The Drama of Responsible Research and Innovation:
The Ups and Downs of a Funding Policy

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A snapshot at (some) results from NewHoRRizon

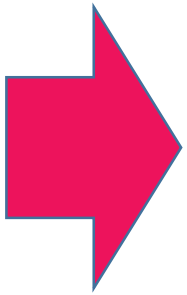
November, 2020

Content

SOCIETAL ENGAGEMENT AND CO-CREATION

- What have we learned about these issues from your projects?
- What is in your opinion the state-of-the-art on these issues?
- What new developments, perspectives and questions are important going forward?
- How and in what ways should societal engagement and co-creation be addressed in the upcoming Horizon Europe programme and calls, as well as other contexts?

RRI



MAINSTREAMING RRI

- What is RRI and what is the short history?
- Why do we consider RRI a fragile funding line?
- Why did RRI not emerge and continue as strong funding line?
- 3 main advocacy coalitions (who? core values? strategy?) -- Sabatier's Advocacy Coalition Approach
- Contrast: European Research Council
- Concluding remarks

SE & CC “vs.” RRI

- SOCIETAL ENGAGEMENT AND CO-CREATION IN H2020-PROJECTS AND BEYOND

RRI

is a cross cutting issue in “Horizon Europe.”

“RRI is an approach that anticipates and assesses potential implications and societal expectations with regard to R&I, with the aim to foster the design of inclusive and sustainable R&I.

RRI implies that societal actors (researchers, citizens, policy makers, business, third sector organisations, etc.) work together during the whole R&I process in order to better align both the process and its outcomes with the values, needs and expectations of society.
RRI is implemented as a package that includes multi-actor and public engagement in R&I, enabling easier access to scientific results, the take up of gender and ethics in the R&I content and process, and formal and informal science education.”

(https://ec.europa.eu/programmes/horizon2020/en/h2020-section/responsible-research-innovation; 19.8.2020)

Analysis

- Macro: conceptual challenges and policy paradigm options (method: diagnosis & action research)
- Meso: institutional challenges, learning and possibility for change (method: diagnosis & action research)
- Micro: project and individual researcher's involvement and engagement (method: diagnosis & action research)

Our focus:

- ✓ **Policy level**
- ✓ **Policy imple-mentation**

NEW HORRIZON

PARTICIPATORY ENGAGEMENT EXPECTATIONS SCIENCE
CONSTRUCTION ENGAGED FOSTER SOCIETAL NEEDS CITIZENS ACTORS DIALOGUE CREATION PUBLIC AMBITIONS CONNECTION RESEARCH
RESPONSIBLE INNOVATION
INCLUSIVE POLICY INNOVATIVE CIVIL SCIENTIFIC CHALLENGES ASPIRATIONS
EUROPEAN SOLUTIONS SOCIETY COMMUNITY

ABSTRACT

NH is about mainstreaming Responsible Research and Innovation (RRI) through analysing current uptake, experimenting with potential future measures and making evidence based policy recommendations for EC research funding and beyond.

BACKGROUND

Responsible research and innovation actions are promoted via 'Science with and for Society' objective via: thematic elements (public engagement, open access, gender, ethics, science education), and via integrated actions that for example promote institutional change, to foster the uptake of the RRI approach by stakeholders and institutions. RRI is furthermore a 'cross-cutting issue' in Horizon 2020, which will be promoted throughout Horizon 2020 objectives.

SOCIAL LABS

NH is creating 18 social labs to observe, intervene, experiment and analyse RRI uptake in Horizon 2020 as well as measures that will assist mainstream RRI in FP9 and beyond. Social Labs focus on a RRI social challenge in a specific program line of H2020, create a core group of stakeholders who work together over time, inviting also other stakeholders, to experiment with and analyse the impact of interventions to come up with evidence based policy proposals.

ETHICS

Ethics is one of the key thematic elements of RRI as well as one of the "keys" used by NewHoRRIzon to assess RRI uptake. Ethics in research is broadly understood, therefore some theoretical limitations and/or a unified understanding of how ethics may/should play a role in RRI is needed. New HoRRIzon will make use of SATORI findings in this regards as well as utilize the CWA as well as the stakeholder inclusive process behind SATORI.

