

# Research Talent RRI-day:

- \* RRI – what why how
- \* Open Science (and RRI)
- \* Research Integrity
- \* Innovation

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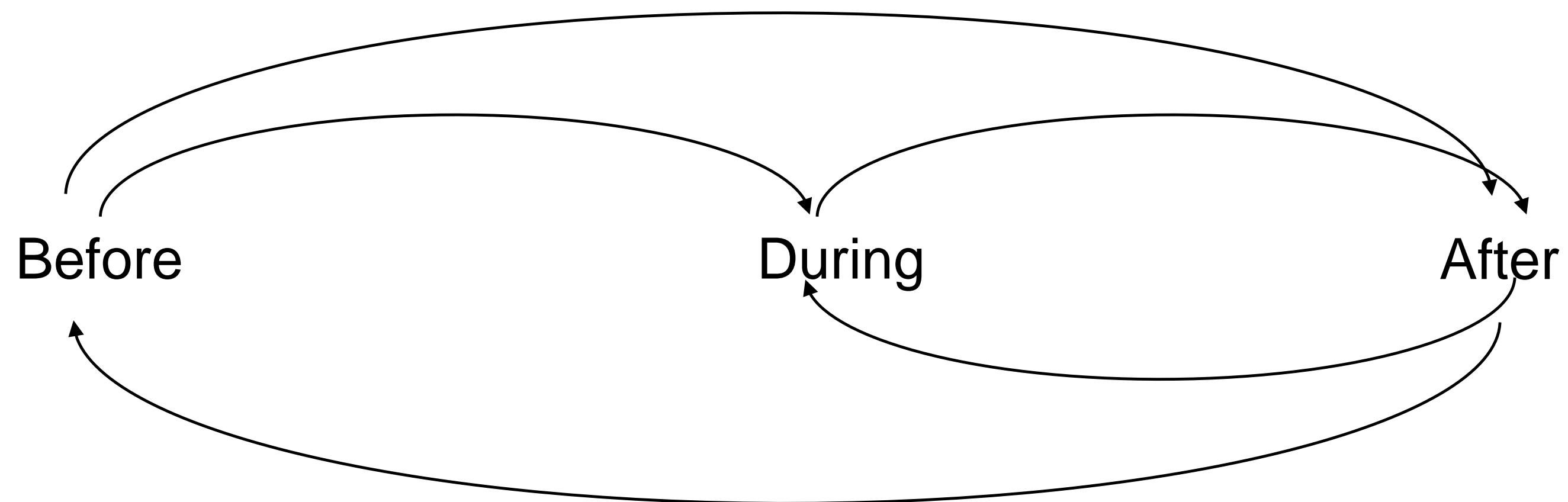
## Erik is

- Originally from the Humanities – history of religion
- Defended RRI thesis 28. jan 2020
- Committees for Research Ethics – Methods for doing Applied ETHics
- Holocaust Centre – Religious Minorities, History Didactics
- AFI: RRI, Ethical Methods, Assistive Technologies Climate Change,  
Human Cognitive Enhancement

