TRACK 5: How Can Emerging Technologies Be Inclusive? Inclusive Innovation and the Challenges for STI-Policy

Session Proposers:

Barbara Ribeiro
barbara.ribeiro@manchester.ac.uk, Manchester Institute of Innovation Research, Alliance Manchester Business School, University of Manchester

Philip Shapira
pshapira@manchester.ac.uk, Manchester Institute of Innovation Research, Alliance Manchester Business School, University of Manchester/School of Public Policy, Georgia Institute of Technology

Abdullah Gok
abdullah.gok@manchester.ac.uk, Manchester Institute of Innovation Research, Alliance Manchester Business School, University of Manchester

Joanna Chataway
j.c.chataway@sussex.ac.uk, Science Policy Research Unit (SPRU), School of Business, Management and Economics, University of Sussex

Robert Meckin
robert.meckin@manchester.ac.uk

Description:

Inclusive innovation suggests that science, technology and innovation should not only be aligned to economic needs but should also reflect societal concerns and address the needs of the poorest and more vulnerable part of the population. Ideas related to inclusive innovation can be traced back to Robert Owen's small-scale mills in England in the early 1800's, and Gandhi's philosophy from the early 1900's, which influenced the work of the economist Fritz Schumacher on appropriate technologies in the 70's (Chataway et al. 2014). Although distant in time, these critical ideas remind us that technological development raises longstanding problems of social inequality related to the production and use of artefacts. A well-known global challenge, social inequality has been rising within European countries as well as in the US, and should no longer be considered exclusive to less economically developed countries from the global South. However, despite its relevance to research policy and evaluation, inclusive innovation is still a largely overlooked concept in the innovation studies literature (Foster and Heeks 2013).

Inclusive innovation could complement responsible research and innovation (RRI) frameworks as a parallel approach that brings on board a fundamental and missing discussion on social equity in the governance of emerging technologies. One of the few contemporary scholars exploring the notion of inclusive innovation applied to the case of emerging technologies is Doris Schroeder, who has argued that inclusive innovation may work as a bridging concept between system innovation approaches (as non-normative, descriptive) and RRI (as a normative concept) (Schroeder et al. 2016). Despite its inherent challenges, inclusive innovation could work as a tool for social development, where the notion of social justice is a central piece of the innovation process (Smith et al. 2013). Through engaging a broader range of people, concerns and values, collaborative learning

and co-production processes are fundamental in achieving this (see Vooberg et al. 2015 for a review).

The question of whose and what values are accounted for in the development of science and technology and their social appraisal (Sarewitz 2016) requires a focus on equity and understandings of societal needs (Grimshaw et al. 2011). Through the lens of inclusive innovation, looking at emerging technologies in the fields of, for example, synthetic biology and nanotechnology, one would ask a) how societal needs, benefits and potential negative impacts of these technologies are defined and by whom and b) how benefits and trade-offs are likely to be socially distributed (regionally, nationally and/or internationally). These questions complement and expand the more typical economic approaches to the analysis of the societal benefits of technology and innovation.

In this session we are interested in unpacking the concept of inclusive innovation and using it as lens to analyse emerging technologies. By doing so, we would like to encourage broadening the scope of both inclusive innovation and RRI, moving beyond their internal debates, and favouring a global outlook. We seek reflection on how inclusive innovation could make a positive contribution to the development of emerging technologies and what challenges the operationalization of inclusive innovation might pose to science, technology and innovation policy. We would like to invite theoretical and empirical contributions that engage either directly or indirectly with the concept of inclusive innovation, both in the European and/or international contexts. The following questions include some of the aspects we would like to explore during the session and to reflect on after the conference to inform a discussion piece (paper proposals do not necessarily need to be limited to them):

- What are the different understandings of the notion of "inclusiveness" being mobilised in innovation in emerging technologies, especially in the case of synthetic biology, nanotechnology, and next generation manufacturing?
- How has inclusive innovation been articulated in the context of emerging economies by multilateral organisations such as the UN, World Bank and OECD?
- What are the main concepts behind inclusive innovation in academic and policy circles?
- How can inclusive innovation be operationalized? Which tools can be useful and what are the criteria that can be used when assessing emerging technologies?
- What are the differences between inclusive innovation being articulated in the case of technological innovation and of other forms of innovation, such as social innovation and grassroots innovation?
- How co-production/co-creation is understood within the context of inclusive innovation?
- How can inclusive innovation be addressed in innovation governance and science, technology and innovation policy and what are the challenges to this?

References:

Chataway, J., Hanlin, R., & Kaplinsky, R. (2014). Inclusive innovation: an architecture for policy development. Innovation and Development, 4(1), 33–54.

Foster, C., & Heeks, R. (2013). Conceptualising Inclusive Innovation: Modifying Systems of Innovation Frameworks to Understand Diffusion of New Technology to Low-Income Consumers. European Journal of Development Research, 25(3), 333–355.

Grimshaw, D. J., Gudza, L. D., & Stilgoe, J. (2011). How can nanotechnologies fulfil the needs of developing countries? In S. E. Cozzens & J. M. Wetmore (Eds.), Nanotechnology and the Challenges of Equity, Equality and Development (pp. 379–391). Springer Science+Business Media.

Sarewitz, D. (2015). Science can't solve it [Comment]. Nature, 522, 413–414.

Schroeder, D., Dalton-Brown, S., Schrempf, B., & Kaplan, D. (2016). Responsible, Inclusive Innovation and the Nano-Divide. NanoEthics, 10(2), 177–188.

Smith, A., Fressoli, M., & Thomas, H. (2013). Grassroots innovation movements: Challenges and contributions. Journal of Cleaner Production, 63, 114–124.

Voorberg, W.H., Bekkers, V.J.J.M., & Tummers, L.G. (2015). A Systematic Review of Co-Creation and Co-Production: Embarking on the social innovation journey. Public Management Review, 17(9), 1333-1357.