

Societal value of scientific research: five thoughts about responsible evaluation



In the next 1,5 hours



- What does responsibility in evaluation mean to you?
- Evaluation of societal relevance: problems
- How to responsibly evaluate societal relevance: five thoughts
- How to connect these thoughts to your professional practice.

Responsible evaluation

- Why is evaluation (of research and/or societal relevance) important and/or required?
- What makes it responsible?



Has the tide turned towards responsible metrics in research?

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The importance of responsible evaluation



Let's change what we value in research.



COMMENT

RESEARCH Data needed to drive UN development goals **p.402**

ENVIRONMENT Economics and environmental catastrophe **p.404**

RESEARCH Questions raised over proposed Anthropocene dates **p.408**

RESEARCH Music inspired Newton to add more colours to the rainbow **p.408**



The Leiden Manifesto for research metrics

Use these ten principles to guide research evaluation, urge **Diana Hicks, Paul Wouters** and colleagues.

ly used to govern evaluations that e and performed e and reliable on that evaluation is r than by judge- lence): usually es well informed. Imagining the sy- quired to improve- gely implemented knowledge of, or

advice on, good practice and interpretation. Before 2000, there was the Science Citation Index or ISI from the Institute for Scientific Information (ISI), used by experts for specialist analyses. In 2002, Thomson Reuters launched an integrated web platform, making the Web of Science database widely accessible. Competing citation indices were created: Elsevier's Scopus (released in 2004) and Google Scholar (beta version released in 2004). Web-based tools to easily compare institutional research productivity and impact



The Metric Tide
 Report of the Independent Review of the Role of Metrics in Research Assessment and Management
 July 2018

The problem with quantitative metrics



- Focus on what can be counted and included in databases
- Evaluation gap: discrepancy between what indicators evaluate and evaluation criteria, and the ambitions, missions, realities and practices of science.
- Too much investment in and deference to indicators may give us “goal displacement” and a sense of false security. At the heart of evaluation lies a conversation about value that cannot be had with indicators alone.

What do methods and tools for evaluating the societal value of science need to contend with?

- Value comes in many different forms which makes measurement and comparability complicated
- Impact develops over longer periods of time
- Impact is influenced by many factors beyond the control of researchers involved
- Immediate responses from society or interactions between research and societal stakeholders are more concrete and verifiable
- Process versus outcome



How to responsibly use available methods to evaluate societal value?

Some thoughts



1) The purpose of evaluation



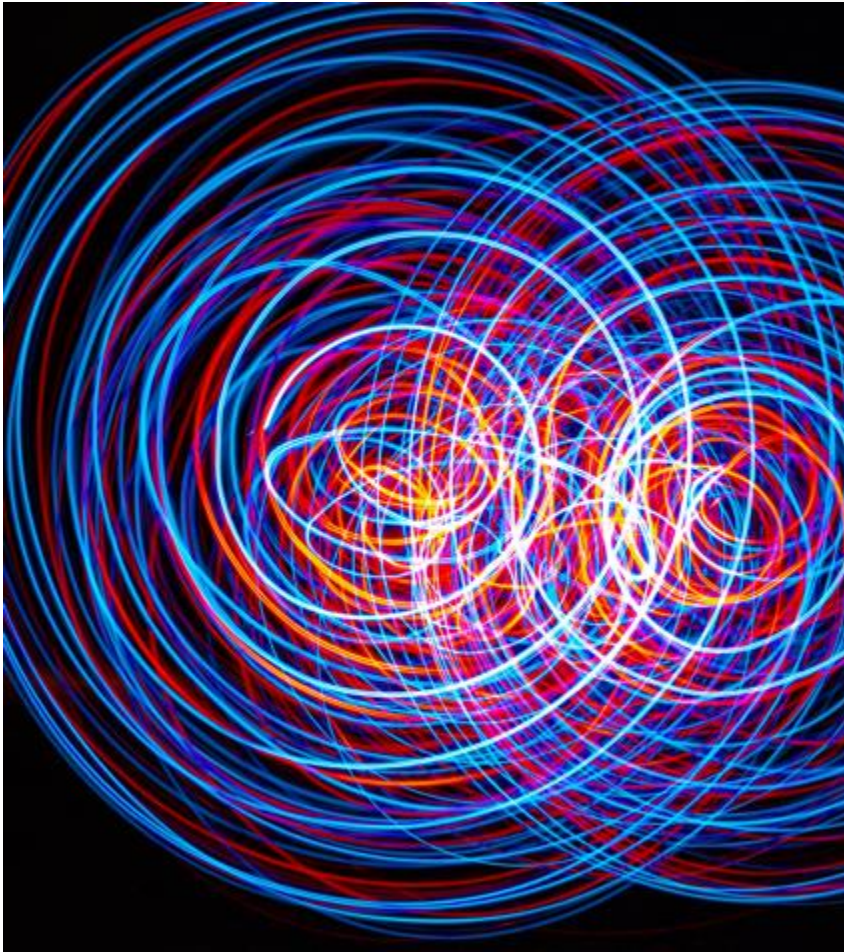
- What do you want to know, and why?
- Accountability and/or strategy and learning
- Invest time in focusing the research question

