

Main messages from the AGM of the Virtual Institute of Responsible Innovation (VIRI), San Sebastian, 11-12 March 2016.

Organised by David Guston, Director of the new School for the Future of Innovation in Society (sfis) at Arizona State University (ASU) and Erik Fisher also of sfis; and hosted by the University of the Basque Country, the 2nd AGM of the Virtual Institute of Responsible Innovation (VIRI)¹ enables the 'virtual' network to gather together physically, to exchange experiences, make new contacts, and to hear about the latest research of members from around the world, collectively under the umbrella of 'Responsible Innovation'. The main focus of the day was to hear and discuss latest research presented by members.

In fact the presentations confirmed that we are seeing quite a degree of convergence in the research of VIRI members around the topic of the responsible 'governance' of new and emerging social and material technologies, along three under-scoring dimensions². These three dimensions suggest both a coalescing of the normative heartland of the institute (how the members feel research and innovation *should* be done); and a basis for methodological orientation (ie appropriate methodologies aligning with this normative heartland include participant-observation, ethnography, rich interviews, and action-research seeking to bring about change in, for example behaviours, decision making, organisational design and incentives, and isomorphic institutional structures). The three convergent research orientations of the field appear to be:

1/Research which is inclusive to a wide range of actors, in particular bringing into the dialogue otherwise silent or absent voices including lay publics and civil society organisations.

2/Research which orientates attention to addressing societal problems and challenges, delivering positive impacts for societies, in so-doing highlighting the necessity for inter-disciplinary research across the natural and social sciences, demonstrating examples and discussing how best to achieve it.

3/Research which takes a futures-oriented or 'anticipatory' approach especially in the governance of new and emerging technologies where uncertainty couples with ubiquity; at the vanguard of research and experiments involving the re-design of critical organisations and institutions, the development and assessment of new business and techno-economic models; and imagining new configurations of research and innovation systems, and their evaluation.

In sum the field of responsible innovation involves a myriad ways of researching and conducting experiments in institutional change, by illuminating and voicing the harms that result from the maintenance of isomorphic tendencies of various kinds; identifying incentive structures which hold old models in place; and designing new governance instruments, incentives and entrepreneurial responses to nudge research and innovation systems onto new trajectories deemed more responsible (more equitable, more inclusive, more sustainable, more responsive to societal needs and attaining a wider distribution of economic surpluses) than the current status quo.

The research programmes and projects that were presented incorporated all of these things. *Marko Monteiro* and *Ana Paulo Camelo* from the *University of Campinas*, Brazil discussed implications for environmental policy of bringing ethnographic and inter-disciplinary insights to quantitative models to track resilience and vulnerability of the Amazon forest, concluding that constant monitoring and adjustment which allows for a wide and diverse values-set is a more effective approach than trying to predict uncertainty which by definition is unpredictable. Other projects by the Campinas team used inclusive approaches to assist energy planning and energy transitions. *Phil MacNaghton* of *Wageningen University*, Netherlands, reported a new collaborative programme with a number of African

¹ Supported with 3 years funding from the National Science Foundation (NSF) of the USA.

² See also Tancoigne, E.; Randles, S.; Joly, P.-B. (2015): 'A Scientometric Analysis of the new Discursive Space of RRI' short version, <http://Res-AGorA.eu/case-studies/stage-3-cases>; Tancoigne, E.; Randles, S.; Joly, P.-B. (2015): 'Power and the Performativity of Language: A Scientometric Analysis of the new discursive space of RRI (under journal review)'; Tancoigne, E.; Randles, S.; Joly, P.-B.: 'Evolution of a concept: A Scientometric Analysis of RRI', in Lindner, R. et al. (eds.) (2016): *Navigating Towards Shared Responsibility in Research and Innovation : Approach, Process and Results of the Res-AGorA Project*, Res-AGorA, Karlsruhe. Chapter 4

Universities, supporting 11 PhD projects involving hands-on action research in the domain of responsible life-sciences and agriculture development. A selection of the research projects were summarised on topics such as crops and livestock management, water and disease management. As part of the research, the Stilgoe et al³ (2013) framework for responsible innovation was operationalized by designing a research instrument which translated the abstract criteria of responsive, inclusive, reflexive, anticipative ambitions into a series of practical questions and steps integrated into all the research projects. *Lalitha Sundaram, University of Cambridge* similarly reported on her project addressing arsenic poisoning around the world resulting in health problems and premature death with particular concentrations in SE Asia forming the focus of her in-depth research.

