

Responsible research and innovation: From science in society to science for society, with society

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The term responsible research and innovation (RRI) has gained increasing EU policy traction over the last ten years, in particular within the European Commission's Science with and for Society (Swafs) programme, as a means of addressing the societal challenges tackled by the Horizon 2020 Strategy. I will provide a brief historical overview of the concept, identify three distinct features that are emerging from associated discourses, and illustrate some of the challenges of mobilising these features through a number of case studies on science governance.

(1) Science for society: Democratising the governance of intent. The first emerging feature of contemporary RRI discourse is one that is concerned with the purposes of science and innovation, and the underlying motivations and intentions for these. It seeks to go beyond what we do not want science and innovation to do—the well-known and well-documented preoccupation with characterising and managing unintended risks (the latter often through regulation)—but what we do want it to do. This is an important departure point for RRI. It asks how the targets for innovation can be identified in an ethical, inclusive, democratic and equitable manner.

(2) Science with society: Institutionalising responsiveness. The second feature emphasises the integration and institutionalisation of established mechanisms of reflection, anticipation, and inclusive deliberation in and around the processes of research and innovation. We describe these dimensions in terms of a need, first, to anticipate: describing and analysing intended and potentially unintended impacts that might arise, be these economic, social, environmental or otherwise, supported by methodologies that include those of foresight, technology assessment and scenario development. Secondly, a need to reflect on underlying purposes, motivations and potential impacts, what is known (including those areas of regulation or other forms of governance that currently exist) and what is not known, associated uncertainties, risks, areas of ignorance, assumptions, questions and (ethical) dilemmas. Thirdly, there is a need to inclusively open up such reflection to broad, collective deliberation through processes of dialogue, engagement and debate, inviting and listening to wider perspectives from publics and diverse stakeholders.

(3) Reframing responsibility. Scientists already have responsibilities, including those associated with concepts of research integrity which make explicit such morally unacceptable behaviours as data falsification and plagiarism. The emerging concept of RRI, however, confers new responsibilities, emerging from a model of co-production that views the spheres of science and social order as mutually constitutive of each other, and where debates concerning responsibility in science need to be broadened to extend both to their collective and to their external impacts (foreseen and unforeseen) on society. How are grand challenges to be defined? How can they be responsive in their delivery? When should such an approach be used? And at what level (for example with every project, or at a thematic programme level)? How can emerging 'reflexive capital' be communicated to national and international policy-making at a governmental level and beyond, particularly in contentious and controversial areas of science and technology?