Towards Regional Responsible Research and Innovation?

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Core ideas in EU innovation policy

- DG Research: Responsible Research and Innovation (RRI)
  - Cross-cutting action in Horizon 2020 from 2014
  - Foregrounds responsibilities of researchers and innovators towards society
- DG Regio: Smart Specialisation
  - Key part of EU cohesion policy, 2014-2020
  - Condition for access to structural funds
  - Foregrounds role of regions as sites for innovation and need for research and innovation policy to build competitive advantage
- Both argue for broad stakeholder involvement and for research and innovation to be oriented towards solving grand societal challenges
- However, there are also key differences between them in
  - Understanding of the spatial dimensions of innovation processes
  - Prioritisation of social value in innovation policy
- Aim: Integrate the two approaches to develop a platform for regional responsible research and innovation

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Responsible Research and Innovation

- Innovation does not always benefit society
- Simple patent counting tends to obscure this
  - Consider Thomas Midgley Jr – holder of 100 patents:

    "Midgley's name is inseparably associated with […] outstanding advances", such as:

    - tetraethyl lead: "has added immensely to the performance and efficiency of gasoline engines both in the air and on the ground"

    - chloroflourocarbons: "the only [refrigerating] compounds known which are stable, non-inflammable, and completely non-toxic" (Kettering 1947)

- RRI addresses the social contract of research and innovation
  - Innovation must have a socially beneficial impact
  - Mitigating negative effects of innovation in areas with adverse societal effects
  - Actively supporting research in areas where the social benefit is high
- RRI also has a clear perspective on how to achieve this
  - Involving stakeholders at an early stage of research and innovation process
  - RRI is not just about the desirability or outcome of innovation, but about the process

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Responsible Research and Innovation

- RRI is
  - “a transparent, interactive process
  - by which societal actors and innovators become mutually responsive to each other
  - with a view to the (ethical) acceptability, sustainability and societal desirability
  - of the innovation process and its marketable products” (von Schomberg 2011)
- Based on a sense that society has lost control over research and innovation
  - Research policy increasingly oriented towards scientific excellence
  - Innovation policy increasingly oriented towards competitiveness
  - Who is responsible for ensuring the social value of research and innovation?
  - Increasingly up to researchers and innovators themselves to preserve this
- Builds on earlier science policy agendas
  - Technology Assessment
  - Bioethics
  - Ethics, Legal and Social Implications (ELSI) / Aspects (ELSA)
  - However, RRI stresses more strongly the need for research to produce innovation which can stimulate development and help solve grand societal challenges

The RRI process

- Anticipation
  - Consider contingency – what is known, likely, plausible and possible?
  - Improve foresight
  - Discuss possible and desirable futures
- Reflection
  - Being aware of the limits of knowledge and mindful that a particular framing of an issue may not be universally held
  - Scrutinise value systems and theories that shape research and innovation
- Inclusion
  - Public involvement, e.g. deliberative forums
  - Multi-stakeholder partnerships
  - Interrogate 'social constitutions' inherent in technological options
- Responsiveness
  - Change shape or direction in response to stakeholder and public values
  - Responding to new knowledge at it emerges and to emerging perspectives, views and norms

(Stilgoe et al. 2013)

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Questions for RRI from a regional studies perspective

- What is the “society” for which an innovation should be desirable?
- Who are the “societal actors” towards which innovators should be responsive?

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Definitions of society in RRI

- Global:
  - RRI as an attempt "to deal with the uncertain, *global* and fragmented nature of research and innovation" (Stahl 2013)
  - "the sometimes profound, *global* (and intergenerational) impacts of innovations in contemporary society" (Owen el al. 2012)
  - "ambition at a policy level to support 'the best science *for* the world', and not just 'the best science *in* the world'" (Owen et al. 2012)
- European:
  - "the shared norms of RRI are presumed to enshrine 'European values' […] through the *Charter of Fundamental Rights* and the *Treaty on European Union*" (de Saille 2012)
  - "the EU Treaty provides the 'normative anchors for this process'" (Zwart et al. 2014)
- National:
  - "Responsible innovation is *better* innovation, is the general adage, and innovation is expected to strengthen the competitiveness of core Dutch industry" (Zwart et al. 2014)
- Regional:
  - Rare, but see can Oudheusden (2014) on Flanders and Lee (2012), who argues for a "complex, multilevel governance of science and technology"
- Multiple:
  - "in different cultural contexts, different values will be more or less pertinent, and they may be conflicted. In our analysis, we have therefore been reticent to explicitly define the normative ends of responsible innovation" (Stilgoe et al. 2013)
  - "societies rely on research and innovation to solve their problems" (Stahl 2013)

