

He is self-critical and entertaining. From page one readers will tingle with excitement. Satirical maps by Mark Twain, Henry Holiday and a reference to the Kiev-born Polish science-fiction writer Stanislaw Lem will increase this sensation. If this is representative of the state of mapping – *not* cartography – then it is a vibrant, self-examining community of practitioners taking responsibility for the works they study and their future potentialities. With its numerous half-tone illustrations, this is a critical contribution to the mapping of transdisciplinary and transnational histories and philosophies of science. Though they have, perhaps, been reached in other traditions, it will transport historians and philosophers of science to new places.

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Hans Radder, *From Commodification to the Common Good: Reconstructing Science, Technology and Society*

Pittsburgh: University of Pittsburgh Press, 2019. Pp. 312. ISBN 978-0-8229-4579-6. \$50.00 (hardcover).

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At a time when endeavours in science and technology are primarily judged by their immediate economic use value, *From Commodification to the Common Good* offers a refreshing alternative that promotes research in the public interest. Through diligent attention to competing viewpoints, Hans Radder presents an in-depth philosophical argument for promoting scientific research in the ‘public interest’ to produce knowledge that is a ‘common good’. He juxtaposes this against the current state of affairs in which the products of scientific research are strongly commodified – most obviously and objectionably through product patenting. Each chapter involves a precise deconstruction of each noun in his title, plus the associated concepts of ‘knowledge’, ‘public’ and ‘democracy’, and their implications for his vision. This is not simply a diatribe against commercialization; Radder also explains *which* scientific knowledge can (and should) be a common good. Throughout, Radder is attentive to the real-world applicability of the principles discussed, setting out concrete strategies for increasing the public-interest aspect of scientific research and reducing its commodification. In doing so, his arguments are pertinent to questions of how we allocate funding, disseminate findings and promote specific areas of research.

Putting himself in conversation with major debates in the philosophy of science and technology, including the demarcation question and artefact agency, Radder offers a cross-disciplinary introduction to a range of theoretical perspectives. This is particularly true of Chapters 1 and 2, which consider how essentialists, social constructivists and empiricists have conceptualized the relationship between science, technology and society. Taking a synthetic-philosophy approach, Radder systematically evaluates key frameworks, like technoscience and technology-as-applied-science, and how they relate to each other. Radder describes these accessibly for a diverse audience of policy makers, scientists and social theorists. While providing necessary background, he advances his own position that

science and technology share patterns of similarity and dissimilarity which blur the boundary between those categories without erasing it.

Chapters 3 and 4 analyse the role of commodification in the relationship explored in the first two chapters. Radder presents an ethical–legal case against patenting the products of scientific research, explaining the practice’s incommensurability with the Mertonian values espoused by universities and other research institutions. Moving beyond analysis of the present, Chapters 5 and 6 set out an alternative to commodification. Here, Radder advocates for the promotion of science in the ‘public interest’ to produce knowledge that is a ‘common good’. The meaning of public interest and common good are thoroughly unpacked, and Radder is careful to explain that they are not absolute categories and necessarily involve normative judgements.

Applying the frameworks developed in the previous chapters, Chapter 7 evaluates whether some recent projects in science and technology can be deemed to be in the public interest. The whole book is interspersed with brief thought experiments and real-world examples, but this section represents the most in-depth empirical application of his criteria for what constitutes the public interest. Alongside a nuanced examination of open-access publishing, Radder defends a policy of promoting basic science without an immediate use case. Although most of the book takes natural sciences as the default lens of analysis, Chapter 7 forays into more specific commentary on the public interest of what he calls the ‘human sciences’. Encompassing the reflexive study of human societies past and present, this presents a convincing argument that humanities scholars can deploy in defence of their research.

