Emerging technologies as the next pandemic?

Possible consequences of the Covid crisis for the future of responsible research and innovation

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Digital technology plays a key role during the Covid-19 pandemic. It is used to hunt for vaccination and treatment; it helps us collect and represent the data to understand the progress of the disease and it contributes to tracking and tracing infections. While these uses are generally well intentioned, they are also potentially problematic and call for external scrutiny and critique. In particular the Covid tracing apps are currently hotly debated and their technical, security or privacy implications raise significant amounts of concern (Morley et al. 2020).

These are topics and questions that call for social and ethical reflection as described in the articles of this special issue. In this short research statement, I would like to shed light on a different possible consequence of the pandemic. I will ask whether the pandemic may pave the way towards a different and possibly more radical way of governing emerging digital technologies in democratic societies. I will use the concept of responsible research and innovation (RRI) to explore this question.

RRI is a term of high relevance in science, research and innovation governance. Introduced into the debate about a decade ago (von Schomberg 2011), it has been defined as the "on-going process of aligning research and innovation to the values, needs and expectations of society" (Rome Declaration 2014). There are different flavours of RRI (Owen and Pansera 2019), including the European Commission's (2013) one that consists of six pillars or keys (engagement, gender equality, science education, ethics, open access and governance) and the one adopted by the UK's Engineering and Physical Sciences Research Council (Owen 2014), represented by the AREA acronym (anticipate, reflect, engage and act) which is based on Stilgoe et al. (2013).

RRI has been prominent in a number of different national research funding streams. The probably biggest funder of RRI-related work is the European Commission that invested heavily into RRI in its Horizon 2020 Framework Programme under the heading of science with and for society. As a result of these funding opportunities, much research has been undertaken to better understand existing responsibilities and to develop conceptual frameworks and empirical insights. One of its successes has been to bring together a range of established discourses covering different aspects of research, science and innovation governance under one shared umbrella. These discourses include, for example, technology ethics, philosophy of technology, computer and information ethics, value-sensitive technology assessment, science and technology studies and others.

While RRI has thus been influential in shaping the way reflexivity is integrated in science, research and innovation, it is yet to be determined whether it was successful in fulfilling the grand vision of aligning science and society more closely. One reason for this uncertainty is arguably the current focus of much RRI on the research and project level. Much effort is expended on determining responsibilities of individuals and institutions that undertake research and innovation activities.

This is consistent with much of research and innovation policy in western democracies. Research, science and innovation have been left to their own devices since the second world war, based on the social contract that offered freedom to science in exchange for the benefits of innovation and the creation of capacity in innovation processes (Jasanoff 2011). In the UK, for example, this is enshrined by the so-called Haldane Principle, that holds that "decisions about what to spend research funds on should be made by researchers

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rather than politicians", a position still upheld by the Parliament of the UK.¹

This local focus of RRI that emphasises the governance of research, innovation and technology on the level of researchers and research institutions can have disadvantages. It could be argued that it can lead to organised irresponsibility by raising expectations that are impossible to realise. In the worst case this can flip over into unwarranted creation of legitimacy (Coeckelbergh 2020) or even ethics washing (Wagner 2018). It is certainly open to debate whether such views are justified. More empirical research into the consequences of RRI would help shed light on this.

However, another way of looking at RRI is to focus on its potential for intervening on and interacting with the policy level. It has long been noticed that the attempt to align science, research and innovation with public opinions has an important political side, but that politics is notably absent in much RRI research and practice (van Oudheusden 2014). More radical interpretations of RRI than the ones that can currently be observed are certainly possible (von Schomberg 2020). Such more radical interpretations could involve stronger involvement of high-level decision and policy makers, something that has not been visible in RRI so far. RRI is certainly carried by the political will to engage with difficult questions of future impacts of current research but direct political intervention remains rare.

The question I would like to raise in this paper is whether the Covid-19 pandemic may serve as a catalyst that would contribute to a more radical approach to research and innovation governance. One undoubtable consequence of the pandemic is that governments the world over have uncereemoniously ditched long-held ideological positions about the role of the state, for example by practically taking large parts of the workforce into paid employment by the state. The size of the threat and the need for public reaction has enabled policymakers to overcome long-held beliefs in favour of quick and drastic actions whose consequences will not become fully clear for a long time.

This brings us back whether a similar change of ideological commitments would be conceivable for science, research and innovation. There are many important and categorical differences between a disease and a new technology. However, the current discourse on emerging digital technologies, in particular artificial intelligence, which is seen as a threat to employment, fairness, transparency, political participation and democratic accountability, to name but a few, would seem to suggest that at least some digital technologies can raise significant concerns. The question then is whether these threats are likely to develop to the point

where a political reaction akin to the one we see at present is likely. Or, to put it differently, we should ask whether emerging technologies can and will be perceived as a threat of a similar level as the current threat of the Covid virus, thus requiring radical intervention on a level that research and innovation governance has so far eschewed.

This short paper does not offer the space to explore such a complex question in detail. Furthermore, I should add that I am not arguing that we need a more interventionist approach to science policy or a more radical approach to RRI, but that such a development now looks more conceivable than it did in 2019. The pandemic may shift our societal perceptions in a radical manner that would allow for a fundamental rethinking of how we govern science, research and innovation. I am not offering a judgment as to whether this would be a good thing or a bad thing. What I am saying is that this is a possibility arising from the pandemic. The community of scholars interested in reflecting on scientific and technical progress, notably including the RRI community, would be well advised to be aware of this possibility to be prepared to engage with policymakers in a discussion of how innovations and the scientific and research activities that underpin them should be dealt with when societies move to the 'new normal'.

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