Definitions of society in RRI

- RRI emerged mainly from European Commission
  - Started as a policy more than a scientific concept
  - Pushed by policy makers and funding bodies
  - Anchored mainly in European and EU understandings of responsibility
- Efforts at extending normative foundation beyond the global North
- Fundamental tension between emphasis on national or EU competitiveness and global normative foundation for concept
  - Competitiveness is fundamentally a non-global concept: Only makes sense in context of competition between entities at lower scale

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Definitions of societal actors in RRI

- RRI premised on inclusion of stakeholders
- However, identity of those stakeholders vaguely defined:
  - "publics and diverse stakeholders" (Owen et al. 2012)
  - "stakeholders and wider publics" (Stilgoe et al. 2013)
  - "various societal actors" (Stahl et al. 2014)
  - "stakeholders and other interested parties" – later specified as "actors from industry, civil society, and research" (von Schomberg 2013).
  - Stronger emphasis on collaboration with industry (Zwart et al. 2014)
- This leaves it up to researchers or funding bodies who to include
  - RRI tends to focus on procedural aspects, while neglecting questions of power and interests
  - Most resourceful and/or interested stakeholders will engage
  - No procedure for decision-making or conflict resolution: Society as a unified body with common interests
- Paradox: Global/European normative foundations through local/national stakeholder involvement?
  - When left to their own devices, researchers and innovators will mainly include local stakeholders
  - Researchers often have global scientific networks, but tend to have mainly local or national collaboration with industry or civil society partners
  - Frequent stakeholder interaction stipulated by RRI further creates a need for geographical proximity

Smart Specialisation

- Origins in European regional technology policy
  - 1950s exogenous growth theory, focusing on creating growth poles in less successful regions to create regional multiplier effects
  - 1980s third wave growth theories, arguing that thriving places were able to create local specialisations that increased their global competitiveness (Piore and Sabel 1984)
  - Regional Technology Plan experiment in 1989: Regional partners would identify gaps in regional technology networks and identify structural funds projects that could help local firms access those technologies
  - Structural funds reform in 2007: Shift towards innovation, requiring all regions to develop innovation strategies for access to EU funding
  - These policies tended to concentrate funding towards high-tech regions and to promote uniformity as all regions aimed to attract the same high-tech clusters
  - Smart specialisation as an attempt to redress this, forcing regions to identify areas where they could build competitive advantage

Smart Specialisation

- Entrepreneurial discovery process
  - Bottom-up: Going beyond policy-makers to engage regional entrepreneurs
  - Broad stakeholder involvement: Local authorities, academia, industry, civil society
  - Identify regional strengths and comparative assets
  - Identify opportunities for development of competitiveness
- Smart Specialisation Platform
  - Facilitate mutual learning
  - Data gathering and analysis
  - Networking
- Place-based approach
  - Builds on regional assets and resources
  - Unique opportunities for development and growth in a region
- Prioritisation
  - Limited number of well-identified priorities for investment
  - Focus on competitive strengths and realistic growth potentials
- Monitoring and evaluation

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The smart specialisation process

- Analysis of regional context/potential
  - Assess existing regional assets
  - Identify regional competitive advantage and weaknesses
  - Detect emerging niches for smart specialisation
  - Analysis of regional potential
  - Identify relevant actors
- Governance
  - Wider engagement of stakeholders
  - Include demand-side perspective
  - Bridge between policy-makers, business and R&D
- Vision for the future
  - Formulate different scenarios and debate where region wants to go
- Selection of priorities
  - Focus on a limited number of areas with potential
  - Transition, upgrading, diversification, new domains…
- Policy mix
  - Combination of vertical and horizontal policy support and framework conditions
  - Which tools are needed to overcome identified challenges?
- Monitoring and evaluation
  - S3 platform assessment
  - Peer review

(RIS3 Guide)

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Questions for RIS3 from an RRI perspective

- How is social control of entrepreneurial discovery process ensured?
  - Economic potential of new sectors as main selection criterion
  - Desirable innovation defined as that which will lead to economic growth
  - Does economic potential become a proxy for social acceptability, eliminating the need to consult more widely?
- Are entrepreneurial discovery processes compatible with RRI?
  - Tension between the emphasis on entrepreneurialism and creativity in RIS3 and the orderly, deliberative view of the innovation process in RRI
  - Channeling creativity towards innovation vs Rational planned action to take control over innovation

