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Journal of Responsible Innovation

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/tjri20

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To cite this article: Kevin Albertson, Stevienna de Saille, Poonam Pandey, Effie Amanatidou, Keren Naa Abeka Arthur, Michiel Van Oudheusden & Fabien Medvecky (2021): An RRI for the present moment: relational and 'well-up' innovation, Journal of Responsible Innovation, DOI: 10.1080/23299460.2021.1961066

To link to this article: https://doi.org/10.1080/23299460.2021.1961066

Published online: 25 Aug 2021.

JOURNAL OF RESPONSIBLE INNOVATION
https://doi.org/10.1080/23299460.2021.1961066

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PERSPECTIVES

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An RRI for the present moment: relational and 'well-up' innovation

Kevin Albertson [a], Stevienna de Saille [b], Poonam Pandey [c], Effie Amanatidou [d], Keren Naa Abeka Arthur [e], Michiel Van Oudheusden [f] and Fabien Medvecky [g]

[a]Department of Economics, Policy and International Business, Manchester Metropolitan University, Manchester, UK; [b]Department of Sociological Studies, University of Sheffield, Leeds, UK; [c]DST-Centre for Policy Research, Indian Institute of Science, Bangalore, India; [d]Aristotle University of Thessaloniki, Greece and Manchester Institute of Innovation Research, The University of Manchester Alliance Manchester Business School, Manchester, UK; [e]Centre for Entrepreneurship & Small Enterprise Development, University of Cape Coast, Cape Coast, Ghana; [f]Centre for Sociological Research, KU Leuven, Leuven, Belgium; [g]Centre for Science Communication, University of Otago, Otago, New Zealand

ABSTRACT

The ultimate framing of the first iteration of RRI as enabling smart, inclusive, sustainable growth had as much to do with the financial crisis then engulfing the Eurozone as meeting the goals of the Lisbon Treaty. Now we have come to the end of Horizon 2020, it is presently unclear how RRI will continue to be addressed as it is mainstreamed into Horizon Europe. In this Perspective, we will argue that discussions about placing responsibility at the centre of innovation should not solely be aimed at promoting GDP-measured growth. Our vision must be longer, more global, more transformative. In this short piece, we explore the possibilities arising through extending 'responsibility' to an a-growth approach to innovation, one which emphasises the relational dimensions of responsible innovation through the concept of 'well up' economics.

ARTICLE HISTORY
Received 21 September 2020
Accepted 22 July 2021

KEYWORDS
Responsible research and innovation; ethics of care; well-up economics; relational innovation; responsible stagnation

Introduction

When first discussed at the European Commission in the early 2010s, a broad spectrum of possible meanings and implications of Responsible Research and Innovation (RRI) was on offer. Some of these considerations made it into the form of RRI which was eventually embedded, albeit incompletely, in the Horizon 2020 programme. Others, such as 'stewardship of the future' and 'commitment to care' (EC 2011) have yet to be enacted in meaningful ways. Now, as Horizon 2020 becomes Horizon Europe, co-design is gaining prominence, at least amongst academics, as a way of guiding technological development (Robinson, Simone, and Mazzonetto 2020) – an achievement based on a large volume of research on the theory and practice of involving stakeholders and publics in RRI projects

CONTACT Kevin Albertson k.albertson@mmu.ac.uk & Stevienna de Saille s.desaille@sheffield.ac.uk

(much of which has been published in this journal). However, the Strategic Plan for Horizon Europe (European Commission 2019), in which RRI is now mainstreamed, mentions growth 46 times, co-design 10 times and RRI not at all.

