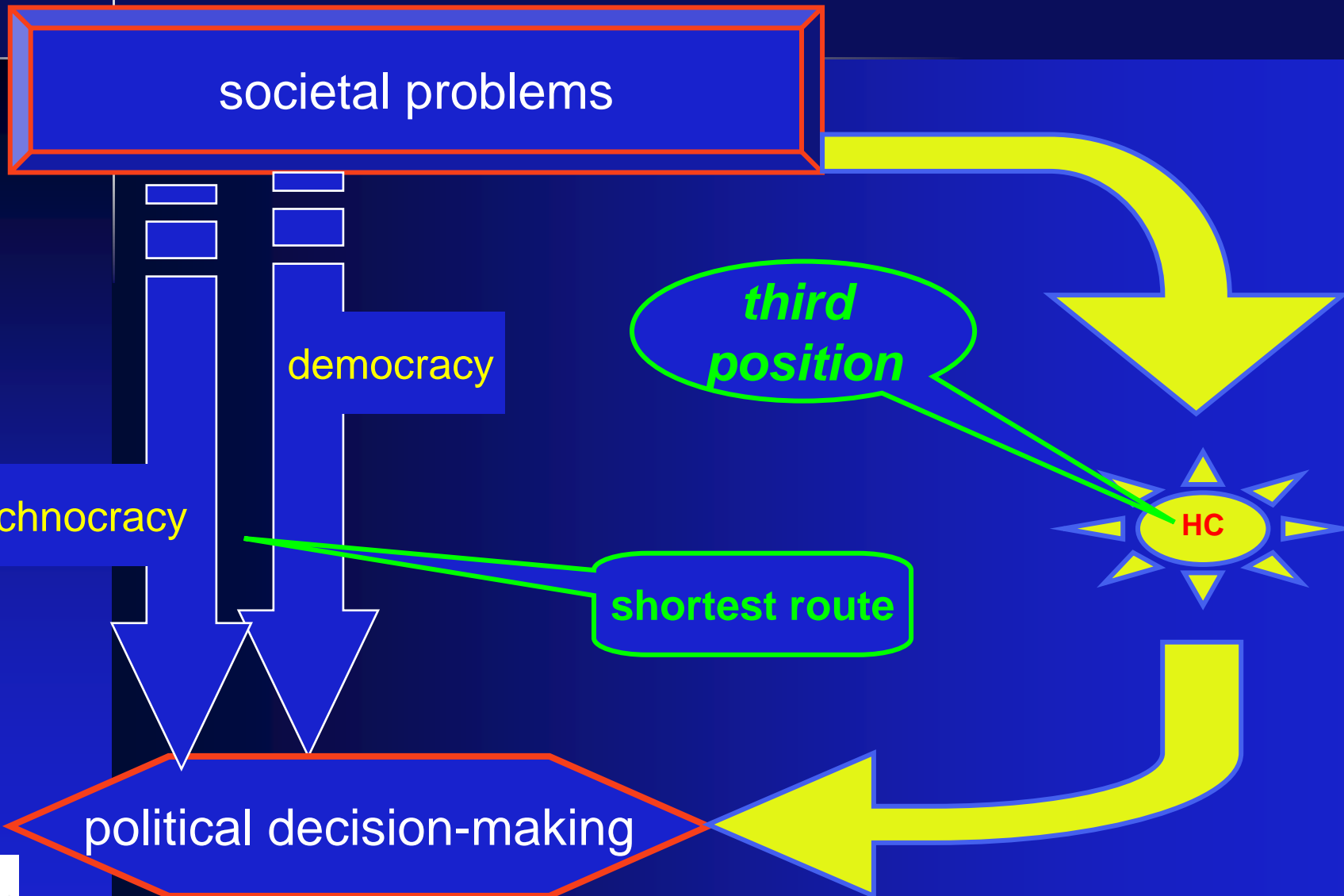
Create “third positions”

Illustration: scientific advising in democratic (risk) governance

Case:

risk governance in nanotechnologies

A 'third position'?



Third position, characterization:

- Third position = **Detour** :
lends distance:
 - To politics
 - To acute societal problemsbut is serviceable to both
- Third position = different *genre* by itself:
scientific advising:
 - Creating hybrids (advice = science + policy)
 - Take “academic time” for political issues
- Third position is:
 - *Necessary for democracy*
 - *Only possible in democracy*

Dilemma of nanotechnologies

(applies to many new technologies)

If problems surface, momentum of technologies has built up so that they are difficult to change



When technologies can still be changed, problems are not yet clear

Risk Governance: classification

Risk-situation

Simple

Complex

Uncertain

Ambiguous

Examples of classification

(nanotechnologies)

Simple	Toxicity of degradable nanoparticles
Complex	Sustainable development
Uncertain	Toxicity of synthetic non- degradable nanoparticles
Ambiguous	Human enhancement

Risk Governance: classification

<i>Risk-situation</i>	<i>Approach</i>	<i>Involved groups (and their specific expertises)</i>
Simple	Routine	Scientists (institutes)
Complex	Information + Scientists (NGO's)
Uncertain	<u>Precaution</u> + Stakeholders
Ambiguous	Discourse + Citizens