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Towards an integrated framework

- Starting-point: EU ambition to become a smart, sustainable and inclusive economy by 2020
  - How to construct a policy that includes both the smartness of RIS3 and the sustainability and inclusion of RRI?
- RIS3 policies better equipped at dealing with this than earlier regional policy due to its broad-based approach to innovation
  - Move beyond high-tech industry already more inclusive towards regions with more low-tech industrial structures
  - Entrepreneurial discovery process already inclusive, at least in theory – but variation in how it is put into practice
- Gearing entrepreneurial discoveries more towards grand challenges would bridge some of the gap
  - Broaden ambitions from promoting competitiveness to also solving grand challenges
- Reorientation of RIS3 strategic focus from place-based to societal change-driven policy may be required
  - Innovation policies which transcend sectoral, geographical and organisational domains
- Meanwhile, including a place-based approach in RRI could also bring the approaches closer and make RRI more realistic

A geographical approach to RRI

Stakeholders involved	*Impact of innovation*			
	Local	National	European	Global
Local	Current RRI framework suitable, but likely rare	Oversight by national government required	Oversight by European government required	Hard to secure responsible innovation in current policy landscape
National	Representation issues, violation of subsidiarity principle	RRI suitable, but frequency of communication issues		
European	Hard to achieve	Representation issues, violation of subsidiarity principle	RRI suitable, but frequency of interaction and cultural proximity issues	
Global		Hard to achieve	Hard to achieve	Hard to achieve

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An RRI approach to smart specialisation

Anticipation

RIS3 predicated on anticipating effect of innovations on regional competitiveness – also need to consider effects on social and environmental outcomes
Entrepreneurial discovery of solutions to grand societal challenges

Reflection

Smart specialisation strategy needs to reflect on the strategy's impact on other regions, the environment and different groups of citizens in the region

Inclusion

Entrepreneurial discovery process needs to include wide range of stakeholders, not just entrepreneurs in the narrow sense
Ensure representation of citizens in the process

Responsiveness

Smart specialisation strategy must be responsive to criticism by all affected, e.g. citizens in the region and stakeholders beyond the region

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An integrated framework

Anticipation of impact on social and environmental outcomes

Reflection on impact of strategy beyond region and represented stakeholders

Assessment of impact beyond region

Inclusion of a variety of stakeholders

Responsiveness towards citizens and stakeholders beyond region

Ensure RIS3 process has been developed in a responsible way

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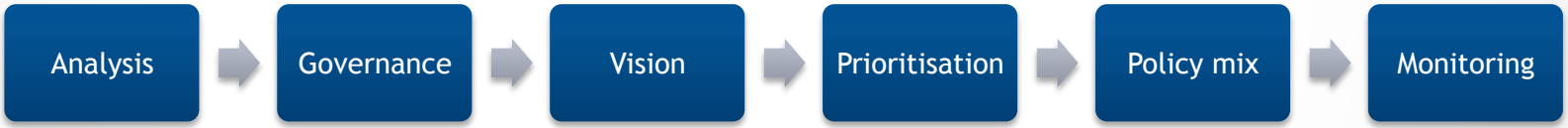
An integrated framework

Identify regional and social needs as well as assets, e.g. grand challenges

Create vision of a good society, not just a competitive economy

Responsiveness towards citizens and stakeholders beyond region



Inclusion of a variety of stakeholders

Consider potentially diverging interests

Reflection on impact of strategy beyond region and represented stakeholders

Anticipation of impact on social and environmental outcomes

Ensure RIS3 process has been developed in a responsible way

Assessment of impact beyond region

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Conclusion

- EU innovation policy based on different principles in different DGs
  - Responsible Research and Innovation agenda of DG Research evolving largely separately from Smart Specialisation of DG Regio
- Some common ground between the two, but also key differences
  - RRI lacks a place-based perspective – no sense of what is the appropriate scale of community or what this entails for the inclusion of stakeholders
  - RIS3 based mainly on techno-economic paradigm, emphasising competitiveness more than social value
- However, there is potential for integrating the two approaches to develop a regional responsible research and innovation policy
  - Integration of geographical perspectives into RRI: Stakeholder and innovation impact alignment
  - Integration of RRI principles and process into Smart Specialisation: Anticipation, reflection, inclusion and responsiveness

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