

## BOOK REVIEW/COMPTE RENDU

**Steve Matthewman**, *Technology and Social Theory*. London: Palgrave Macmillan, 2011, 206 pp. \$US 35.00 paper (9780230577572).

The central and animating questions of Steve Matthewman's book *Technology and Social Theory* concern the distinction between technological determinism and socially grounded explanation. On the one hand it is easy to point to analyses that highlight the role of technology in explaining social phenomena. Sometimes this is called technological determinism. On the other hand, it is commonplace to assert that technologies themselves are products of social relations. While this general distinction sounds familiar, the above formulation allows the actual objects to be explained to shift from social phenomena to technology, making it difficult to appreciate these statements as counterposed explanations.

Though the book's central distinction is never clearly expressed, social explanations of technologies run through many of the interesting discussions in the book. This is evident in the conventional sociological sense through the first four chapters highlighting the work of Karl Marx, Walter Benjamin, Michel Foucault, and Langdon Winner, respectively. Apart from a strong emphasis on the contingency of technological outcomes, this is also true in the last four chapters, which use the language of social constructivism to engage with science and technology studies, actor-network theory, and posthumanism. The book treads a line between the more sociological labour process theory and the more interdisciplinary science and technology studies; while its coverage is wide, no individual subject receives in-depth exposition, making it most appropriate as a mid-level undergraduate text.

In the first half of the book — particularly in the chapters on Marx and Winner — the way social explanation of technology tends to play out is that innovation is interpreted in instrumental fashion as a political weapon. Matthewman's reading of Marxian analyses envisions certain individuals and groups with a good deal of power and resources to direct the development of technologies in their own interests. Technologies that benefit particular groups do not emerge as the unintended political consequences of standard social practices in a capitalist economy. From numerically controlled machine tools to public construction projects technologies are developed and wielded on behalf of the

contingent influence of certain historical power blocs. While social- and human-centred analyses have obvious appeal to sociology audiences, Matthewman tends to understate the *indirect* channels through which social mechanisms operate. More specifically, as I note below, the social elements underlying arguments written off as technological determinism are insufficiently appreciated.

To examine the central issues of technological determinism is to ask not only whether we can explain important aspects of social structure and social change by the process of technological change, but also whether we can explain the process of technological change itself. The latter question, differently put, asks whether we can outline a rough succession of technological development through which societies tend to pass. As an example of the paradigm case of vulgar technological determinism Matthewman cites Marx's oft-quoted assertion that "the handmill gives you society with the feudal lord; the steam-mill, society with the industrial capitalist" (p. 38). While Matthewman grants that Marx's thinking on technology is not well summarized by this passage, because of the apparent deficiencies of technological determinism he disregards the broad contention that, 1) it is not by accident that the hand-mill emerged before the steam-mill; 2) these technologies are intimately linked to the socioeconomic order.

There are, however, some reasons the first part of this claim ought not be dismissed out of hand. To support this kind of thinking Robert K. Merton<sup>1</sup> (1973) pointed out that simultaneous technical discovery by unconnected individuals is unusually common. This implies that technical discovery is not pure contingency as Matthewman repeatedly asserts. Instead there are specific material conditions — especially the frontier of previous knowledge — that prepare the ground for incremental increases to the stock of technical and scientific capacity. Thus, it is not coincidence that explains why we do not find experiments in electricity in 1500 or attempts to extract power from the atom in 1700.

Regarding the second part of the above premise, it is hard to see why we must reject the notion that developing technological forces impose *constraints* on particular historical possibilities. Yet, Matthewman here relies on voluntarist arguments. In fact, he presents a voluntarist reading of Marx's famous statement of the structure-agency relationship; he paraphrases (p. 39) and ignores the crucial second clause in the argument that "men make their own history ... but under circumstances existing already." Among other things, the second clause is a presumption that technologies shape some general parameters on social configurations.

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1. Robert K. Merton. 1973. Singletons and multiples in science. Pp. 343–370 in Norman W. Storer, ed., *The Sociology of Science*. Chicago: University of Chicago Press.

This can hold true especially with respect to the make up and organization of labour. Where some technologies require a skilled or semi-skilled labour force others require an unskilled one. Where some technologies allow for a high degree of autonomy and low levels of supervision others need to marshal vast resources towards planning and supervision. Where some technologies produce little surplus and require most people to produce food, others produce amounts of surplus that allow for wide social and class differentiation.

Does this line of reasoning really remove the creative agency of people from the process of history making, as Matthewman contends? In fact, in most versions of the analysis sketched above, it is precisely the role of humans imbued with some degree of rationality and intelligence, trying to improve their situation, and embedded in communities unwilling to relinquish achieved gains, which explains, probabilistically, the progressive development of technology across history. That is, in these arguments historical and social change happens because of — rather than in spite of — human desire and action. Much of Matthewman's discussion of so-called technological determinism misses this underlying philosophical anthropology. Understood in this light, what is called technological determinism is nothing more than placing people's concrete and practical problem-solving capacity at the centre of history; this generic formulation implies that the problems people confront loom large, but do not have exclusive sway in defining outcomes that develop.

Throughout Matthewman's book, the treatment of the distinction between technological determinism and socially grounded explanation is largely unsatisfactory. He attempts to resolve the apparent contradiction by introducing a confusion called "posthumanism." We are told that posthumanists "transgress the technology/society binary" by stressing the interaction that "co-produces" these ingredients (p. 102). These conclusions, unfortunately, are only reached by flattening the substance of the technological and social explanations highlighted in the initial distinction. To many empirically minded sociologists these concluding discussions will run far afield, largely representing social theory's inability to confront relevant and practical problems posed by the role of technology in modern society.

If social theory is to be of any use it has to aim to explain real developments in society. Classical social theory once played this role; at its best it helped to *de*-mystify the reality people confronted. By contrast, a good amount of the social theory discussed in *Technology and Social Theory* shields itself from confrontation with actual developments underlying the contemporary social role of technology in general and technological change in particular. For example, the *a priori* insistence

on contingency makes analysis of the steady replacement of workers by machines impossible. What explains automation? One account emphasizes the particular set of social rules and property rights which guides firms along a path of ever more capital-intensive production methods. Unfortunately, consideration of this argument is precluded in advance because technology is characterized as a "fluid and open-ended text" (p. 174). Yet, this portrayal appears to be more of an aesthetic preference than a judgment grounded in evidence and reflection. Further, the case is not persuasively made that understanding technology requires rethinking sociology's underlying methodological assumptions. To the contrary, it is hard to see the explanatory payoff to the book's myriad reinterpretations of the concept of agency. If social theory is to make a contribution to the future of sociology it has to take its cues from the development of concrete phenomena and this-worldly problems; otherwise it is bound to remain a staunch critic of much empirical social science without simultaneously assuming the role of guide to future analysis.

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