Editorial Presentation: Responsible Innovation (RI) in the midst of an innovation crisis

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The concept of Responsible Innovation (RI) occupies a central place in the discourse on science and technology, especially in the context of the European Union (EU) but also within academia. This concept is guided by the idea of steering science and technology towards societally desirable outcomes, particularly in response to normative objectives such as Sustainable Development Goals (von Schomberg, 2019). Visions of RI typically propose that to innovate responsibly requires a permanent commitment to be anticipatory, reflective, inclusively deliberative, and responsive (Owen *et al.*, 2012). They also emphasize the need for open access, gender equality, science education, ethical standard in conducting experiments, and democratic governance (European Commission, 2020).

However, the societal purpose of RI fundamentally conflicts with the imperative of maximizing economic growth inherent in today's innovation climate (von Schomberg, 2022). This conflict points to a crisis in which innovation struggles to serve public interests insofar private interests continue to be prioritized. The magnitude of this crisis is also reflected within the RI literature itself, where the political ambition to exceed the privatization wave is summoned to a techno-economic concept of innovation (von Schomberg & Blok, 2019). This issue of *NOvation – Critical Studies of Innovation* brings into question to what extent innovation necessarily relates to the market, whether it is possible to develop an alternative concept of innovation that is separated from economic ends, and how we can conceptualize, for example, a political understanding of innovation. What really is innovation? While all seven contributions share the aspiration to critically reflect on these questions, they each offer a distinct and original perspective in discussing the relation between innovation, technology, politics, economics, and responsibility.

In the first research article, Bedreddine (2022) draws on the interdependency of politics and economics to examine the emerging context of RI in France. In doing so, RI is shown to be constituted in a space where agents of the private sphere and the public sphere converge. Through empirically analysing interactions that take place in this space, including those between innovation managers, politicians, executive directors, and the wider public, the article investigates the way in which innovation transforms the fields of economics and politics in France, resulting in a loss of autonomy for both.

In response to the changing nature of innovation in the digital age, the second research article invites the RI discourse to revisit their foundational narrative (Bryce *et al.*, 2022). It explores to what extent RI is anchored in underlying assumptions about contemporary technologies and, in turn, what limitations this faces in today's increasingly digital context. As such, the authors aim to broaden the horizons of RI, highlighting that the potential to steer innovation towards societally desirable outcomes depends on the awareness researchers and practitioners have of digital technologies and so-called metatechnologies.

The third research article critically accounts for how mid-stream actors deal with tensions between a commitment to RI and anticipated market requirements (Frost *et al.*, 2022). Through conducting exercises that build on Socio-Technical Integration Research (STIR), the authors point to "the underlying assumption that marketability of prospective outcomes is not one objective amongst others but the precondition for all others". Social and environmental values are only considered insofar they are adopted by a techno-economic paradigm of innovation. To this end, the article calls for greater efforts beyond midstream constellations to contest the resilience of the techno-economic paradigm of innovation.

The concept of innovation lacks a strong conceptual understanding both within and beyond the RI literature. To this end, Michels (2022) argues that "innovation is inescapably normative" and proposes a new definition in which innovation is understood as "*ethical change that delivers substantial applied value to beneficiaries of a domain*" (original emphasis). Through articulating this novel definition, the fourth research article rethinks the relationship between innovation, technology, and the marketplace, ultimately refining the meaning of RI.

While Michels (2022) points to the normativity of innovation, Penttilä (2022) argues that the operationalisation of such normativity requires a strong political dimension. Particularly in response to the phenomenon of depoliticization, structurally underpinned by economic incentive, the fifth research article urges frameworks of RI to "adopt a *political* conception of responsibility in order to safeguard the legitimacy of the values and outcomes it deems societally desirable" (original

emphasis). Drawing on the work of Hannah Arendt, it accounts for the interrelation between responsibility and politics, and in doing so, contributes to the politicization of RI.

The interrelation between responsibility and politics is further reflected in the RI dimension of anticipation, as denoted by the sixth research article. Here, Rodríguez *et al.* (2022) argue that the scope of anticipatory practices is specified by the socio-political context in which they take place. In the EU research and innovation policy context, they identify such practices with a "disruptive-limiting" duality. On the one hand, the emergence of RI aims to facilitate a critical and radically open debate on the underlying purposes of innovation systems. On the other hand, the dominant techno-economic imperative limits such as debate to "normative milestones that are prefixed and impervious to debate".

In the final research article, Tabarés (2022) employs a RI perspective to critically assess the development and challenges of Open Access (OA). While OA provides several opportunities to transform the landscape of academic publishing, under the sway of digitalization it has "reinforced the oligopoly of for-profit academic publishers". To this end, the article argues that OA should not exclusively focus on making scientific articles widely available, but more fundamentally, contest the exploitation that takes place in the growing "platformization" of academic publishing.

REFERENCES

European Commission (2020). *Horizon 2020: work programme 2018-2020: Science with and for Society.* Resource document. https://ec.europa.eu/research/participants/data/ref/h2020/wp/2018-2020/main/h2020-wp1820-swfs_en.pdf

Owen, R., Macnaghten, P., & Stilgoe, J. (2012). Responsible research and innovation: from Science in Society to Science for Society, with Society. *Science and Public Policy,* 39(6), 751-760. https://doi.org/10.1093/scipol/scs093

Von Schomberg, L. (2022). *Raising the Sail of Innovation: Philosophical Explorations on Responsible Innovation.* Wageningen University. https://research.wur.nl/en/publications/raising-the-sail-of-innovation-philosophical-explorations-on-resp

Von Schomberg, L., & Blok, V. (2019). Technology in the Age of Innovation: Responsible Innovation as a New Subdomain Within the Philosophy of Technology. *Philosophy &. Technology*, 34, 309-323. https://doi.org/10.1007/s13347-019-00386-3

Von Schomberg, R., & Hankins, J. (2019). *International Handbook on Responsible Innovation: A Global Resource.* Edward Elgar Publishing.