

## **A deeper sense of urgency: a plea for responsible exnovation**

**Pierre Delvenne, Sarah Delvaux, Céline Parotte**  
**FNRS - University of Liège, Spiral Research Center, RU Cité, Belgium**

RRI is the blunt expression of an oxymoron. As such, innovation cannot be responsible due to the inherently uncertain and disruptive process of creative destruction that characterizes innovation (Schumpeter 1942). Therefore, RRI reflects the need to reconcile a tension between the unconditional support of science, technology and innovation (STI) as strategic resources to generate growth and competitiveness and the acknowledgment that it is far from automatic that STI will meet the needs and concerns of citizens or contribute to an increase of their well-being. RRI posits innovation as a good in itself (Dodier 1993), meaning that it is a goal worth pursuing as such. The underlying logic is that it would be immoral to oppose or contest the development of innovations, especially when it is expected from them to fix a set of epochal crises and grand challenges (Tyfield 2012), such as tackling climate change or ensuring the production and consumption of energy at a sustainable individual and collective cost. While RRI elevates innovation to the status of a ‘social good,’ it also diverts public and political attention from the ‘social bads’ induced by innovation, i.e., environmental pollution or contamination, job losses, health risks. To ensure the rightful distribution of responsibility, RRI promotes the ‘co-responsibility’ of industrial and societal actors, implying both a transfer of responsibility at the level of individuals and a collective appeal to responsibility supported by public debate. Many criticisms have been levelled at proponents of the RRI approach, such as the tendency to operate by ethical checklists or to consider that ‘upon everyone’s shoulders rests a particular moral obligation to engage in the collective debate that shapes the context for collective decision making’ (Von Schomberg 2007; Owen, Macnaghten, and Stilgoe 2012, 756). Along these lines, RRI’s rationale moralizes publics, trivializes those who would not want to ‘take their part’ of responsibility, and ignores the more vulnerable individuals who lack the economic, political and cultural resources to engage in collective debate (Delvenne 2017).

Building on these criticisms, this paper focuses on another urgent but neglected aspect of what ‘responsibility’ entails and proposes to shed light on a little-studied moment in the (responsible research and) innovation cycle: the end of life of innovation and the processes of ‘exnovation’, i.e. decline, phasing-out or decommissioning. This process is still largely experimental and implies multiple side effects, from unseen environmental pollution, to the consolidation of emerging value chains, to memories of a promised future (Velho and Ureta 2019). The argument that will be developed here is that it is urgent to consider symmetrically the ‘social goods’ and the ‘social bads’ of innovation, which implies cultivating the “art of paying attention” (Savransky and Stengers 2018) to the spillover effects of innovation, including when it solidifies in material infrastructures until it becomes almost ordinary and very complicated to dismantle.

This requires the development of RRI as a political practice that allows us to see, and thus discuss, things that would otherwise remain invisible and that creates a collective obligation to engage with the future of innovations beyond the market creation processes and the innovations themselves. We call this “responsible exnovation”.