Jonny Hankins, gave an update on projects from the *Bassetti Foundation* in Italy mission is to promote Responsible Innovation⁴. He also reported on his research, which takes a different entry point to Responsible Innovation looking at the existing *de-facto* 'moral frameworks' and collective understandings of doing-good described by individuals working in small-scale artisan environments, which he collected through rich co-produced interviews and analysed through conversational analysis. *Miles Brundage*, from *Arizona State University* introduced his research on societal assessments of Artificial Intelligence moving into his VIRI project which seeks to evaluate whether the provocateurs of Responsible Innovation, incorporating VIRI members but extending beyond to the wider community, meet the criteria for a *Scientific-Intellectual Movement (SIM)*. His answer at this stage is 'yes-BUT'. *Miklos Lukovics, University of Szeged* reported on his project extending the application of the Fisher STIR protocol, to a Hungarian setting, by embedding social scientists alongside natural scientists in lab situations in Hungarian science institutions over an extended period of time to see whether the natural scientist changed her decision-making as a result of the reflexive mode facilitated by the extended presence of the social scientist. His findings supported Fisher's conclusions that reflexive decision making did change, though more generally the Hungarian science system was considered protectively autonomous and guarded about external influence. *Sujatha Raman* from the *University of Nottingham* introduced a new project positioning Universities as a critical player. Sujatha reported on a workshop held on 8 March 2016 in Nottingham which brought together a number of UK Universities with ASU and University of Lund, Sweden to imagine the 'Responsible-Innovative' University of the future. There will be a number of written outputs and opinion pieces from this project. *Stevie de Saille*, *University of Sheffield* gave an overview of her forthcoming paper in *Economy and Society* where she proposes a new concept 'Responsible Stagnation' as a challenge to a dominant rhetoric of accelerated economic growth, and as a device to counter-propose alternatives such as slow-growth and the managed decline of sectors in transition such as fossil fuels.

The meeting provided an opportunity to update the network on EU funded projects on Responsible Research and Innovation. *Sally Randles, University of Manchester*, reported on the final interactive conference of the 'Go4' projects: RES-AGorA⁵, PROGRESS⁶, RESPONSIBILITY⁷, GREAT which took place in Brussels in January 2016, at marking the finish and summary outputs and recommendations of all four projects which started in 2013⁸. Sally passed around copies of the main RES-AGorA output, the '*Responsibility Navigator*'⁹ which has been developed following a great deal of empirical research including 26 case studies across Europe and beyond, to understand how actors already in their day to day situated contexts form ideas of what it is to be responsible in the full range of research and innovation situations; and they form collectives, negotiate contested ideas of responsibility (for example in 'hot' techno-economic controversies such as Fracking); and how they design and operationalize governance instruments of various kinds (Codes of Conduct, Standards, performance measures, incentives and market mechanisms) which co-ordinate and stabilise and institutionalise particular understandings and discourses of responsibility. The Navigator provides a systematic 'thinking tool' for strategic decision makers and organisations to 'navigate' this process in a 'better' way towards 'responsibilisation' and is built on ten principles: inclusion, moderation, deliberation, modularity/flexibility, subsidiarity, adaptability, and creating supportive environments for the process by building individual capabilities, institutional capacities, and institutional entrepreneurship. An e-book¹⁰ tracing the RES-AGorA journey will soon be freely circulated across relevant networks. It outlines each of the elements of the RES-AGorA project: a conceptual framework developed iteratively with analysis of a suite of 26 case studies;

³ Stilgoe, J., Owen, R & MacNaghton, P (2013) 'Developing a Framework for Responsible Innovation' *Research Policy*

⁴ <http://www.fondazionebassetti.org/en/>

⁵ <http://res-agora.eu/news/>

⁶ <http://www.progressproject.eu/>

⁷ <http://responsibility-rri.eu/>

⁸ <http://www.great-project.eu/>

⁹ <http://res-agora.eu/news/res-agora-responsibility-navigator/>

¹⁰ Lindner, R. et al. (eds.) (2016): *Navigating Towards Shared Responsibility in Research and Innovation: Approach, Process and Results of the Res-AGorA Project*, Res-AGorA, Karlsruhe

scientometric analysis; monitoring of responsible innovation in key organisations in 16 EU countries; and co-construction of the *Responsibility Navigator* with nearly 100 participants who took part in five 2-day workshops across Europe.

The meeting was also able to update on some of the new Horizon 2020 consortia and projects, about to sign contracts for 2016 start. A number of VIRI members are involved in these consortia. *Ellen-Marie Forsberg Oslo and Akershus University College*, updated on the imminent *RRI Practices* project, which is concerned with identifying and overcoming barriers and challenges to institutional change towards RRI. The project match-pairs research-funding organisations and research-providing organisations in 13 countries to provide 13 country-level case studies. Institutions from China, India and others are also involved. *Sally Randles* updated on two new H2020 projects. *SMART-Maps* (Co-ordinated by University of Aarhus, Denmark) focuses on how responsible innovation is understood and implemented in industrial networks across three medical technologies : synthetic biology, precision medicine and 3D printing, and match-pairs industrial clusters in 6 regions/countries (UK/Hungary on synbio; Denmark/Spain on precision medicine; Germany/Italy on 3D printing, creating a network and method for reciprocal learning and formative evaluation of experiences across all six). *JERRI* (Co-ordinated by Fraunhofer, Germany) will undertake a deep-dive on institutional change seeking to embed RRI in two of the largest Research and Technology Organisations (RTOs) in Europe : the Fraunhofer Institute in Germany and the Netherlands Organisation for Applied Scientific Research (TNO).

Finally in a very thought-provoking interactive session, the meeting heard and discussed *Brenda Trinidad, ASU*, plans to develop a repository of Teaching and Learning materials on responsible innovation. Hosted by ASU the repository would be constructed with and for VIRI members, and would then provide a resource base for those who wish to develop their own courses and modules on responsible innovation across the VIRI membership universities and institutes.

The 3rd and final annual meeting of VIRI in its current guise will take place at ASU in Spring 2017.

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14 March 2016