2) The context

- Disciplinary context
- Organizational context
- The role of society or non-academic partners



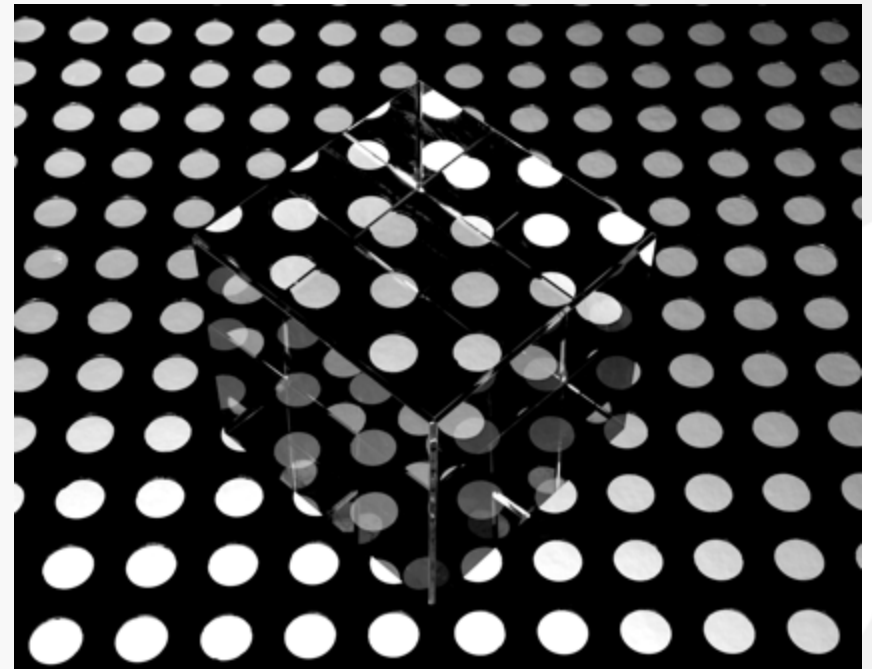
3) Mixing methods



- There are a host of methods that provide insights into the value of research, use them in combination
- Use metrics to support narratives
- Use evidence as part of the conversation rather than to end one.

4) Theoretical assumptions of methods

Methods hide assumptions about relations between science and society, knowledge production, value and actors involved.



Four key aspects (Smits and Hessels 2021)

- The types and roles of actors considered part of the production of knowledge
 - Who is doing the science after all?
- Mechanisms of interaction between research and society
 - Linear
 - Cyclical
 - Co-production
- Concepts of societal value
 - Impact as product
 - Impact as use
 - Impact as benefit
- Understanding of the relationship between scientific and societal value of scientific research,
 - Integrated
 - Separated

Some examples (Smit and Hessels, 2021)

Public Value Mapping	Institutional, social and economic 'end users'; 'knowledge value collectives' as translators of research to new uses	<i>Cyclical</i> : Knowledge value collectives	<i>Mixed</i> : Tracked backwards from public benefits to societal use and research outcome	Integrated
Monetisation	Clinicians as users, patients as beneficiaries	<i>Linear</i> : Linear chain	<i>Benefit</i> : Improvements to healthcare	Implicitly connected
Flows of Knowledge	Practitioners and policymakers as specific users; organizations and individuals as intermediaries	<i>Cyclical</i> : Dynamic process of iterative dialogue and reciprocal benefits	<i>Benefit</i> : 5 types of impact (instrumental, conceptual, capacity, cultural and connectivity)	Distinctive categories
SIAMPI	Actors from science, industry, government and non-profits as stakeholders in knowledge use	<i>Cyclical</i> : Productive interactions	<i>Use</i> : (productive interactions)	Not clearly distinguishable
Contribution Mapping	Scientific and societal actors (including organizations, objects) engaged in priority-setting, proposal selection; producing, combining and using knowledge	<i>Co-production</i> : Alignment	<i>Use</i> : Contribution to actor scenarios	Integrated
Impact Narratives (REF)	Non-academic actors from society, economy, culture and public policy as (potential) beneficiaries	<i>Linear</i> : Linear exchange	<i>Benefit</i> : Effect, change or benefit beyond academia	Causally related

5) Who gets to speak?

- Who?
- When?
- Why?



In conclusion: no blueprints!



- Take time to focus your evaluative concerns and questions
- Mind the context, organizational or disciplinary
- Mix methods in a smart way
- Mind the theoretical assumptions hidden in these methods
- Consider who to invite to give evaluative input

Reflections



- What resonated and what didn't?
- How to connect all this to your professional practice?

References

- Hessels, van Drooge, Holtrop, Costas Comesana (2022) Responsible metrics for societal value of scientific research. *Leiden Madtrics*
- Smit, Hessels (2021) The production of scientific and societal value in research evaluation: a review of societal impact assessment methods. *Research Evaluation* 30 (3)
- Holtrop, Hessels, Prins (2020) Evaluative Inquiry I-IV. *Leiden Madtrics*
 - Academic value is more than performance
 - Evaluating research in context
 - Mixing methods for evaluating research
 - Accountability and learning

Thanks!

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