# RRI – What, why and how



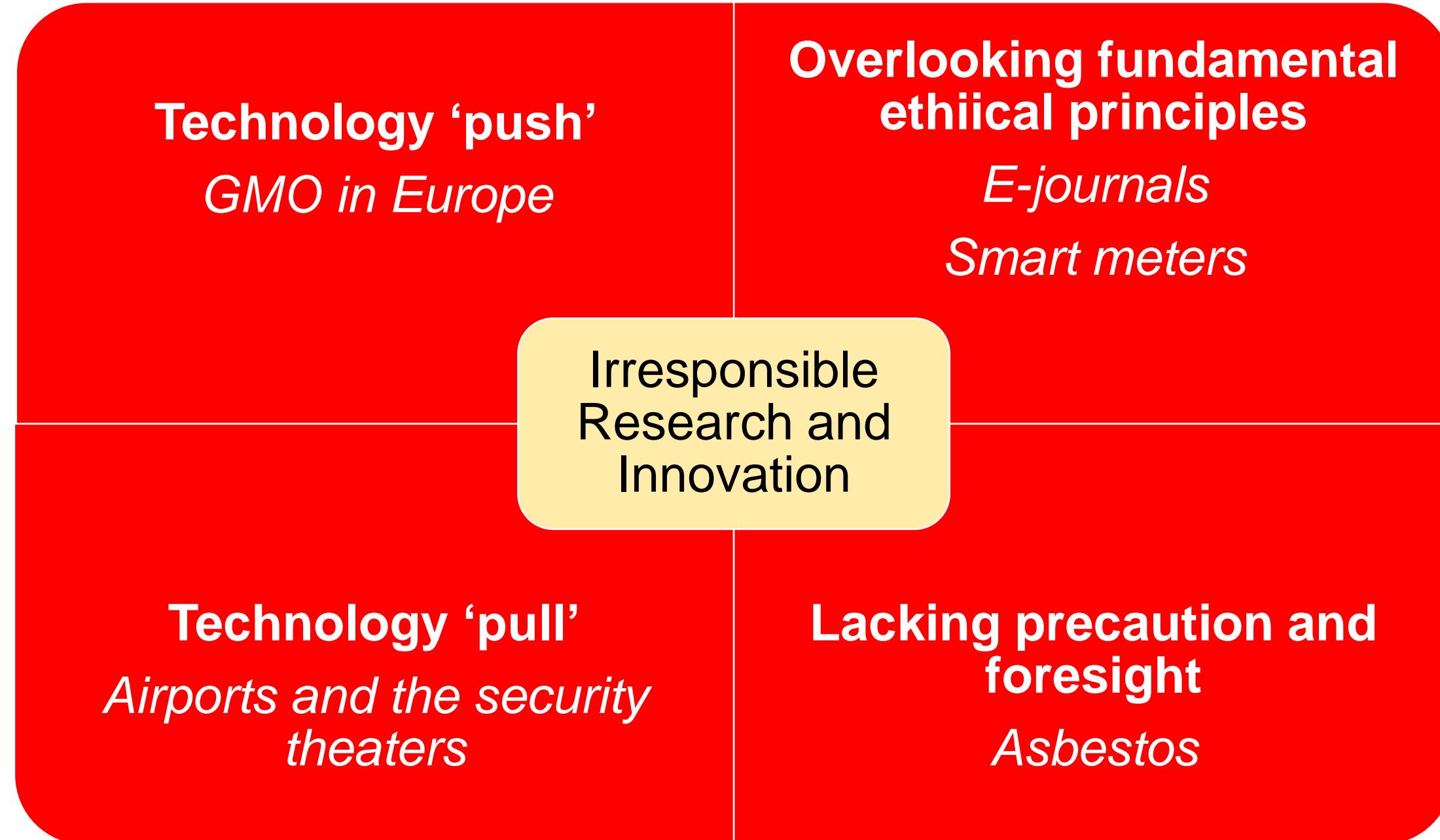
# «Responsibility» = Caring for values



# What is science? What is research?

- Science and research as social activites
- Science and research as novel risk
- Science and research as internal culture





**Look forward!**

Expectations and imaginations  
(possibilities) *Forventninger og  
forestillinger (muligheter)*