One of the historical challenges facing the EU's policy of RRI has been its emergence in conditions of 'secular stagnation' (Summers 2014), a state of low-to-no growth within industrialised nations that have achieved their productivity peak, which innovation-for-growth alone cannot effectively address (Jackson 2019). A complex and controversial topic (c.f. Teulings and Baldwin 2014; Pagano and Sbracia 2014; Anselmann 2020), we nevertheless find it a useful heuristic for this discussion. If secular stagnation is to be the context of innovation for the foreseeable future, then responsible innovation could offer something beyond merely mitigating risks and benefits, a pathway towards embracing our responsibilities to the future, the earth and each other, whatever that might mean for GDP-measured growth (de Saille et al. 2020). In this *perspective* we unpack this argument further, offering 'responsible stagnation' as a form of responsible innovation that is agnostic to growth but sensitive to the relational dimensions of responsible innovation, and the concept of 'well-up' economics as an alternative metric.

Growth isn't working

Policy discussions of RRI and related approaches to responsible innovation often presume an economic outcome without examining the economic context in which innovation occurs. Consider the presumption that human progress comes primarily through interactions within globalised free-markets, and which is reflected, for example, in the 8th UN Sustainable Development Goal of 'decent work and economic growth'. 'Growth' is generally interpreted to imply increasing real (i.e. inflation adjusted) GDP. However, there are several problems with this definition of progress.

In the first place, it is not clear that economic growth facilitates decent work. After a 'jobless and wageless recovery' (Calvo, Coricelli, and Ottonello 2012) from the 2008 financial crisis, in 2019 there were only enough *good* jobs for half – and only enough *great* jobs for 5% – of the global labour force (Clifton 2019). Innovation that leads to productivity growth is likely to exacerbate this shortfall in *decent* work. As knowledge increases, market power shifts in favour of those who are in a position to enclose, commodify, and exploit intellectual property and the resources it requires, and have greater means to appropriate the benefits of innovation compared to those with only their labour to sell. The latter are therefore more likely to see their bargaining power in the market decline (Gómez-Baggethun and Ruiz-Pérez 2011; Behrens et al. 2007).

Secondly, the supposed benefit of GDP growth is based on the assumption that aggregate increases in income and expenditure will benefit all members of an economy. Although some economists insist that wealth increases do trickle down to the rest of the population, there are historical examples that indicate that productivity increases tend to suck collective wealth upward instead (c.f. Komlos 1998). More recent empirical research also does not show a trickle-down effect from tax cuts for the rich (Berisha 2018) or from policies such as quantitatve easing (Watkins 2014). In general, the evidence for the so-called trickle-down effect is mixed at best (e.g. Aghion and Bolton 1997, 152; Basu and Mallick 2008, 461). In such cases, the fate of the economically vulnerable may be

imperilled unless they can access sufficient agency to resist exploitation, for example, through relational innovations such as unionisation. As Stiglitz (2015: 134) argues, '[t]he trickle-down notion … needs urgent rethinking'.

Further, headline GDP growth data do not account for much of the costs of growth. These may be passed: into the future through increasing financial debt, exacerbating the risk of future financial crises (Kose et al. 2021); onto other stakeholders through driving down or constraining terms and conditions of employment of the vulnerable (see, for e.g. Madrick and Papanikolaou 2010); and/or into the wider environment through ecological damage (Rice 2007). If such unaccounted costs are offset against GDP, it is reasonable to conclude there has been little to no real (i.e. inflation adjusted) sustainable global growth for decades (Kubiszewski et al. 2013). Even before the impact of COVID-19, the OECD had predicted global growth would become increasingly difficult to sustain (Braconier, Nicoletti, and Westmore 2014).

Ultimately, as a method of coordination, transactional markets are amoral and therefore consider neither benefits nor costs from the holistic perspective imagined by frameworks for responsible innovation. Thus, the growth imperative makes use of both old and new forms of dispossession and colonisation (see e.g. Pansera and Owen 2018) and separates such frameworks from discussions about the socio-political economy in which innovation occurs (Van Oudheusden 2014).

From transactional to relational

We do not argue that Responsible Innovation should stand in opposition to growth; however, it must be robust to situations of low-to-no growth. Herein, the term 'responsible' indicates innovation that is appropriate in prevailing socio-economic conditions, innovation which will not compromise the wellbeing of vulnerable stakeholders or of future generations. Responsible innovation as 'stewardship of the future' and 'commitment to care' is also innovation that promotes social inclusion, geographically and temporally. This may include, but is not limited to, the idea of 'inclusive growth' as defined by the OECD (2018), in which growth and the opportunities it creates are to some extent distributed across society. However, equitable distribution in market conditions is unlikely; it is for this reason that we consider 'innovation' as something that extends beyond the market, producing a change in social relations.