PROJECT COORDINATION

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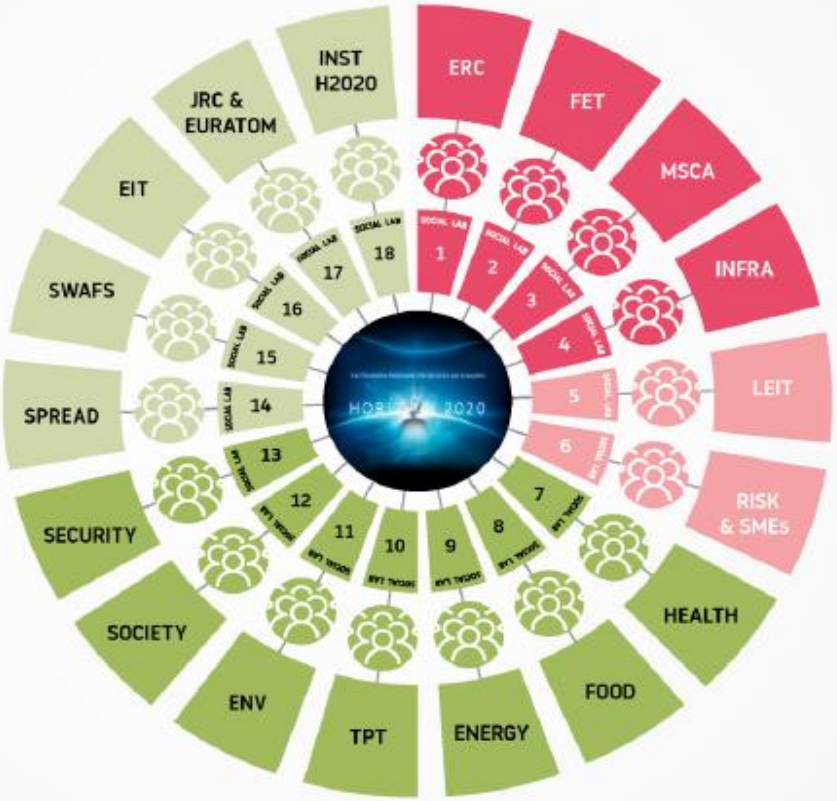

ECVELLENT SCIENCE

SOCIAL LAB 1
European Research Council
SOCIAL LAB 2
Future and Emerging Technologies
SOCIAL LAB 3
Marie Sklodowska Curie Actions
SOCIAL LAB 4
Research Infrastructures, including e-Infrastructures

INDUSTRIAL LEADERSHIP

SOCIAL LAB 5
Leadership in Enabling Industrial Technologies
SOCIAL LAB 6
Acces to Risk Finance & Innovation in SMEs

SOCIETAL CHALLENGES

SOCIAL LAB 7
Health, Demographic Change and Wellbeing
SOCIAL LAB 8
Food Security, Sustainable Agriculture and Forestry, Marine, Maritime and Inland Water Research and Bioeconomy
SOCIAL LAB 9
Secure, Clean and Efficient Energy
SOCIAL LAB 10
Smart, Green and Intergrated Transport
SOCIAL LAB 11
Climate Action, Environment, Resource Efficiency and Raw Materials
SOCIAL LAB 12
Europe in a changing world - Inclusive, innovative and reflective societies
SOCIAL LAB 13
Secure societies – Protecting freedom and security of Europe and its citizens

DIVERSITY OF APPROACHES

SOCIAL LAB 14
Spreading Excellence and Widening Participation
SOCIAL LAB 15
Science with and for Society
SOCIAL LAB 16
European Institute of Innovation and Technology
SOCIAL LAB 17
Non-Nuclear direct actions of the JRC and ERRATUM
SOCIAL LAB 18
Instruments of H2020

Grant Agreement No.: 741402
Project Start Date: May 1st, 2017
Duration of project: 48 months

NEWHORRIZON.EU

Key publications (Science Magazine; JRI)

SCIENCE AND SOCIETY

Improve alignment of research policy and societal values

The EU promotes Responsible Research and Innovation in principle, but implementation leaves much to be desired

