exploring responsible innovation as a guiding concept

the case of neuroimaging in justice & security

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the project

- Neurosciences in Dialogue
- program “societal responsible innovation”
- societal embedding of neuroimaging in justice and security

- potential “responsible innovation” as a guiding concept to achieve this aim?

what is RI?

- concept from policy domain
- grants
- societal and ethical issues
- redirection of science
- under negotiation
- targeted scientists

→ what are they held accountable for?

neuroimaging in justice & security

- neuroimaging in domain of justice
  - human identity
  - criminal responsibility
  - determinism
  - foundation of justice system

neuroimaging in justice & security

- Brain and Cognition: societal innovation
  - major program Dutch scientists in this field
  - targeted by demands for RI
- scientists
  - neurosciences, cognitive psychiatry, cognitive psychology

aim

explore meaning negotiation RI by looking at

- formal conversation:
  - scientific literature
- informal conversation:
  - scientists targeted by demands for RI
  - case study approach:
    - scientists employing neuroimaging for concepts relevant to justice and security

to formulate recommendations on RI as a guiding principle

method I

- formal conversation
  - systematic search literature
  - Google Scholar, Scopus, Web of Knowledge, Proquest, Ebscohost
  - 71 documents
    - RI not primary subject
  - qualitative analysis software MAXQDA
  - inductive coding

method II

- informal conversation
  - 20 semi-structured interviews
    - part of larger interview
  - maximum variation sampling
  - scientifically informed interviewer, mimicking meaning negotiation interaction
  - qualitative analysis software MAXQDA
  - inductive coding

results formal conversation

- authors outside natural sciences

- no neuroscientists

results formal conversation

- RI is about
  - engagement of societal stakeholders
  - broadening
  - impacts and regulation
  - anticipation and adaptability
  - the process of innovation, its products (and innovators)

  …

results formal conversation

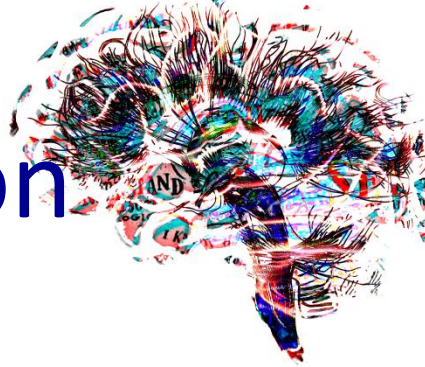
continued…

- upstream + throughout the whole process
  - e.g. early normative choices

→ targeted scientists accountable for this

but… informal?

results informal conversation



- RI unfamiliar
  - some skeptics
    - especially regarding societal stakeholder engagement

results informal conversation

How do you expect (…) society, to have a voice in the innovation process? (…) Then money would go to sophisticated vending machines, or nicer TVs. Society couldn't care less that we develop things that are for the benefit of medicine. People who play soccer every weekend, and hundreds of thousands of them watching it on TV. [Soccer players] earn more than those who are interested in innovation and trying to help others. Thát is society. They weigh it thát way. So I do not expect that much of society as a voice in innovation.

(Male, Psychiatry/Neuroscience)

results informal conversation I

- RI unfamiliar
- focus on technical, scientific and economic considerations
- societal benefits
  - but also seen as inherent to science
- evidence-based policy
  - they deliver the evidence, policy-makers normative choice (end)

…

results informal conversation II

continued…

- at implementation, downstream

- relating to role responsibilities of scientists

differences meaning negotiation

formal	informal
engagement of societal stakeholders	appreciation of experiential knowledge?
broadening	technical, scientific and economic considerations
impacts and regulation	societal benefits (inherent) normative decisions → policy-makers
anticipation and adaptability	-
process and product	innovator, role responsibilities
upstream, whole process	downstream, implementation

discussion

- what does this mean for RI as a guiding principle in a project towards societal embedding?

recommendations

- take into account the wide conceptual gap
- operationalisation of RI
  - in specific context
  - co-construction with targeted scientists
    - (transaction vs transmission)
- expect resistance
  - experiential knowledge
  - normative-position-taking

recommendations

- upstream – downstream disparity?
  - practice can be different
- point of entrance for interactive operationalisation
  - role responsibilities
    - but in a new model of science
    - breaking open moral labor division

final thoughts

- hype of RI?
- in what way(s) different from other efforts towards relevancy of science? (TA)
- top-down. evasive practices?
  - scientist: “mere managers’ language”
- operationalisation, practice, evaluation of RI + tools for RI
- high stakes, failure of RI as a concept

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Objective

- *to improve the societal embedding of neuroimaging in the domains of healthcare,education and justice by facilitating a science-society dialogue process in which*
  - *(1) stakeholders from science and society are actively involved in an open exchange, planning, action and reflection process,*
  - *(2) both scientific and practical knowledge are integrated, and*
  - *(3) mutual learning is enhanced, leading to identified actions for social responsible technology development.*

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