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DISCUSSION PAPER: RESPONSE

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Responsibility and innovation

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The European Commission does not seem to have made Responsible Research and Innovation a pivotal and organizing concept in the Horizon Europe Framework Program for the coming decade. This has trigged a group of early career researchers in the field to express their concerns (this issue of JRI) about the fate of RRI in the coming years.

I applaud their initiative to have an honest look in the mirror at this point in time and to think about the future of RRI. They identify a number of 'discomforts' with RRI. I agree to a large extent with their diagnosis and the suggested way forward, but would like to emphasize at the outset that RRI must not be reified, as the authors sometimes seem to do when they speak about e.g. the 'promises' and 'intentions' of RRI. If we want to allocate blame in this case, it is *people*, ourselves and our peers we should blame, not the concept of Responsible Innovation. I do not think that there are any inherent features of RRI that necessitated the problems to which the authors correctly draw our attention.

First, there is the hype and the bubble that formed around the concept of RRI. I think the authors are right to point this out, but it should also be noted that any concept that is given a pivotal role in an 80 billion R&D Government program for a ten-year period is likely to give rise to bubbles, hypes and circles of mutual admiration. This is not to say of course that it is all right to pursue doggedly whatever topic politicians put on their subsidy list. Scientific integrity implies that one thinks for oneself and prepares early career scholars intellectually for their future, irrespective of what happens to be on the political or policy agenda.

Secondly, the authors point out that RRI has not succeeded in engaging more citizens in policy and decision making regarding technology. It should be noted however that without criteria and data, it is hard to tell whether RRI has been so unsuccessful. It may even be quite early to tell what RRI has really achieved in this respect. In any case we know how hard it is to effectively and meaningfully involve citizens in science and technology policy. It can take a discouragingly long time to mainstream a particular point of view or raise public awareness regarding matters of great public concern. It took half a century to transition from the early warning signals in the Report of the Club of Rome 'Limits to Growth', Carl Sagan's expert witness testimony before Congress on Climate Change in 1985, to 'An inconvenient truth' and the 2021 Glasgow Climate Change Conference.

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The authors also suggest that RRI may have failed to bring about a much needed structural and institutional change in our thinking about science and new technology. We certainly want morally justified interventions to have the required permanence and provide robust guidance. Institutional entrenchment is a way to achieve this and some countries have incorporated RRI ideas in their innovation research and innovation policies to that effect. The Netherlands for example has recognized RRI as an important aspect of Government Innovation Policy and the Responsible Innovation Program of the Dutch Research Council has been running now for 15 years without interruption, making it the longest running and most successful interdisciplinary program of the Council.[1] Also in the UK and Scandinavia the RRI concept has had some more lasting traction in practice.[2]

Another discomfort the authors describe is the fact that RRI may have been politically naïve, thereby running the risk of being instrumentalized by solutionists and conservatists. The authors do not provide concrete examples, but I do not think that there is anything in the conception of RRI – as it was initially proposed – that makes it inherently naïve. Constant vigilance regarding 'ethics washing', 'solutionism', and 'technical fixes' is required though.

In light of these slightly uncomfortable truths the authors advocate a more pragmatic, activist, re-politicized and collaborative program that reaches out to and joins forces with impactful groups and initiatives in society that are trying to change the rules of the innovation game. I think this is the right direction to take.

There are however also a number of things that are worthwhile to hold on to in the RRI paradigm, irrespective of whether there is funding for it or not, which deserve to be foregrounded. Any framework that aims at being both normatively critical and practically relevant will have to support human beings in bringing their ethical ideals, moral principles and values to bear effectively upon the shaping of our world, and inserting them at a place and time they can make a difference and in a form that increases the likelihood that they will have impact.

The EU committee on Ethics of New Technology, which was established in 2011 and laid the foundation for the RRI policy of the EU, started out with an idea that was new to scholarship in the fields of ELSA, STS and Ethics of Technology.[3] The novelty was insufficiently appreciated, partly because many were perhaps too busy demonstrating – as the authors also point out – that RRI was merely old wine in new bottles, in an attempt to usurp and absorb the novelty into what was familiar. This made it easy to overlook the conceptual innovations as proposed in the committee's key document 'Strengthening Options' (European Commission 2013).