By Peter Novitzky,[1] Michael J. Bernstein,[2] Vincent Blok,[3] Robert Braun,[3] Tung Tung Chan,[4] Wout Lamers,[4] Anne Loeber,[5] Ingeborg Meijer,[6] Ralf Lindner,[6] Erich Griessler[3]

Historically, scientific and engineering expertise has been key in shaping research and innovation (R&I) policies, with benefits presumed to accrue to society more broadly over time (1). But there is persistent and growing concern about whether and how ethical and societal values are integrated into R&I policies and governance, as we confront public disbelief in science and political suspicion toward evidence-based policy-making (2). Erosion of such a social contract with science limits the ability of democratic societies to deal with challenges presented by new, disruptive technologies, such as synthetic biology, nanotechnology, genetic engineering, automation and robotics, and artificial intelligence. Many policy efforts have emerged in response to such concerns, one prominent example being Europe's Eighth Framework Programme, Horizon 2020 (H2020), whose focus on "Responsible Research and Innovation" (RRI) provides a case study for the translation of such normative perspectives into concrete policy action and implementation. Our analysis of this H2020 RRI approach suggests a lack of consistent integration of elements such as ethics, open access, open innovation, and public engagement. On the basis of our evaluation, we suggest possible pathways for strengthening efforts to deliver R&I policies that deepen mutually beneficial science and society relationships.

Alignment of R&I objectives with societal benefits, which transcend exclusive economic value, is a globally relevant concern (3). Aspiration of stronger science and society interrelationships have been visible in U.S. research management efforts, as well as in Canada and Europe. In H2020, to which the European Commission (EC) allocated nearly €80 billion for the 2014–2020 funding period, the EC enumerated RRI as a priority across all of H2020 activities (a "cross-cutting issue") to deepen science and society relationships and be responsive to societal challenges. To date, €1.88 billion have been invested across 200 different R&I areas (e.g., quantum computing, graphene nanotechnology, human brain research, artificial intelligence) in more than 1100 projects related to various dimensions of RRI (see the figure). Inclusion of RRI in Horizon 2020 aims to integrate research policy and societal concerns, including about gender in science, and about disruptive technologies such as robotics.

H2020 reflected the commitment of the European Union (EU) to the precautionary principle with regard to R&I policy, and the deepening commitment of the EC to mainstream concerns related to science and society integration (4, 5).

RRI principles and practices have been designed to enhance inclusive and democratic modes of conducting R&I to reflect current forms and aspirations of society (4). Formal adoption and exploitation of RRI in H2020 coalesced around six thematic domains of responsibility ("keys"): public engagement, gender equality, science education and science literacy, open access, ethics, and governance (6). As a relatively young concept, these six keys cover only a part of RRI as it is discussed in the academic literature. Their integration in the European R&I ecosystem was advanced by various political- and policy-level ambitions (3–5). The forthcoming Ninth Framework Programme, Horizon Europe (2021–2027), includes further mention of RRI, as well as additional efforts to increase responsiveness of science to society through elements of the so-called "three O's agenda" (i.e., open innovation, open science, openness to the world) (7).

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Responsibility is normative political wish/position as opposed to properly implemented policy in the EC

Social labs are appropriate to address change on multiple levels.

JOURNAL OF RESPONSIBLE INNOVATION
https://doi.org/10.1080/23299460.2020.1787751

Routledge
Taylor & Francis Group

RESEARCH ARTICLE

OPEN ACCESS Check for updates

Social labs as an inclusive methodology to implement and study social change: the case of responsible research and innovation

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ABSTRACT

The embedding and promotion of social change is faced with a paradoxical challenge. In order to mainstream an approach to social change such as responsible research and innovation (RRI) and make it into a practical reality rather than an abstract ideal, we need to have conceptual clarity and empirical evidence. But, in order to be able to gather empirical evidence, we have to presuppose that the approach already exists in practice. This paper proposes a social lab methodology that is suited to deal with this circularity. The methodology combines the defining features of social labs emerging from the literature such as agility and real-world focus with established theories and approaches such as action research and experiential learning. Thereby it enables the parallel investigation and propagation of RRI. The framework thus constructed provides a theoretical embedding of social labs and overcomes some of the known limitations of the constitutive approaches.