*From predication to participatory  
foresight*

**Invite along!**

*Dialogue*  
*Involvement (eg. mini-publics)*

Responsible  
research and  
innovation

**Think through!**

*Reflect!*

*Code of Conduct*

*Midstream modulation*

**Work together!**

*Answer and responses*  
*Differences and resiliences*

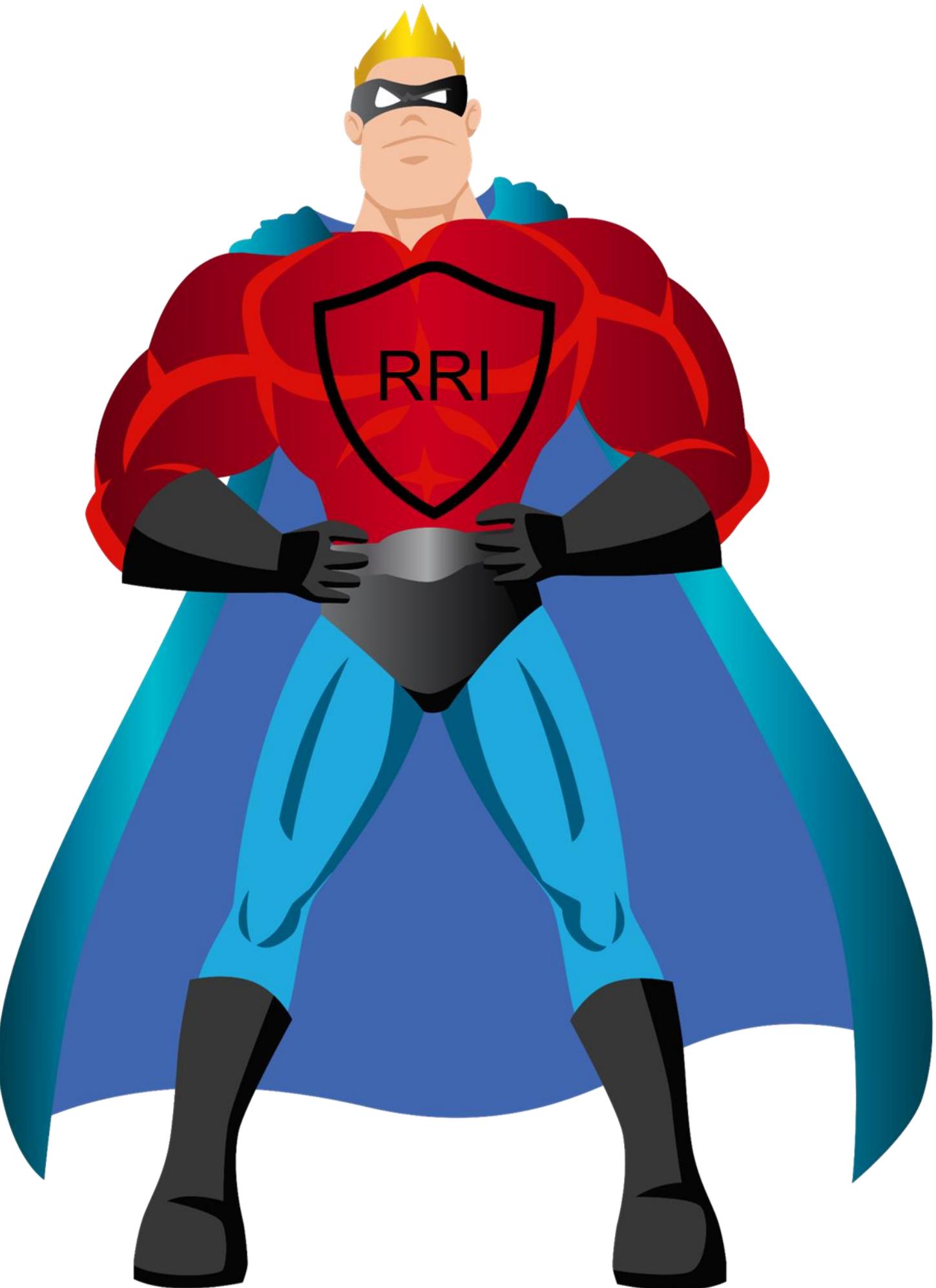
# RRI – historical backdrop

- GMO > Nano
- Economic crisis
- Planning H2020



# RRI ambitions

- Strengthen European competitiveness and innovation
- Safeguard important societal values
- Address societal challenges
- Include society in the R&D agenda
- Create integrated research and innovation