Relational innovation

The transactional economy of enclosure, commodification and marketisation relies on pre-existing relationships. However, in free-markets, relational motivations are often downplayed in favour of monetary incentives (Smith 1776: BkI ChII). Yet market based competition can undermine relationships (Röpke 1950, 52), the maintenance of which is the source of much human happiness (Demir 2013). Relationships also have a part to play in material wellbeing. Research in ecological economics and community economies, for example, and in frugal, social, grassroots and other models of innovation, has shown that there are diverse socio-economic relationships beyond transactional money-based systems. These enable people to secure their livelihoods in a variety of ways (Gibson-Graham, Cameron, and Healy 2013), and to engage in innovation in a

way that does not rely on conventional markets. Such approaches call attention to the socio-economic worlds that exist and sustain wellbeing outside the dominant transactional logics of possession and dispossession (Mamidipudi, Syamasundari, and Bijker 2012).

A relationship to care, for example, rather than to the imperative of transactional growth, may re-configure economies holistically as spaces for political possibility, experimentation, and new forms of innovation. Tronto (2017) argues that care is also a matter of repairing and sustaining our world; as an everyday material practice, it is not necessarily outcome oriented nor does it necessarily try to 'fix' problems and vulnerabilities. It is a relational mode of co-existing *with* vulnerabilities by acknowledging dependencies and limits.

A commitment to the relational, rather than the transactional, makes space for renegotiating and humanising our ways of understanding growth, progress, development and knowledge, innovating in support of (rather than in spite of) environmental dependence and planetary limits. It emphasises the development of agency of all participants and the respect of local culture, rather than the imposition of a globally homogenising transactional worldview. The following questions may help determine whether a particular innovation sacrifices the relational to the transactional:

- What kind of relationships does it challenge or produce?
- What are the costs/benefits to wellbeing and agency as a result of these relational changes?
- To what extent does the innovation enable, result from, support or challenge various agents' ability to care?

A relational approach to motivating and evaluating innovation (broadly speaking) emphasises solidarity and connexion among humans, non-humans, the environment and technology over relations of enclosure, extraction and transaction. Innovations to sustain economies, ecologies, communities, and wellbeing must therefore be relational at their core.

Well-up innovation

Improving relationships oriented towards care cannot, of course, altogether offset material deprivation. Therefore, it is important also to consider matters of economic vulnerability, inequality and justice. While a quest for perfect equality is utopian, it seems reasonable to propose that responsible innovation should not, without good reason, exacerbate existing inequalities (e.g. Monteiro, Shelley-Egan, and Dratwa 2017). Furthermore, given the fairly wide uptake of Rawlsian principles in diverse articulations of responsible innovation (e.g. Pellé 2016; Taebi et al. 2014; Wong 2016), it is reasonable to define a responsible innovation system as one in which the greatest possible benefits of the innovation accrue to the least-advantaged members of society (Rawls 1971). Such an approach to innovation calls for a 'two-fold innovation focus' in which principles of justice and creating stability for the future inform new spaces for innovation (Ziegler 2015).

This is not to suggest that vulnerable groups are in need of perpetual economic and technological fixes to be dispensed by elites through innovation (cf. Van Oudheusden 2014); rather that responsible innovation must be judged by its impact on both material returns and the *agency* of the most vulnerable – including the agency of future generations. We propose the term 'well-up' to capture both of these criteria.

The principle of 'well-up' follows from Rawls' (1971) second principle of justice, which argues that, subject to considerations of equal civil liberties (Rawls' first principle), inequality can be justified only if it leads to the greatest benefit to the least advantaged. The term is chosen to contrast with the principle of 'trickle down', under which theory it is the material conditions of economic elites which are prioritised, as discussed above.