ARTICLE HISTORY
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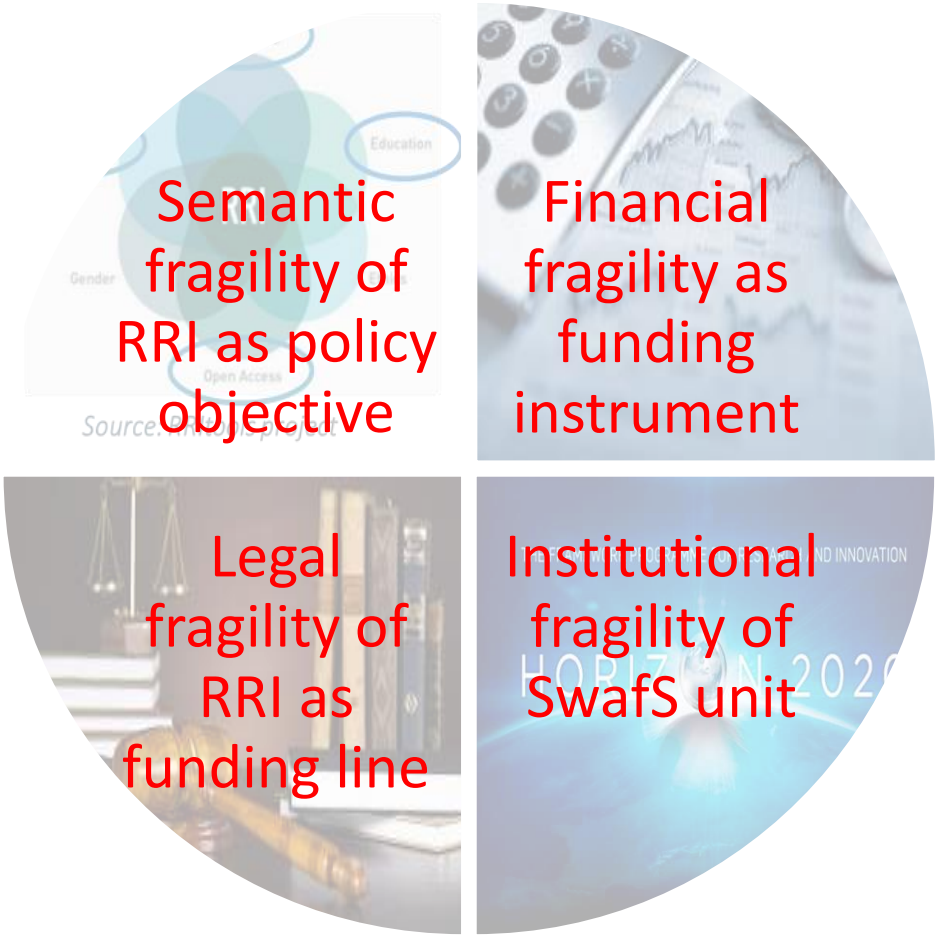
KEYWORDS
Responsible innovation; social lab; hermeneutics; research methodology; emerging social phenomena

https://science.sciencemag.org/content/369/6499/39

Main Question

Why did RRI not emerge and continue as influential funding instrument and implemented policy (on proposal & evaluation levels), despite two decades of addressing science-society interrelations with EC funding?

4 elements of fragility of RRI as EC funding line



Semantic fragility of RRI as policy objective

7th Framework Programme, Science in Society (SiS)

The "definition debate"

2007 — **2013** — **2014** — **2016**

"SiS" fostering

1. public engagement as two-way dialogue between civil society and science
2. gender
3. science communication

Umbrella Approach "RRI keys"

