

## A Journey through STS and Innovation Studies

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### Abstract

This short contribution traces the author's journey in English universities, through innovation studies to STS in the last two decades of the twentieth century. It highlights the diversity of meanings of the concept of 'innovation', over time, across disciplines and social actors, and the importance of continuing to contest definitions. It concludes by reflecting on what innovation studies can offer to STS scholarship.

### Keywords

innovation studies; UK universities; STS method; Schumpeterian economics, radical science movement

### Introduction

In his introductory essay, Alan Irwin poses three questions. I return to the first and third below, but now consider the second: when studying innovation, how should we view the relationship between STS and neighbouring fields, especially innovation studies? For myself, this is analogous to the relationship between my chosen family (STS) and my biological family (innovation studies). I love them both, though am sometimes irritated by the latter for not taking my chosen ones and their concerns seriously. I am nonetheless happy to see them all at major occasions, such as weddings and conferences, when everyone is on their best behaviour and aware of their shared concerns.

Let me start at the beginning. My academic journey started with studying economics, of the post-Keynesian variety, at McGill University in Montreal. It was very unusual in the late 1970s (and sadly still today) for economics degrees to offer teaching in post-Keynesianism and political economy when neoclassical and monetarist approaches dominated curricula in Canada, the US, and probably elsewhere. For my course in the 'History of Economic Thought', I was expected to read the work of Joseph Schumpeter (1954) when I was just seventeen. This made me aware that mainstream economics did not pay enough attention to technological change. At best, technology was an exogenous variable, causing seemingly random shocks to the economic system. After my MA, also in economics, at Sussex University in England, I was extraordinarily lucky to be offered a one-year position as a research assistant at SPRU (Science Policy Research Unit) working directly with Luc Soete (see [Irwin 2023](#)) and Keith Pavitt. It was 1980, and this was my introduction

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**To cite this article:** Wyatt, Sally. 2023. "A Journey through STS and Innovation Studies." *Engaging Science, Technology, and Society* 9(2): 107–111.  
<https://doi.org/10.17351/ests2023.1367>.

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to innovation studies. It was a privilege (possibly not fully appreciated by my young self) to work not only with Pavitt and Soete but also with Christopher Freeman, and many others. I remember lively discussions about the distinctions made by Freeman ([\[1974\]](#) [1982](#)) between incremental, radical and systems innovations, and between product and process innovations, when one company's product would of course be another company's process. Clearly, it was possible for economists to take technology seriously. I also remember listening to Freeman's lectures on long waves (also known as Kondratieff cycles after the Russian economist of the same name, Nikolai Kondratieff) and unemployment, with tears in my eyes. Freeman was an extraordinarily gifted speaker whose humanity and humility always shone through his presentation of what could appear to many as rather obscure and arcane topics.

My six years at SPRU were an education, not only in innovation studies but also in many other topics ranging from time use and domestic technologies to the use of patents by multinational corporations. My theoretical interests expanded from the economics of innovation and technology indicators to encompass debates about the information society and women's employment. The group of feminists working at SPRU not only worked on funded projects about women's training and employment, but also voluntarily came together as a reading group and later offered adult education courses about women and technology. This group included Wendy Faulkner, Flis Henwood, Christine Zmroczek, and others.

After a decade of precarious research contracts throughout the 1980s at Sussex and elsewhere, the time had come to look for a more permanent position. More luck ensued. I was taken on as a lecturer (assistant professor) at the recently established Department of innovation studies at the then Polytechnic of East London (formerly North-East London Polytechnic; after 1992, University of East London (UEL)). UEL is located in one of the most economically deprived parts of London, and one of its core missions was, and is, to offer higher education to the local community, particularly mature students without formal educational qualifications, women, and minoritised communities. Many of our students were from communities that had long been excluded from the highly selective, British university system. We were perhaps not illustrious enough to join the list of STS centres with innovation in the title that Irwin mentions in his introductory essay ([2023](#)), but we did make it into the 'European Guide to Science, Technology, and Innovation Studies' produced by Paul Wouters, Jan Annerstedt and Loet Leydesdorff for the European Commission in [1999](#).

In 1988, the Department of Innovation Studies started offering a suite of interdisciplinary degree programmes, all starting with 'New Technology'. Over the years that the degrees were offered, the titles were supplemented with one of the following: Education, Social Policy, Media and Communication, Women, Manufacturing, European Studies, and/or Multimedia. As Alvaro de Miranda and Tony Hargreaves ([2020](#)) state,

[the] . . . aim was to widen access . . . to information and communication technology (ICT) skills at a time when such skills were becoming essential for employment. Until then, the development of these skills had been the preserve of highly technical computing degrees requiring A-levels [secondary school leaving qualification] in mathematics and science subjects. . . . The new technology degrees pioneered the concept of the development of user-centered technical skills in the context of an understanding of the relationship

between social and technical change ([de Miranda and Hargreaves 2020, 225](#); with parentheses added by author).

I was employed both to stimulate research and to offer core courses in the first and final years of the programme about the economics of innovation, and the history and future of (digital) technologies. Sadly, though unsurprisingly, the work of feminists on the gendered nature of innovation and technological change has been written out of the official histories of both UEL and SPRU.

