Book review

Knowledge Machines: Digital Transformations of the Sciences and Humanities
Eric T. Meyer and Ralph Schroeder
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The internet and the web have not only brought huge changes in the way scholars consume knowledge, but also in the way knowledge is produced; every stage of knowledge production has been affected by the internet in some way, from the objects of study and the carrying out of literature reviews, via the methods and tools adopted, through to the analysis and publishing of results. The nature of this change is the focus of Meyer and Schroeder's *Knowledge Machines*.

Knowledge Machines explores the impact of new digital technologies on the practice and direction of research in ten chapters. The first three chapters provide the foundations for the work: following a general introduction to the topic, Chapter 2 provides a framework for conceptualizing e-research, which they define as "the use of digital tools and data for the distributed and collaborative production of knowledge" (Meyer and Schroeder, 2015, p. 4), and Chapter 3 considers the rise of e-research in recent years. Chapters 4 and 5 use six case studies to explore how various networks of computers and people are used in e-research and how data and tools are increasingly widely shared. Chapters 6 and 7 consider e-research from the perspective of the sciences, social science, and the humanities. Chapters 8 and 9 consider the impact of open science and the limits of e-research, and finally Chapter 10 draws some conclusions on the transformation of scholarship by e-research.

Meyer and Schroeder make a forceful argument for the need for interdisciplinary investigations into the changes caused by e-research; e-research is diverse and richly interconnected and understanding its impact is not the prerogative of any single discipline. There is great variety in e-research both within and between the different fields, and this is demonstrated in the diversity of the case studies included in the book, but there are also shared commonalities. Tools developed for one purpose in one discipline are shared and adapted for another, and challenges such as intellectual property rights and the need for the recognition of new forms of contribution, whether data creation or tool development, cut across the disciplines.

Understanding the impact of the internet as an infrastructure for knowledge production is essential not only for policy makers, but also researchers reflecting on their working practices as users shape and are shaped by new technologies, and as these "knowledge machines" increase in potential they will undoubtedly be of interest to the wider public too. Meyer and Schroeder's *Knowledge Machines* provides an excellent introduction to the changing nature of e-research and its impact on knowledge production, at a time when new technologies are not only changing the speed and scale of research but also the fundamental nature of research.

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