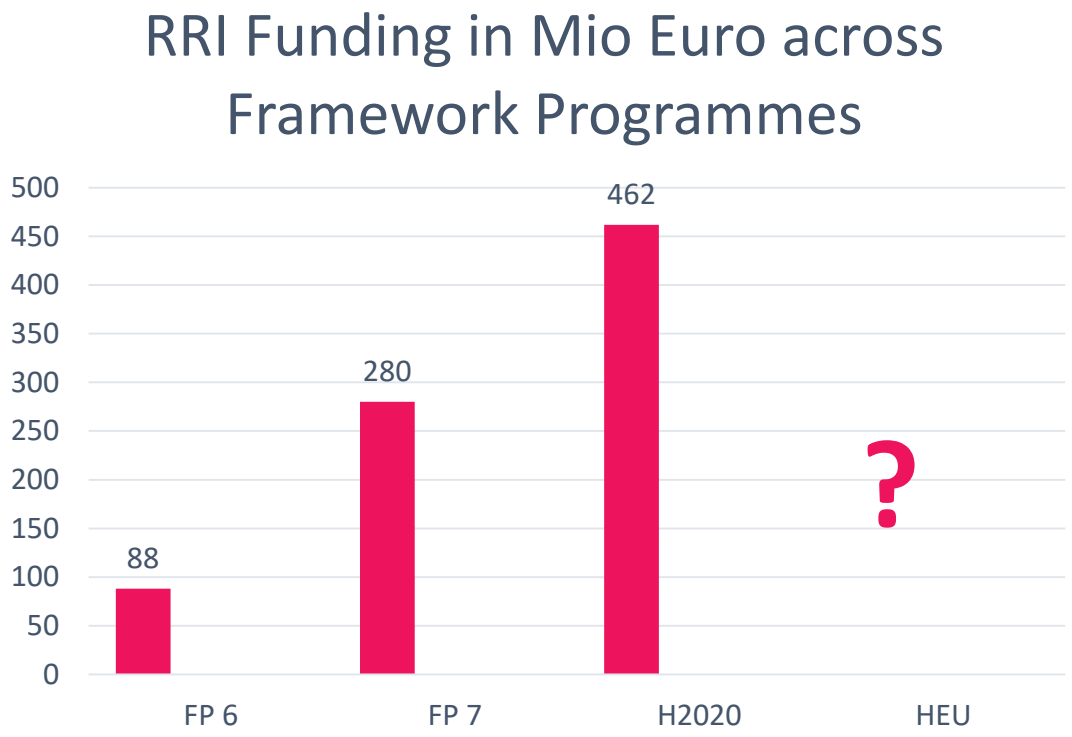
Rome Declaration

1. Gender equality
2. Research ethics
3. Science education
4. Open access
5. Public Engagement
6. Governance

Three O Strategy

1. **Open** Innovation,
2. **Open** Science,
3. **Open** to the World

Financial fragility of RRI as funding instrument



Horizon Europe: total of 400 Mio Euro for “Reforming and enhancing the EU Research and Innovation System” allocated across 14 action lines.

Legal fragility of RRI as funding line

H2020

- RRI explicitly mentioned in the legal basis (for the first time in European FP).
- Implemented in a twofold approach:
  - Establishing a dedicated SwafS Programme
  - Cross-Cutting Issue Article 14 a "RRI including gender"

The "legal framing" problem

Horizon Europe

- No "Swafs"-like activities" in "Widening and Enhancing the ERA"
- RRI marginally mentioned in HEU legal texts
  - Legally binding: Art. 2(2)c Specific Programme; promoting RRI, "taking into account the precautionary principle" as one of the operational objectives of the Specific Programme.
  - However, gender, ethics, open science, link between science and society mentioned elsewhere.
  - Not legally binding but guidance for interpretation. Recital 26: Programme "should engage and involve citizens and CSOs in co-designing and co-creating responsible research and innovation(RRI) agendas and contents that meet citizens' and civil society's concern, needs and expectations" (…) "across the Programme and through dedicated
  - Minor reference in Strategic Plan despite requests in open consultations

Institutional fragility of SwafS unit

The "bureaucracy issue"

2014 — **2019** — **2020**

- Separate "Swafs"-Unit B7 responsible for Science with and for Society (supported by Unit B of REA)
- two sub-units for Gender and RRI.
- Ethics and Open Access addressed in separate units.
- Continuous reduction in staff

- SwafS unit dissolved
- SwafS parts integrated in new Unit "Open Science" G.4
- Open Science (open science, open data)
- G.4.001 "Science in Society" (citizen science, research ethics, …)

What is an Advocacy Coalition?

