RESPONSIBLE RESEARCH AND INNOVATION IN PRACTICE

RRI-Practice is financed by the European Union's Horizon 2020 Research and Innovation Programme, under Grant Agreement no 709637, and runs from September 2016 to August 2019.

www.rri-practice.eu

RESPONSIBLE INNOVATION POLICY BRIEF August 2018

Summary

Science, technology and innovation create futures in unpredictable ways, creating not only economic and social value but risks, uncertainties, ethical dilemmas and unintended impacts.

Universities are increasingly expected not just to teach and do research, but produce economic and social impact from research, driving the knowledge economy through a 'triple helix' of university-industry-government interactions. This places additional responsibilities on researchers.

Responsible innovation (RI) responds to these new responsibilities, seeking to integrate and embed institutional capacities for anticipation, reflection, inclusive engagement and responsiveness in and around science and innovation, creating value with and for society in an ethical, responsible and sustainable manner.

RI developed in the UK from important foundations, such as public engagement. In 2013 the Engineering and Physical Sciences Research Council (EPSRC)) published a framework and policy for RI. Since then investments have been made in areas such as ICT, synthetic biology and the Centres for Doctoral Training.

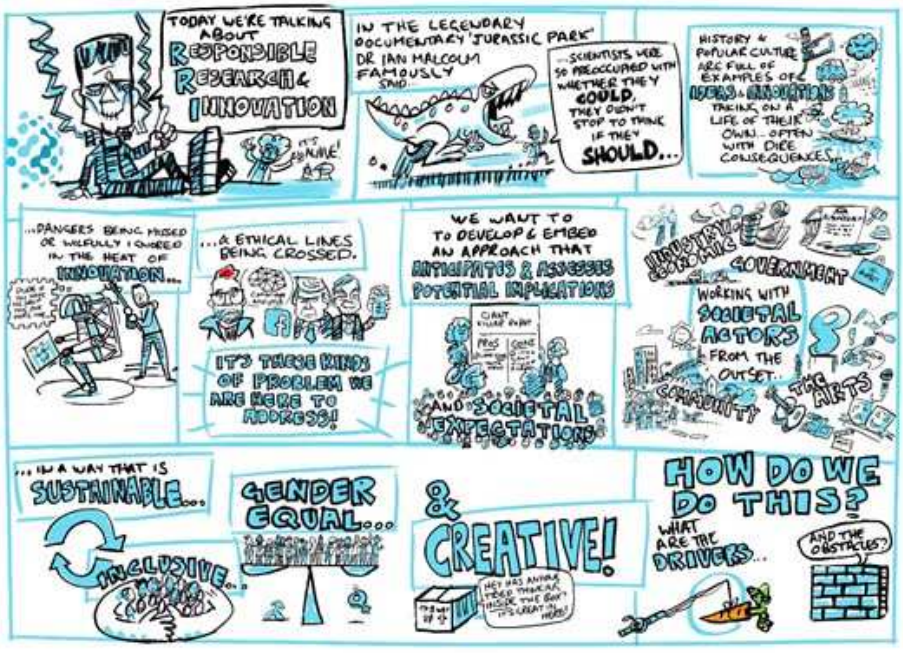
RI as a process of knowledge co-production faces challenges in Universities, but there are also examples of creative approaches.

RI is a decadal project needing sustained commitment and leadership, institutional entrepreneurship, resourcing and changes to how Universities produce knowledge. It also challenges us to reflect on how innovation systems are configured, and to what ends.

Responsible Innovation (RI) in the UK and Responsible Research and Innovation (RRI) in the EU are concepts that have emerged over the last decade. They seek to configure innovation and research aimed at this in ways that are ethical, socially desirable and oriented towards societal needs and the major challenges facing society and our planet: innovation with and for society.

RI in the UK emerged soon after the financial crash of 2008, a crash in which complex financial innovations played no small part. But it also reflects other crises, from the GM debate in the 1990's to the recent scandal involving Cambridge Analytica, Cambridge University and Facebook. These highlight how ethical dilemmas and risks are frequently co - produced with new knowledge, as well as the limits to regulation. Not only that, but how Universities are increasingly incentivised and encouraged to become entwined in a 'triple helix' of industry – government- academic interactions, where it is not only the objective search for truth that matters, but realising economic and social impact from research, fuelling the knowledge economy and national competitiveness. This 'third mission', in addition to the first (teaching) and second (research), places new responsibilities on researchers.

