

A photograph of the TU Delft tower, a tall, cylindrical structure with a lattice top, set against a clear blue sky. In the foreground, a large, modern amphitheater with wide, light-colored concrete steps is visible. Many people are sitting on the steps and on the grassy slope to the right. The scene is bright and sunny.

New Technologies as Social Experiments

Challenges for regulation and governance of risks

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13-11-2012



Overview


- Aim: to develop criteria for *responsible* experimentation
- Governance challenges
- Responsible experimentation
 - Ethical principles for research involving humans
 - Management of technology in society

1.

Governance challenges

Governance challenges

- Tensions between public interests
 - “from risk society to safeguard society” (inaugural address Bärbel Dorbeck-Jung)
- Problems of Governability
 - General governance constraints (effectiveness, efficiency, acceptance)
 - Uncertainty
 - Undesirable path dependencies



“In many cases the governance of risks will involve precaution in the sense of a cautious and flexible strategy that enables learning from restricted errors, new knowledge, and visible effects, so that adaption, reversal, or adjustment of regulatory measures is possible”

“The question ‘how safe is safe enough’ is replaced by the question ‘how much uncertainty is the collective willing to accept in exchange for some benefit(s)?’ ”

(Marjolein van Asselt and Ortwin Renn, JRR, 2011)

2.

Responsible experimentation

From de facto to deliberate experiments


- “[W]e are in an unavoidably experimental state” (EU expert group)
- “If a dangerous or otherwise questionable activity is going to be performed, it is usually better to perform it in a research project than outside of a research setting” (Hansson, “Do we need a special ethics for research?”, 2011, 27)

Ethical principles for research involving humans

- Respect for persons
 - Informed consent
- Beneficence
 - No harm
 - Maximize benefits, minimize risk
- Justice
 - Just distribution of benefits and harms

(Belmont Report 1979)





Principles cannot be directly applied

- Risks only partly known (ignorance)
- Individual versus collective setting
- Controllable environment versus open environment
- But: moral reasons that underpin principles are still relevant

Respect for persons

- Informed consent
 - Can people rationally consent to unknown risks?
 - Too strict?
- Underlying concern: moral autonomy
- Possible conditions:
 - Experimental subjects are informed about potential hazards, uncertainties, ignorance and expected benefits
 - Approved by democratically legitimized bodies
 - Experimental subjects can influence the setup, carrying out and stopping of the experiment

Benificence

- Do not harm?
- Maximize possible benefits and minimize possible harms.
- Benefits and harms (risks) often unknown
- Possible conditions:
 - Absence of other reasonable means for gaining knowledge about hazards
 - Possibility to stop the experiment
 - Containment of hazards as far as reasonably possible
 - Reasonable to expect social benefits from the experiment
 - Proportionality



Justice

- Distributive justice
- Possible conditions:
 - Vulnerable experimental subjects are either not subject to the experiment or are additionally protected
 - A fair distribution of potential hazards and benefits among different groups and among different generations

Management of technology in society

Main concerns:

- Flexibility and adaptivity
- Learning
- Conscious experiment
- Resilience of receiving system

Possible conditions:

- Monitoring
- Consciously scaling up
- Flexible set-up
- Avoid experiments that undermine resilience of receiving 'system'

Possible conditions

1. Absence of other reasonable means for gaining knowledge about hazards
2. Monitoring
3. Possibility to stop the experiment
4. Consciously scaling up
5. Flexible set-up
6. Avoid experiments that undermine resilience of receiving 'system'
7. Containment of hazards as far as reasonably possible
8. Reasonable to expect social benefits from the experiment
9. Experimental subjects are informed
10. Approved by democratically legitimized bodies
11. Experimental subjects can influence the setup, carrying out and stopping of the experiment
12. Vulnerable experimental subjects are either not subject to the experiment or are additionally protected
13. A fair distribution of potential hazards and benefits

Specifying conditions: nano-particles on the workflow (1/3)

1. Absence of other reasonable means for gaining knowledge about hazards
 - Toxicological research takes a very long time, is that absence?
2. Monitoring
 - Yes, Health Council aims for health monitoring
3. Possibility to stop the experiment
 - Problematic in workplace setting
4. Consciously scaling up
 - May be less relevant in workplace setting
5. Flexible set-up
 - When companies have invested in protection, how willing are they to change to new or more protective measures?

Specifying conditions to the context of nano-particles (2/3)

6. Avoid experiments that undermine resilience of receiving 'system'
 - Environmental considerations
7. Reasonable to expect social benefits from the experiment
 - Use in medicine versus use for luxury products
8. Experimental subjects are informed
 - Employers don't want to make their employees overly concerned.
9. Approved by democratically legitimized bodies
 - Touches upon many governance issues (soft versus hard regulation, role of codes of conduct, etc)

Specifying conditions to the context of nano-particles (3/3)

11. Experimental subjects can influence the setup, carrying out and stopping of the experiment
 - To what extent are employees able to influence their working conditions (use of personal measures versus special spraying installations)?

12. Vulnerable experimental subjects are either not subject to the experiment or are additionally protected
 - Who counts as vulnerable? Should not all employees be considered vulnerable (based on the duty of care of the employer)?

13. A fair distribution of potential hazards and benefits
 - May be problematic in a commercial setting (companies get the profit and employees get the health risks)

Overall project + future work