An advocacy coalition contains

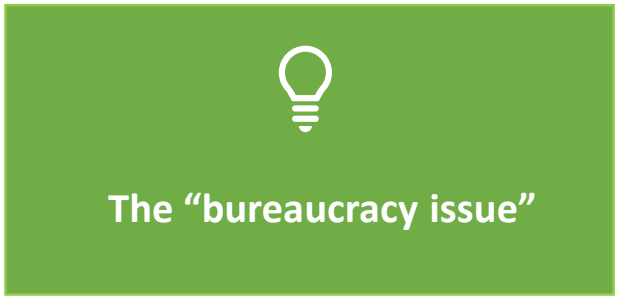
- ‘people from a variety of positions (elected and agency officials, interest group leaders, researchers)
- who share a particular belief system’ and ‘who show a non-trivial degree of coordinated activity over time’.

[Paul Cairney, Oxford Handbook of the Classics of Public Policy and Administration (editors: Ed Page, Steve Balla, Martin Lodge)

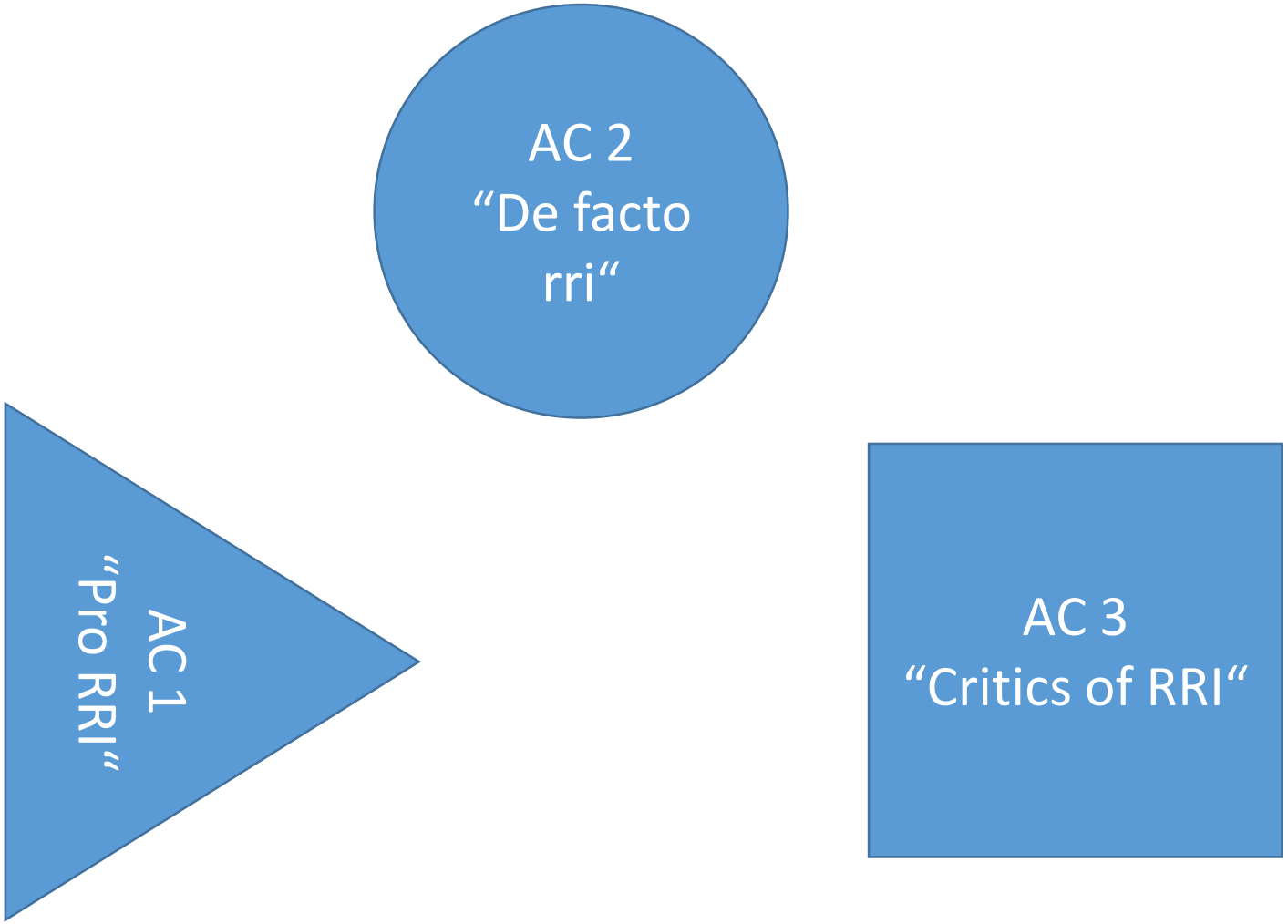
Why are beliefs important in politics?