Considering that the book is so focused on arguing against commodification and for public-interest science, its coverage is impressively wide-ranging. Throughout, Radder familiarizes the reader with debates in science and technology that have maintained academics’ interest over the past sixty or so years. In addition to obvious topics of the demarcation problem, technoscience and experimentation, he also integrates examinations of values, norms and democracy. Although definitively a work of philosophy, he draws on theoretical frameworks from studies on politics, economics, patent law and sociology. In that sense, the book makes for a valuable introduction to cross-disciplinary perspectives on science and technology.

Although this scope means that readers from any discipline will almost certainly learn something new, they may also find themselves bristling at occasional superficiality. Historians will likely be frustrated with the shallowness of any references to the past. Although Chapter 4 is dedicated to Mertonian values, these are evaluated ahistorically. Elsewhere, figures from Francis Bacon to twentieth-century environmental scientist Barry Commoner are used to represent different intellectual poisons on the nature of science that are likewise abstracted from their historical contexts.

Pre-twentieth-century science is only mentioned in passing and the increasing bureaucratization, hierarchicalization and commodification of higher education and scientific research from the 1980s are taken as self-evident. Institutional, economic and political contexts of the 1960s and 1970s receive more attention, although they mostly provide background for the academic literature Radder surveys. Greater attentiveness to historical specificity would likely have given some empirical weight to his predominantly theoretical case, particularly to his insistence that the judgement of any particular activity as more or less in the public interest is contingent on the broader sociocultural context. However, it is difficult to criticize this aspect too harshly. After all, it is, first and foremost, a philosophy book. Furthermore, in his concluding chapter, Radder acknowledges that his generalized approach could never match the detail found in more specialist elaborations.

Ultimately, the book succeeds in building a cogent case against the commodification of scientific research, and presents a blueprint for judging to what extent particular policies,

practices or projects are in the public interest. Beyond its philosophical relevance, then, the book offers policy makers and funding bodies a practical guide for prioritizing those projects which best serve the present and future interests of society. For researchers disillusioned by the influence of commercial interests over their work, *From Commodification to the Common Good* provides a concrete strategy for, and a stimulating vision of, an alternative future.

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Andrew Cunningham, 'I Follow Aristotle': How William Harvey Discovered the Circulation of the Blood

London: Routledge, 2022. Pp. xii + 180. ISBN 987-1-0321-6223-2. £130.00 (hardback).

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William Harvey is one of the most widely recognized figures in the history of science, with a 'discovery' neatly attached – the circulation of the blood. He has also been endowed with heroic status by his many admirers, endlessly commented on, praised and toasted at commemorative dinners. He has spawned so many publications that it is impossible to put an exact figure on them. Further, Harvey has been appropriated for 'science', although he practised as a physician; he has been deemed a forerunner of experimental physiology and taken to have made significant contributions to biology. Into this elaborate web of anachronisms, Andrew Cunningham has ventured, with a forceful argument about the ways in which Harvey followed Aristotle, practised as an anatomist and developed modes of thought that need to be taken seriously. In other words, historians need to heed what Harvey himself says.

Cunningham has been thinking and writing about Harvey for decades – items published between 1985 and 2012 are listed in the select bibliography. Although the volume is relatively short, with the main text occupying 166 pages, readers need to stay on their toes and take the dense arguments at a steady pace in order to appreciate the claims its author makes. Thus it helps that the work is expository, going through writings by Aristotle, Fabricius and Harvey in some detail, and some repetition ensures that major points hit home. One of Cunningham's most striking assertions is that there were not two Harveys, as the old view that many of us were brought up with would have it: one, especially praiseworthy, who wrote *De Motu* (1628) and the other, less laudable, who published *De Generatione* (1651). Rather there was a single Harvey who, as he emphasizes, followed Aristotle. This is an important claim that is well made, not least since the old view that Harvey lost the plot in old age, even somehow letting the side down in his work on reproduction, is unsatisfying.

For Cunningham, Harvey was the Padua-trained anatomist whose thinking was shaped by Aristotle's *De Anima* and by their shared interest in 'the animal', and whose discovery was unexpected, even unwelcome. The kernel of Aristotle's claim was that when studying animals, whether living or dead, we can discern the soul in action; that is, actualized