The Department, and its first head, David Albury ([Albury and Schwartz 1982](#)), deliberately chose 'innovation' as part of the departmental name, precisely to challenge the dominant, Thatcherite interpretation that associated innovation with the activities of private enterprise, free from the constraints that might be imposed by union activity or government regulation. Our mission was to help students realise that innovation 'could be otherwise' so that they would be capable of shaping and intervening in the wide variety of jobs in which ICTs were becoming ever more prominent.

De Miranda and Hargreaves ([2020](#)) trace the emergence of the degrees and of the department back to the creation of the polytechnics in the early 1960s. They and their first colleagues all had backgrounds in the radical science movement, including those involved in protesting against the Vietnam war (and the role of the military-industrial complex therein), trade unionists concerned with working conditions, as well as those engaged with feminist, anti-racist, environmental, and/or social responsibility of science movements. Throughout the 1970s and much of the 1980s, staff were engaged to provide 'liberal studies' to science and engineering students, meaning that students needed to go beyond their own disciplines to develop an awareness of the consequences on the social and physical environments. This was a national requirement, but often received little attention in practice. At UEL (in its polytechnic days), it was rigorously pursued, and there was soon a Department of Applied Philosophy to deliver these courses. Including a member of that department in the development of new science (in the narrow, English sense of the word) courses and formally assessing all of the societal elements became requirements, after some struggle and persuasion.

Reflecting on these formative, professional experiences, I can now return to answering the two remaining questions posed by Irwin in his introductory essay ([2023](#)). First, is 'innovation' part of the problem or part of the solution for those wishing to engage with socio-technical change? Innovation as in the 'new new thing' ([Lewis 1999](#)) ideology of GAFAM (Google®, Apple®, Facebook®, Amazon®, Microsoft®) is most certainly part of the problem, including the rise of surveillance, the monetising of everyday life, and environmental destruction. 'Move fast and break things' (attributed to both Jeff Bezos of Amazon® and Peter Thiel of PayPal® and Palantir Technologies®) as a way to avoid regulation, and make technologies facts of life before they can be regulated is certainly a problem. But innovation can be used for good, and there are many possibilities for innovating socio-technical systems in order to improve people's quality of life. For those who recognise the entangled nature of social and technical change, innovation will continue to be part of the solution for a more equitable world.

Finally, what new resources can STS bring to the study of innovation? As Irwin already identifies, the concept itself (like all concepts) is not fixed. As Andrew Webster and I remarked ‘innovation “never speaks for itself”, but has to be spoken for. So whose voices are heard and why?’ ([2020, 17](#)). It remains important to pay attention to shifting definitions and to which voices are at the table and which are not. Other contributors are likely to follow Irwin’s lead and say more about what STS can bring to the study of innovation, including ethnographic methods and sensibility for the voices of those often left out of macro-level studies. However, to be fair, innovation studies has had a long history of examining techno-economic relations from a global perspective.

To conclude, I would like to turn the question around, and think about what we in STS can learn from innovation studies.<sup>1</sup> As I and others have argued elsewhere ([Wyatt, Milojević, Park, et al. 2017](#)), it is time for methodological innovation within STS. Bruno Latour already called for this in [1986](#), as the title of his book review suggested: ‘Will the last person to leave the social studies of science please turn on the tape recorder?’ Latour encourages us (as STS scholars and readers of *Engaging Science, Technology, and Society (ESTS)*) to take advantage of our freedom ‘to use any style, any data, any effect, any composition that we . . . deem adapted to the audience’ ([1986, 548](#)). Digital technologies open up all sorts of methodological and representational freedoms. Mattering Press is exemplary in exploring these freedoms (e.g., [Maguire, Watts and Winthereik 2021](#)). From innovation studies, we can also learn to be more precise about what we mean when we talk about innovation. I hope we can find ways to retain the STS commitment to understanding the complexity and ambiguity of innovation in multiple contexts and at the same time use the conceptual vocabulary of innovation studies to understand our empirical material and to communicate across disciplinary boundaries. I also hope that STS can find ways to address those matters of concern in innovation studies, including unemployment, monopoly power and uneven development. These concerns, raised by Schumpeter and still important within innovation studies, made a deep impression on my seventeen-year-old self. They remain crucial for understanding the place of sociotechnical change in society.

### Acknowledgements

I am grateful to Alan Irwin for the invitation to contribute to this special issue of *Engaging Science and Technology Studies*, and his encouragement and feedback on earlier versions. I am also grateful to the editors and anonymous reviewers for their generous comments. Preparing this provided me with an opportunity to reflect on how my thinking about innovation has developed over the years, and I have tried to avoid an overly

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<sup>1</sup> In addition to the work of Freeman, Schumpeter and others mentioned in the references, readers new to innovation studies are advised to browse the pages of the journal [Research Policy](#). Its stated aim is to ‘examine empirically and theoretically the interaction between innovation, technology or research, on the one hand, and economic, social, political and organizational processes, on the other’. Research Policy is widely regarded as the leading journal in innovation studies. Another good starting point is the ‘[Innovation and Technology](#)’ list of [Edward Elgar Publishing](#), which has a long tradition of publishing monographs and handbooks, including many about innovation in low-income countries.

teleological account. Most of all, I am grateful to the brilliant and generous colleagues with whom I was lucky to work with in the first two decades of my career, at the Science Policy Research Unit and the University of East London.

### Author Biography

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### Data Availability

Data published in this issue can be accessed in STS Infrastructures at: <https://n2t.net/ark:/81416/p4ds3n>.

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