The following 'well-up' questions may help determine whether an innovation is systemically just:

- Compared with current innovations, and alternative uses of the same resource, what are the benefits and costs of this innovation for the most vulnerable stakeholders?
- Does the innovation enhance the agency of the most vulnerable stakeholders?

In short, well-up innovation must prioritise the needs of those who have the least power, over the preferences of those who have the most. This principle is rooted in Rawlsian principles of justice and decades of economic data which show, as we have discussed above, that further enriching economic elites is *not* the best way to increase prosperity for all.

A current example of the application of well-up principles may be seen in the global vaccination programme for COVID-19. However imperfectly implemented, it is generally accepted in many countries that the most vulnerable, for example the elderly and front-line health workers, not the most affluent, ought to take priority. The adoption of well-up principles more widely would represent a profound reconsideration of economic evaluation criteria away from considering aggregate benefits to considering who might benefit most.

Conclusion

We have argued that much of what passes for material (economic) growth in the global economy is underpinned by increasing financial and ecological debt. Further, if we do consider developed economies to be suffering from secular stagnation, and to have reached a point where productivity gains will benefit only a small percent and perhaps harm a great many (Kubiszewski et al. 2013; Summers 2014; Braconier, Nicoletti, and Westmore 2014), then growth-seeking paradigms of innovation may in fact be inappropriate, even irresponsible. However, this does not mean human progress must come to a halt.

A different concept of innovation is required, one which promotes relational affluence, rather than material affluence – particularly in countries where basic needs for most are already met. Complementing that of relational innovation, the principle of well-up innovation argues that whatever further material progress is possible ought to benefit those who remain the most materially deprived.

With over a decade of scholarship and policy making around responsible innovation, broadly understood, and as much of the world looks to a post-pandemic return, the time is ripe to incorporate well-up and relational innovation alongside questions about who benefits from innovation and who is impacted, who is engaged and how. This will help align the values of care, stewardship, social welfare and sustainability with a vision of progress that promotes multiple forms of human and social affluence and that re-conceptualizes and re-organizes resource distribution to address the needs of the most marginalised groups.

To ensure such a vision of responsible innovation, the agenda of Horizon Europe needs to adopt a holistic approach to innovation, acknowledge the relational and material interdependencies among different regions of the world and promote innovations that advantage those with the most situational improvement to gain.

Acknowledgements

The authors are all members of The Fourth Quadrant Research Network (4QRN). 4QRN would like to thank the Independent Social Research Foundation for a Small Group grant which enabled the foundation of the network. For more information, go to http://fourthquadrant.org.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Notes on contributors

Kevin Albertson is Professor of Economics at Manchester Metropolitan University.

Effie Amanatidou is Honorary Senior Research Fellow at Manchester Institute of Innovation Research at the Alliance Manchester Business School, University of Manchester.

Keren Naa Abeka Arthur is Lecturer at the Centre for Entrepreneurship and Small Enterprise Development (CESED) at the University of Cape Coast, Ghana.

Stevienna de Saille is Research Fellow in the Institute for the Study of the Human (iHuman) and Lecturer in the Department of Sociological Studies at the University of Sheffield.

Fabien Medvecky is Senior Lecturer in Science Communication at the University of Otago.

Poonam Pandey is Research Fellow at the Department of Science and Technology-Centre for Policy Research (DSTCPR), Indian Institute of Science, Bangalore.

Michiel Van Oudheusden is a Researcher in the Centre for Sociological Research (CeSO) at KU Leuven, Belgium.

ORCID

Kevin Albertson http://orcid.org/0000-0001-6678-5590
Stevienna de Saille http://orcid.org/0000-0002-8183-7771
Poonam Pandey http://orcid.org/0000-0002-2296-6821
Effie Amanatidou http://orcid.org/0000-0002-3574-5606
Keren Naa Abeka Arthur http://orcid.org/0000-0002-9904-4323
Michiel Van Oudheusden http://orcid.org/0000-0003-3748-0469
Fabien Medvecky http://orcid.org/0000-0002-7317-8518

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