But, of course:

<i>Risk-situation</i>	<i>Approach</i>	<i>Involved groups</i>
Simple	Routine	Scientists (institutes)
Complex	Information + Scientists (NGO's)
Uncertain	Precaution	
Ambiguous	Discourse	Citizens

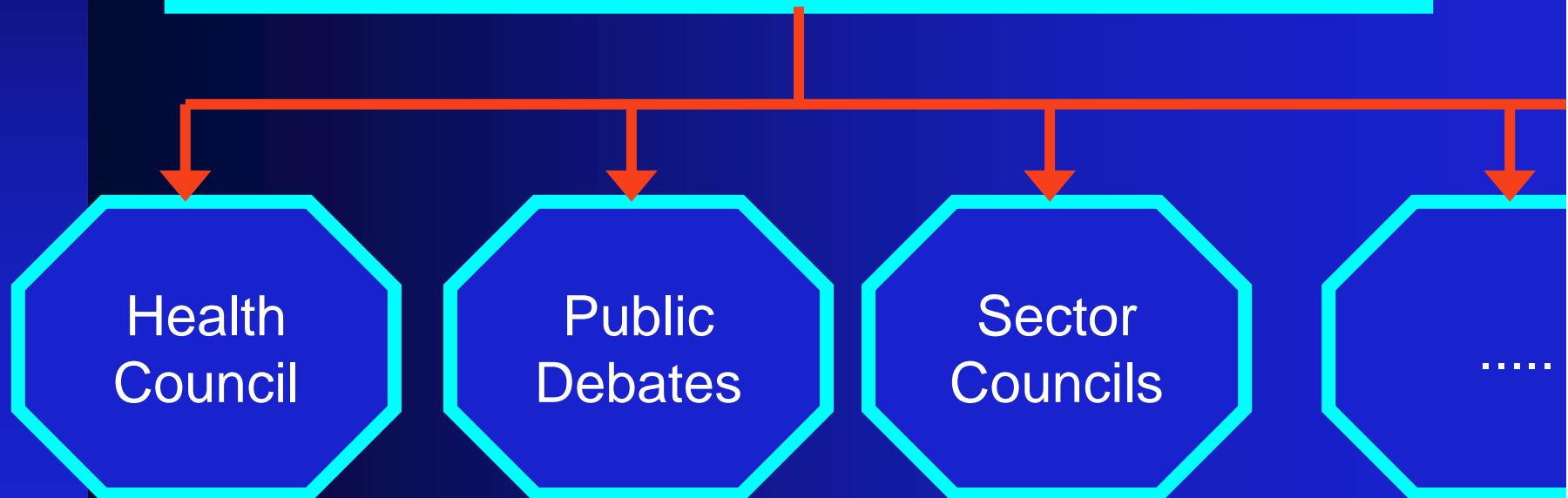
Who decides?

'triage' of risk & expertise

Broad monitoring committee

Advises government on nanotechnologies' state of the art and associated risk classification

With heterogeneous membership of citizens, stakeholders, scientific & technical experts



Conclusion (1): on Expertise & Democracy

1. Democratic technological cultures need balancing of different kinds of expertise
2. Our 'theory of scientific advising' provides a framework to discuss and shape this 'balancing' act
 - It points to the need for institutions such as the Health Council of the Netherlands, or the US National Academy of Sciences, to take a "third position"
 - It specifies when/where/what kinds of expertise are called for, and in which forms of representative/participatory democratic deliberation they should figure

Conclusion (2):

on case-study

Institutions like the Health Council :

- serve democracy by providing an ('undemocratically') secluded space for scientific debate and advising
- create trust in scientific expertise while reflexively and consciously recognizing a constructivist epistemology

Conclusion (3): on Democracy, Politics, and Policy

In our modern technological cultures:

We need political experiments to develop
new forms of **democracy**,

That gradually build toward a new **political
constitution**

Incorporating proper **policy analysis**

References

- Bijker, W. E., Bal, R., & Hendriks, R. (2009). *Paradox of Scientific Authority: the role of scientific advice in democracies*. Cambridge, MA: MIT Press.
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- Bijker, W. E., & d'Andrea, L. (Eds.). (2009). *Handbook on the Socialisation of Scientific and Technological Research. A tool for promoting science and technology socialisation policies addressed to policy makers, research and innovation actors and stakeholders*. Brussels: EU. (<http://www.techresp.eu/>)

<http://www.fdcw.unimaas.nl/staff/bijker>

Precautionary principle:

Act (including possibility of non-intervention) :

- *because* there are scientific indications of serious damage
- *although* there is insufficient scientific knowledge

Discussion of Precaution

- Two versions:
 - Strong: *“if no proof of safety, do not apply”*
 - Weak: *“lack of certain knowledge is no reason to abstain from intervention”*
- Burden of proof:
 - Reversal?
 - Redistribution!
- Evaluation: between extremes such as
 - *“the end of all innovation ! ”*
 - *“at last we can stop capitalist technology-push ! ”*
- Problem: when and how to apply?
(cf. Wittgenstein)