Originally the role responsibilities of researchers were configured around norms such as research integrity and academic conduct. But now generating *impact and innovation* have become additional expectations these are insufficient. How can we support researchers, Universities and Research Councils to drive innovation that is socially desirable, ethical and oriented at the challenges we most face as a society under conditions of uncertainty? And what does this mean in practice?



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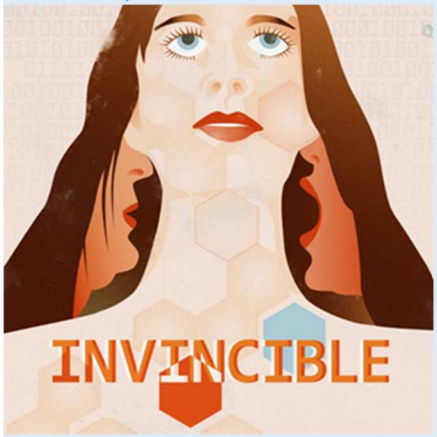
Creativity and innovation in RI



Invincible is a collaboration between researchers in the BrisSynBio synthetic biology research centre and the theatre company Kilter. Working together they devised a play, which was performed at close range to the public in a city apartment, to explore the ethical dilemmas surrounding synthetic biology.

Not only was this a novel way to engage audiences with these issues, but the process of developing the production involved the actors and writers closely collaborating with the scientists in the lab, catalysing reflection in a creative way.

www.youtube.com/watch?v=71K6h3wg1i8

www.bristol.ac.uk/brissynbio/

Image: Dave Bain

A Framework for Responsible Innovation

RI has deep roots: concepts that complement regulation and existing codes of ethics, such as 'anticipatory governance', technology assessment and upstream public engagement are all important foundations. Public engagement in particular has a rich history in UK universities, including funding for 'Beacons' and 'Catalysts', reflecting a turn from one way communication to a more deliberative, two way mode of engagement.

Between 2009 and 2013 academics working with the UK Engineering and Physical Sciences Research Council (EPSRC) developed a framework for RI, which EPSRC adopted as a policy in 2013[1]. This 'AREA' framework asked researchers and their universities to develop, integrate and embed capabilities for *anticipation* (e.g. on plausible future impacts of their research), *reflection* (e.g. on the purposes of and motivations for their research), *engagement* (with stakeholders and publics) and *action* (responding to emerging information and views, shaping the directions and trajectories of research and innovation) in a way that is proportionate and flexible. Since 2013 there have been some investments in RI by EPSRC and in some UK universities: notably in key themes such as synthetic biology, ICT and the EPSRC Centres for Doctoral Training. ORBIT, a resource for the ICT community, is one example[2].

Embedding RI in Institutions

Within the RRI Practice project we have investigated how RI is being translated into organisational practice. Our research[3] has included interviews with stakeholders across UK universities, and in depth case studies at EPSRC and the University of Bristol. RI implies a mode of knowledge co-production and interdisciplinary way of working that needs support in UK universities. Incentives (e.g. associated with the periodic REF evaluation exercise[4]), disciplinary norms and career progression are areas needing attention. For RI to be successfully embedded new approaches to knowledge production and valorization are needed. These can build on innovative, imaginative and creative interventions (e.g. see panel opposite) that create mutual value.

RI is recognized as needing sustained commitment, leadership and political will: this is a long term project of systemic change which will take several decades. Enabling 'intrapreneurship' within institutions, making resources available and providing incentives, training and support for researchers in RI have been identified as key. A flexible and proportionate approach must also allow space for critical reflection on the innovation system in which Universities are increasingly incentivized to engage at a time of great turbulence in and marketisation of the higher education sector. If innovation systems are concerned with how knowledge flows are combined and commodified, RI challenges us to consider how such knowledge flows are configured and to what ends, and who is included.

[1] https://epsrc.ukri.org/index.cfm/research/framework/
[2] www.orbit-rri.org/
[3] www.rri-practice.eu/wp-content/uploads/2018/09/RRI-Practice_National_Case_Study_Report_UNITED-KINGDOM.pdf
[4] www.ref.ac.uk

Partners: Oslo and Akershus University College (NO), Karlsruhe Institute of Technology (DE), University of Bristol (UK), Commissariat a L'Energie Atomique et aux Energies Alternatives (FR), University of Padova (IT), Applied Research and Communications Fund (BG), Stichting Katholieke Universiteit (Nijmegen) (NL), Wageningen University (NL), Chinese Academy of Science and Technology for Development (CN), Research and Information System for Developing Countries (IN), Arizona Board of Regents (US), Fundacao de Desenvolvimento da UNICAMP (BR), University of Queensland (AU)

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