# Grand challenges – Missions

Not only integration – but also novel ways of ***combining sectors***

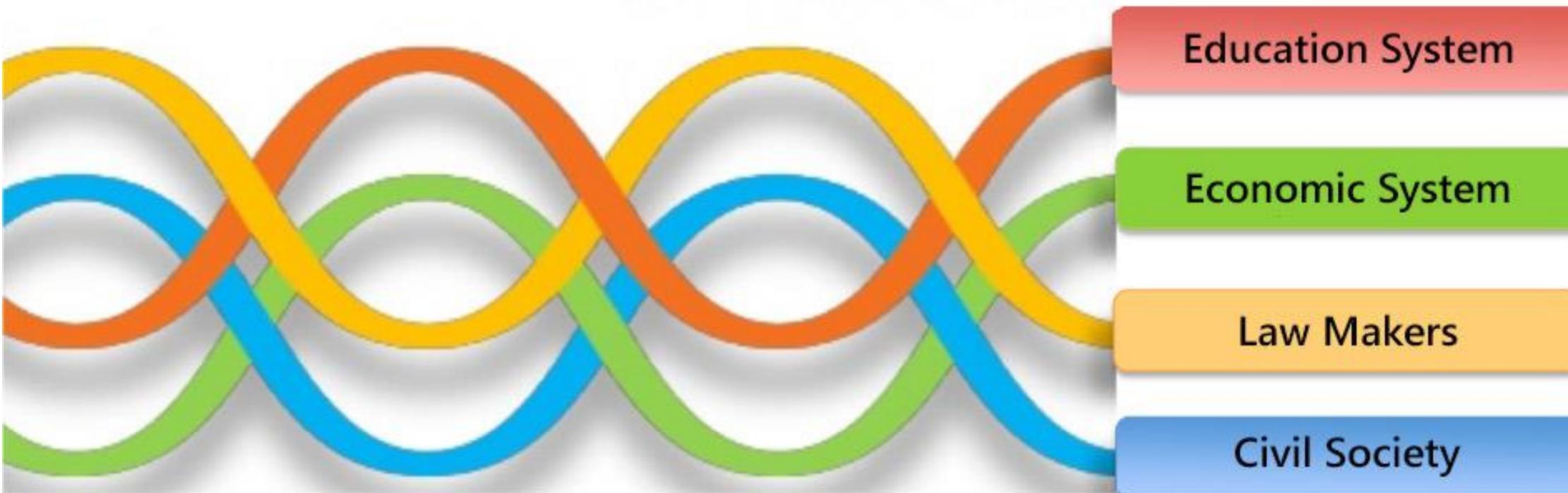
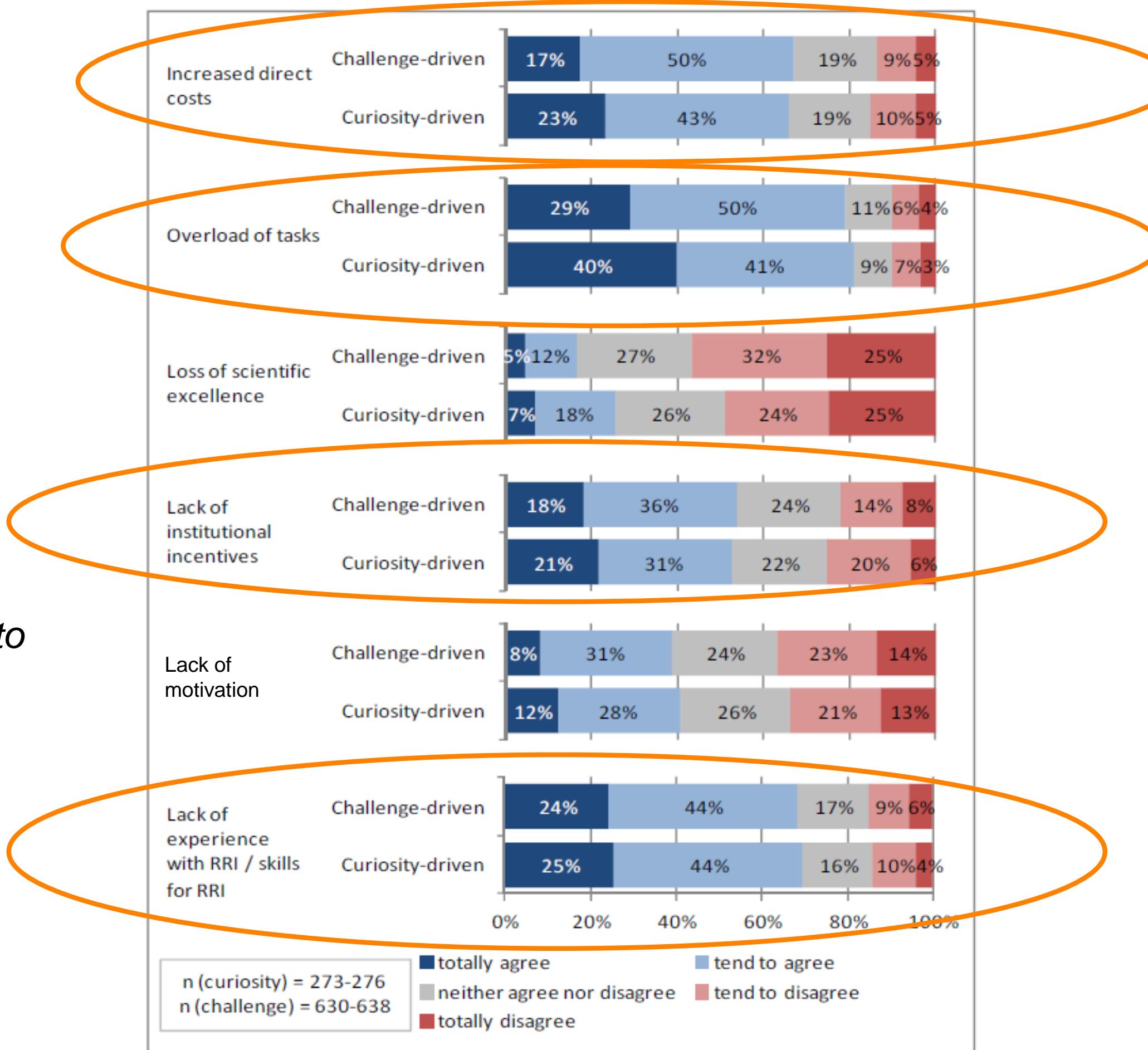


Figure F-14: Observed barriers by research orientation



If you do observe any barriers to practice RRI in your institution, please specify your answer

# RRI in projects

- **Assisted Living**
  - What are central RRI elements in Assisted Living according to you?
- **Artificial intelligence as a tool for improving assisted reproduction technology**
  - How do you understand the goal of the RRI WP in AI Fertility?

# Group exercise – stakeholder mapping

- Use post-its & collective intelligence!
- Pick one project! > Gather around the flip-over!
- Who are the stakeholders in this project?
  - Write groups on post its & include all!
- Can some stakeholders be grouped together?
  - What stakeholders might be barriers? And drivers?
- Can you make connections between groups?
- Place the groups / stakeholders physically in distance to the project!

# Aim

- Efficient method for identifying stakeholders
- Externalizes the task
- Makes you aware of possible constellations
- Helps you prioritize (not everyone can be included; some might be included by proxy – eg. persons who have severe problems expressing themselves, people in prison, ecosystems, climate ...)