First, the idea of the commission at the start of the Horizon2020 Framework was to introduce a truly comprehensive, coherent and consilient program that could accommodate work on the ethical, legal and social aspects of technology by combining (i) the social sciences in a very broad sense, (ii) the engineering and applied sciences, and (iii) the humanities. Historians, STS scholars, Technology Assessment experts, ethnographers, and innovation economists had all done wonderful work in their respective fields for decades, showing in great detail and in elucidating 'thick descriptions' how technology, individuals and society mutually shape each other. Ethicists of technology, and those with a focus on the governance and regulation of technology, had been keenly focused on a normative perspective and on articulating moral reasons to justify interventions and

courses of action. But these fields of study always had an uneasy relation to each other, the former taking a descriptive and the latter a normative stance. The relation of engineering and applied science to humanities and social science have been equally cumbersome in the past.[4] The RRI initiative was among other things an attempt to reconcile these two stances and be able to draw upon the best of both and relate them in a meaningful way to engineering and applied science. An important aim was to achieve consilience and collaboration of scholars and civil society around the hard and very complex societal challenges that require explicit moral choices and moral justifications given reasonable disagreement, multiple values and perspectives of direct and indirect stakeholders. If we look at the document that marked the starting point of the European RRI development, we see that it provides the ingredients for this novel conception:

> Responsible Research and Innovation (RRI) refers to the comprehensive approach of proceeding in research and innovation in ways that allow all stakeholders that are involved in the processes of research and innovation at an early stage (A) to obtain relevant knowledge on the consequences of the outcomes of their actions and on the range of options open to them and (B) to effectively evaluate both outcomes and options in terms of societal needs and moral values and (C) to use these considerations (under A and B) as functional requirements for design and development of new research, products and services. The RRI approach has to be a key part of the research and innovation process and should be established as a collective, inclusive and system-wide approach.[5]

An innovation, defined as new functionality that is widely adopted, is morally acceptable only if it aims at solving a societal problem, without creating new problems, or exacerbating existing problems, if it does not violate extant law and ethical norms, and it accommodates a number of our moral values, and preferably more of them than less. Furthermore, innovation was characterized as a process that is geared towards optimizing the conditions for (making, taking, holding and feeling) responsibility of all involved and affected. Innovation construed along these lines is a *moral* concept. It is designed to invite and support our hard thinking, collectively, inclusively and creatively, about changing the world in such a way that we can do more of the things we ought to do. Moral progress thus can be achieved by means of a specific type of innovation that is not simply a technical fix, but a form of moral problem solving by design. Effective Ethics therefore needs to think about design requirements, and therein lies an important conceptual innovation. The RRI notion as described foregrounds this. It is important to realize that not all problems can be solved in this way, but we have a moral obligation to explore whether they can.[6]

This RRI notion replaces a notion of innovation that is *a-moral* and has led us to so many problems and propelling us from one exciting novelty to another profitable novelty, forgetful of accumulative harms, such as climate change or the rise of surveillance capitalism. It puts the economic cart before the moral horse and turns ethics into an afterthought, in the best case. RRI, on the other hand, construes 'Innovation' as a moral notion.

Will Responsible Innovation conceived along these lines disappear?[7] Time will tell. But what will stay is the notion of responsibility that has served us remarkably well for quite some time, a notion that captures what human beings owe to their fellow humans. No amount of agency laundering, bad faith, denial of the free will, or autonomous technology, will stop us from holding, making, and feeling responsible and

taking responsibility in practice. As the global issues become increasingly urgent, and as our interdependency as world citizens increases, our sense of responsibility will develop in step.

What will also stay is innovation. Societies will not stop innovating. Even our unreserved endorsement of a de-growth agenda (see Hickel 2020; reminiscent of Schumacher 1973) would still require a lot of innovation of the right sort. We will need to deal with legacy technologies and path dependencies, as we will have no opportunity to start all over again, with a clean slate. We will have to take responsibility for our innovations, whether we call that 'RRI' or something else. This will demand the utmost of us. I commend the authors for their call to action.

Notes

1. The Responsible Innovation Program became part of the official Innovation policy ('Topsectoren') of the Dutch Government, expressed in University and Industry partnerships in dedicated programs, e.g. the energy sector: https://www.topsectorenergie.nl/mvi and chemistry (https://www.nwo.nl/sites/nwo/files/documents/Topsector%20Chemie%20NWO-bijdrage%202018-2019.DEF.PDF.pdf).
2. See e.g. for the UK, https://epsrc.ukri.org/index.cfm/research/framework/; and the Danish Board of Technology: https://tekno.dk/about-danish-board-of-technology/?lang=en.
3. See for an account of the origin of the idea of Responsible Innovation: Van den Hoven (2014).
4. Organizations that have been advocating ethics codes and ethics teaching for engineers (e.g. ABET and SEFI) have spent much energy in reaching their goals over decades.
5. See Annex 1 to European Commission (2013).
6. European Commission (2013).
7. I think that it is a wise to try to combine Open Science and RRI in new programs as the European Commission has suggested in the form of 'Open RRI'. See for an analysis of the affinities e.g. Shelley-Egan, Gjefsen, and Nydal (2020). The European Group on Ethics has also re-emphasized the importance of retaining the main tenets of RRI in future policy initiatives. See European Commission (2021).

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