An advocacy coalition contains

- ‘people from a variety of positions (elected and agency officials, interest group leaders, researchers)
- who share a particular belief system’ and ‘who show a non-trivial degree of coordinated activity over time’.
  - People engage in politics to translate their beliefs into action.
  - ‘Core’ beliefs are fundamental beliefs and unlikely to change (like a ‘religious conversion’) but too broad to guide detailed policy (such as one’s views on human nature).



Actor Coalitions in the struggle about RRI



Sketch of advocacy coalitions in RRI

	AC 1 "Pro RRI"		AC 2 "De facto RRI"	AC 3 "RRI critics and actors unaware of RRI"
	Pragmatists	**Developers of ideas**		
Actors	RFOs and national and European bureaucracies that sympathise with RRI	RPOs working on and using the concept of RRI, national and European bureaucracies, CSO	RPOs, RFOs, business, CSO which work with overlapping/competing concepts: sustainability, SDG, CSR, research ethics, gender, citizen & open science, integrity, SSH, transdisciplinarity, (P)TA …	RPOs, RFOs, policy makers, CSO who are critical of, or don't know the concept of RRI
Core value	"We need RRI to make R&I better" Non-linear innovation model: network, two-way-communication, citizen involvement, - participation, - engagement, openness, transparency, reflexivity		"rri is already done, no additional policy needed" Depending on the goal of specific line of "de-facto RRI" in innovation	"Excellent science and technology push with research ethics" Linear innovation model: curiosity-driven research, bottom up, autonomy
Strategy	Stressing political viability and pragmatism, clear, understandable definition, measure-ability of in/ output, impact (benefits)	Stressing analytical rigor, i.e. keeping definition open and flexibly, sceptic towards measurability	Sympathy for, but distance from RRI, trying to keep the own concept intact and running	Business as usual, stressing excellence and autonomy of science; "we are already doing RRI", RRI is unclear and potentially damaging to R&I, economy and society
Resources	Weak	Weak	Medium	Strong

4 elements of stability of ERC

Advocacy Coalition: strong, diverse, elite

- Outcome of successful “political campaign” (Luukonen 2014) or well-orchestrated political endeavor (König 2017)
- Advocacy Coalition:
  - scientific and scholarly communities,
  - European industries,
  - Politicians from member state at Council level,
  - European Parliament
  - European Commission (ibid.)

Semantic stability: Strong and unified policy message constantly repeated

Helga Nowotny, former ERC President (2010)

Core message I: "… without continuous investment into basic research, there will be no radical innovation in the future, innovation that has the potential of changing the technological paradigm of how the economy functions"

Core message II: "excellence is the only criterion that matters and we are not going in any other directions"

Strategy I: "This message has to be conveyed loudly and clearly (…) we need to influence the debate"

Strategy II: "Speak with one voice, speak at the right time, speak at the right place and above all, repeat, repeat, repeat the message and you will be heard (…) Your have to keep on it"

Institutional stability

- Funded within Framework Programme BUT
- Self-governance and autonomy

- "for scientists, by scientists"
- Scientific Council, President, Vice-President are scientists
- European Research Council Executive Agency (ERCEA) own body responsible for management of applications and grants of ERC

Answer

RRI advocates could not build an advocacy coalition with

(a) unified message,

(b) strong institutional embeddedness within the EC, and

(c) supporters within and in the orbit of R&I ecosystems.

Conclusion

To overcome (a) – (c)

(i) RRI advocates should develop a strong and unified policy message (instead of focusing on a 'definition'),

(ii) find key policy brokers in and outside the EC and effectively connect RRI to current changes in socioeconomic conditions (sustainability, responsibility, mistrust in science etc.)

(iii) RRI can transform into an integral element of European R&I funding

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https://newhorrizon.eu/

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