# Group discussion – aim doing RRI in practice

- Based on the delivered proposals .... Pick one!
  - What are the most central value concerns?
    - How are these value concerns addressed? Could it be done differently?
    - Which stakeholders are identified, included – and how & why?
    - Which non-experts are included and how & why?
    - What outcomes are defined? What impacts are defined?
      - How is the relation between outcome and impact discussed? Assumed?
  - Could any of this be done differently?

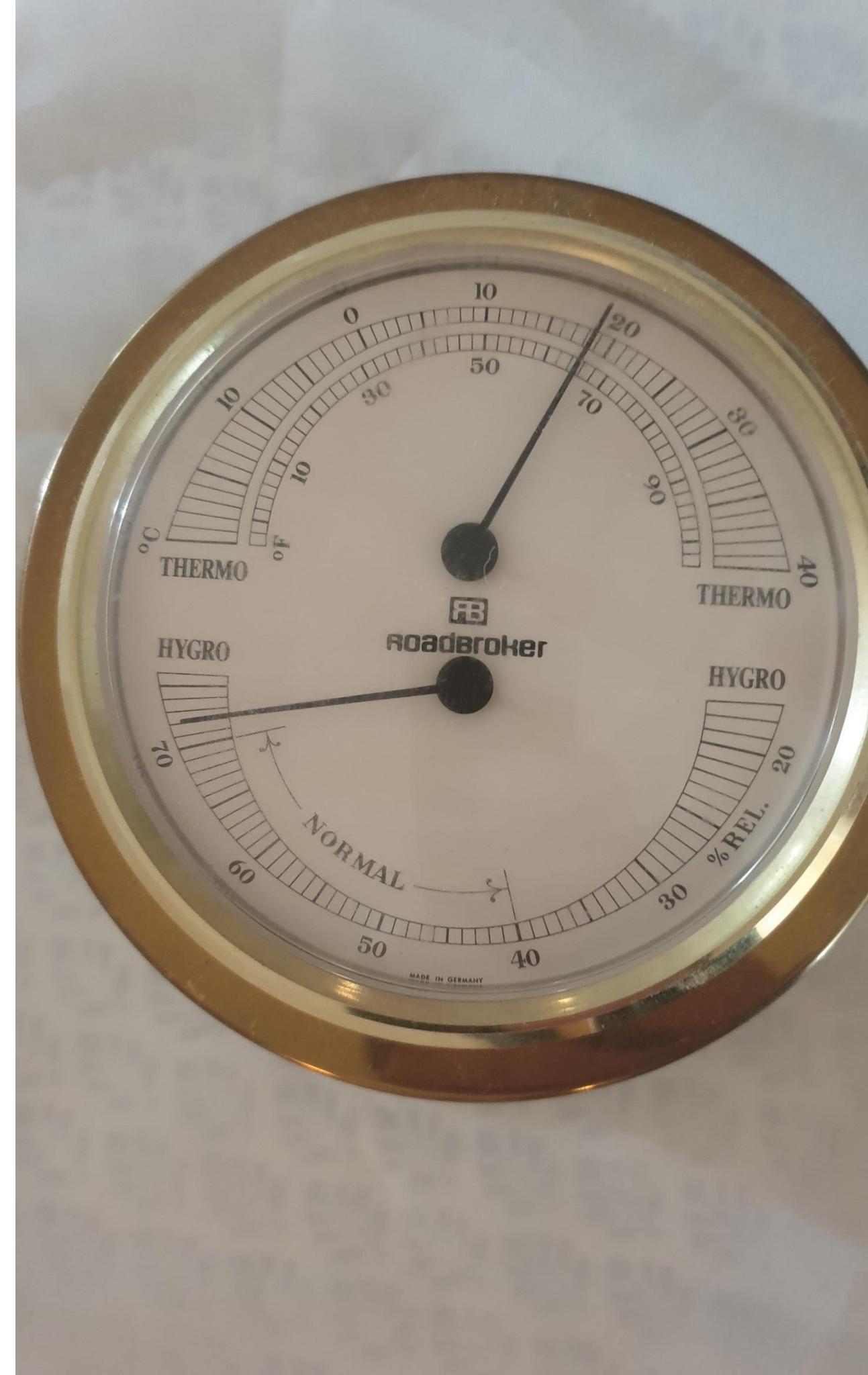
# Group discussion – aim doing RRI in practice

- How does it define the borders towards
  - Other disciplines
  - Policy / law
  - Innovation
  - Is it presented as harmony or conflict (innovation is after all «creative destruction»?)

# Open Science & RRI

# Aims

- Understand why we have Open Science (OS)
- Discuss relation OS & RRI
- (OS policies are moving targets)



# Why Open Science?

- The internet.
- The legitimacy of science
  - Input
  - Throughput
  - output

**Table 1** Five Open Science schools of thought

School of thought	Central assumption	Involved groups	Central Aim	Tools & Methods
Democratic	The access to knowledge is unequally distributed.	Scientists, politicians, citizens	Making knowledge freely available for everyone.	Open Access, intellectual property rights, Open data, Open code
Pragmatic	Knowledge-creation could be more efficient if scientists worked together.	Scientists	Opening up the process of knowledge creation.	Wisdom of the crowds, network effects, Open Data, Open Code
Infrastructure	Efficient research depends on the available tools and applications.	Scientists & platform providers	Creating openly available platforms, tools and services for scientists.	Collaboration platforms and tools
Public	Science needs to be made accessible to the public.	Scientists & citizens	Making science accessible for citizens.	Citizen Science, Science PR, Science Blogging
Measurement	Scientific contributions today need alternative impact measurements.	Scientists & politicians	Developing an alternative metric system for scientific impact.	Altmetrics, peer review, citation, impact factors

## Norms & values in OS

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### Central assumption

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The access to knowledge is **unequally distributed.**

Knowledge-creation could be more **efficient if** scientists worked together.

**Efficient** research depends on the available tools and applications.

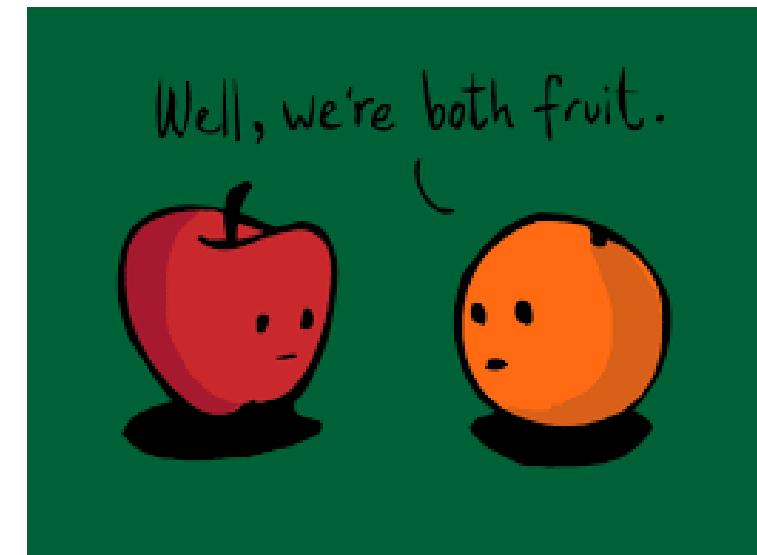
Science needs to be made **accessible** to the public.

Scientific contributions today need **?** alternative impact measurements.

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# Dimensions for comparison

1. Opening up
2. Engaging citizens
3. Interdisciplinarity
4. Institutional transformation
5. Stakeholders



# Comparison 1/5: Opening up

## RRI

- *Responsibility*
  - Responsibility challenges in new modes of knowledge production
  - New social contract
  - Division of moral labour

Both in context of grand challenges

## OS

- *Opportunity*
- Enhancing science through digitalisation
  - Open science 2.0 - adapting to ICT
  - Extend principles of openness to the whole research cycle
  - Building shared e-platforms: European Open Science Cloud

# Comparison 2/5: Engaging citizens

## RRI

- Publics speak back
- Articulation of values
- Methodologies

## OS

- Citizen science
- Mechanisms for collecting and analysing data
- Forums and infrastructures

Both about co-construction but at different «moments» in the research process, with different potential for (re)directing.

# Comparison 3/5: Interdisciplinarity

## RRI

- Integrating ethics
  - Bring in Social sciences and humanities
  - Experiment with collaboration and integration
  - Build competence centers

## OS

- Integration of fields
  - Bring in computers
  - Digitalise your work-flow and redefine your work accordingly in light of others fields competence
  - Build digital infrastructures to support your research (ESFRI)

Both about integration of competence

# Comparison 4/5: Institutional transformation

## RRI

- Institutional changes (to allow publics to speak back)
  - AIRR as implementation-headline
  - Bring in public?

## OS

- Institutional changes enabling collective action through e-infrastructures
- Partner with industry and societal actors .. open innovation

Both rethink the boundaries of research actors and landscapes

# Comparison 5/5: Stakeholders

## RRI

- Normative concern
  - Desirability

## OS

- Pragmatic concern
  - Doability
  - Instrumental (more/better science)

Different rationales for action vis-à-vis stakeholders

# Normative vs epistemic focus in common narratives

## RRI

- Exemplary case: the need to avoid “blind” market driven innovation
- Key features:
  - Reflexivity facilitator
  - Collaboration/integration experimentations

## os

- Exemplary case: Timothy Gowers’ *Polymath Project* – an expert-crowd-sourced solution to a mathematical problem
- Key features:
  - Digitalisation
  - Novel infrastructures for information and collaboration

**Table 1** Five Open Science schools of thought

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# Open Science - discussions

- Based on the delivered proposals .... Pick one!
  - Are elements of OS present? How can additional aspects of OS become part of goals / objectives?
  - Are there elements in the proposal that make one or several aspects of OS impossible/illegal? Can those elements be altered? How?
  - Is efficiency or accesability the bigger challenge?

# Research integrity

# Aim

- To start the conversation on Research Integrity
- Knowing about Research Integrity
  - will help you in projects
  - reduces the probability of fraud
  - empowers you as an academic in setting a good example
  - makes your science (and that in your project) more reliable
  - and – thus – more likely to have beneficial impacts

- What are the routines in your local institute for handling breaches on research integrity and research ethics?
- How are new employees introduced to research ethics and research integrity?
- What are the routines in your local institute for handling suspicion of breaches on research integrity and research ethics in collaborative projects by project partners outside of Norway (i.e. not subject to the Norwegian law on research integrity)?

# Falsification, Fabrication, Plagiarism – FFP

- Don't do it!
- It is wrong and it is illegal

# Questionable Research Practices – QRP

- Don't do it!
- It is wrong, but it doesn't have to be illegal (but it might be).
- What are QRPs in your field?
- Why do people engage in FFP & QRP?
  - (it is fair to assume that no-one is so stupid that they first take a BA, then a MA, so a PhD – in order to cheat & enrich themselves; there are easier ways ☺)

Table 2 Have you known about or justifiably suspected that any of the colleagues in your faculty during the last 12 months has... (in %).

	Yes	No	Not answered/ do not want to answer	Uncertain/ do not know	Not applicable
<b>FFP</b>					
Fabricated data	1.78	80.99	2.85	10.75	3.64
Plagiarized data	3.37	79.22	3.10	11.81	2.49
Falsified data	1.87	79.22	3.47	12.26	3.20
<b>QRP</b> s					
Falsified biosketch, resume, reference list	3.20	72.74	2.84	17.58	3.64
Deliberately withheld data from the research community to gain personal or institutional advantage	5.42	66.25	3.10	21.94	3.29
Selectively dropped data from "outlier" cases without transparent explanation	7.64	60.57	3.28	24.25	4.26
Tried out a variety of different methods of analysis until one is found that yields a result that is statistically significant	17.67	47.6	3.02	27.18	4.53
Not disclosed a conflict of interest	4.71	68.38	3.10	21.14	2.66
Denied authorship to contributors	12.79	62.26	3.46	19.27	2.22
Claimed undeserved authorship	23.62	49.82	4.00	20.60	1.95
Been pressured by a study sponsor or contractor to engage in unethical research conduct or skewed presentation of research	2.22	73.53	3.02	18.47	2.75



# FFP relates to ...

- **Decreased risk for FFP**
  - High penalties
  - High risk of getting caught
  - Open discussions
  - Strong focus on integrity
  - Understanding of rules and procedures
  - Support of rules and procedures
  - Work-identity
  - Well-being
- **Increased risk for FFP**
  - Pressure to commercialize
  - Economic incentives
    - Acquisition, publishing
  - Strong hierarchy
  - Afraid someone will steal ideas
  - Lack of written policies

# Decreased risk for QRP ...

- High penalties
- High risk of getting caught
- High understanding of rules and procedures
- Strong focus on integrity
- Expectations of rules and procedures
- Open discussions
- Shared understandings of QRP & FFP
- Work-identity
- Well-being
- Natural sciences
- Law / arts / humanities

# Increased risk for QRP ...

- Pressure to publish & external funding
- Economic incentives
  - Funding, publishing, commercialize
- Strong hierarchy
- No written policies
- Time and workload
- Afraid others will steal ideas
- Number of publications
- Female
- Medical / life-sciences
- Post doc.

# The PRINTEGER suggestions

- § 1. Providing information about research integrity
- § 2. Providing education, training and mentoring
- § 3. Strengthening a research integrity culture
- § 4. Facilitating open dialogue
- § 5. Wise incentive management
- § 6. Implementing quality assurance procedures
- § 7. Improving the work environment and work satisfaction
- § 8. Increasing transparency of misconduct cases
- § 9. Opening up research
- § 10. Implementing safe and effective whistle-blowing channels
- § 11. Protecting the alleged perpetrators
- § 12. Establishing a research integrity committee and appointing an ombudsperson
- § 13. Making explicit the applicable standards for research integrity

# An institutional view on integrity

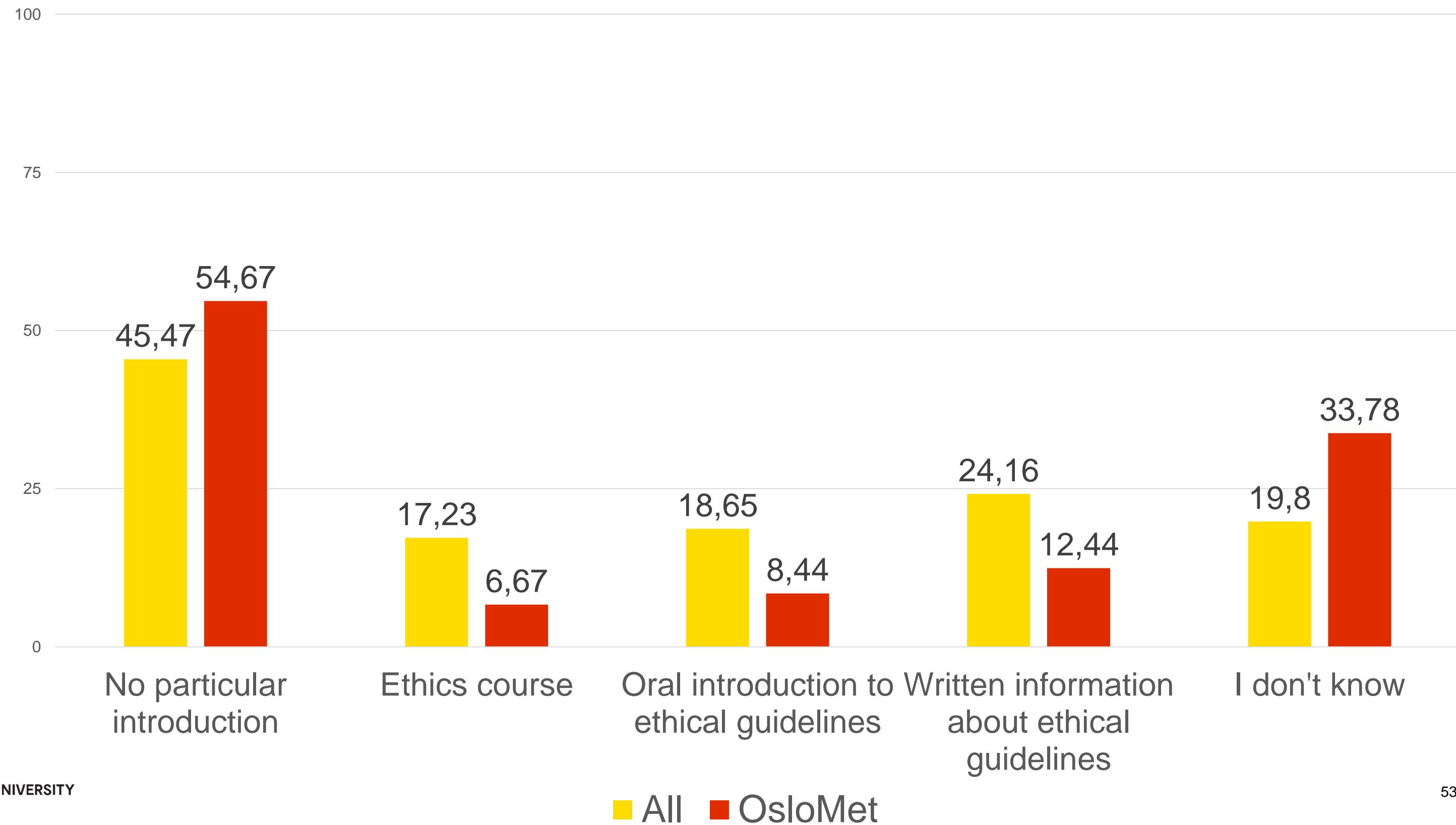
- Alternative to the «bad apple» theory
- Are there environmental features leading to QRP & FFP?
- Combatting QRP & FFP is a collective responsibility!



**Figure 7. How are new employees introduced to research integrity in your department? (Several answers possible) (in %) (3 respondents did not answer each of these sub questions)**



## How are new employees introduced to research integrity in your department? (Several answers possible)



# Discussion – Integrity

- How would you characterize your work situation when it comes to risk factors / beneficial factors for FFP & QRP?
  1. What are the elements you identify?
  2. Who has the power to change these elements?
- Use post-its!! Systematize!

# Discussion – Integrity

- Projects are fun – until they are not fun anymore. We all know this.
- Pick a project!
  - What are the QRP and FFP risk factors in this project?
  - Make a suggestion for how to discuss and follow-up on QRP & FFP in this project?
    - Who should be included?
    - When should discussions take place?
    - How should the project leader make it clear that she/he does not accept gift authorship?

# Discussion – Integrity

- What about the «tradition» in Health Sciences that supervisor is last author?
- Vancouver Group's criteria for academic authorship:
  - a) Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work;
  - b) Drafting the work or revising it critically for important intellectual content;
  - c) Final approval of the version to be published;
  - d) Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

# Innovation