Technology, Modernity, and Democracy: Essays by Andrew Feenberg, edited by Eduardo Beira and Andrew Feenberg (2018) 173pp, \$US120 (hardback), \$US40 (paperback) Rowman & Littlefield, Lanham MD, ISBN 978-1-78660-721-8

One of the challenges confronting philosophers of technology is conceptualizing the relationship between humans and technology without drawing a neat distinction between the two. Many philosophers do this by positing a variation of the argument that technological artifacts consist of two inseparable dimensions, a functional one and a hermeneutic one, both of which are necessary for a technology to 'work'. Admittedly, recognizing this two-dimensional ontology is easy; taking the next step and theorizing this relationship is more difficult because it requires both a sensitivity for empirical research into the design and use of technologies and a conceptual vocabulary that accounts for the ways in which technologies are meaningful.

Technology, Modernity, and Democracy is the most recent collection of essays from the philosopher of technology Andrew Feenberg in which he articulates the relationship between function and meaning through empirical case studies and a rigorous philosophical framework that draws out the inseparability of these two dimensions. One of the more poignant reminders that Feenberg uses to demonstrate this inseparability comes through an autobiographical note in which he recounts growing up in a post-war America in which technical cleverness, at least for young boys, was lauded and encouraged. Being clever, though, is not the same as being wise: 'Truly, cleverness is the greatest human power, but not the greatest achievement' (p.14). From Los Alamos to the Volkswagen emissions scandal, it is not difficult to disagree with this assessment. Yet, despite the numerous examples of technically clever disasters that have come to characterize modernity, Feenberg's philosophy is neither dystopian nor escapist. The problem is not technology *per se*, but rather an attitude in which technology is reduced to its functions and thus considered both value-neutral and socially autonomous. Demonstrating the fallacy of this attitude and arguing for a more complete understanding of technology draws out the contingency of technical design and the potential for technology to realize a plurality of values.

Edited by Eduardo Beira, this collection is made up of essays that appeared between 2007 and 2018, a period in which Feenberg also published *Between Reason and Experience* (2010), *The Philosophy of Praxis: Marx, Lukacs and the Frankfurt School* (2014) and *Technosystem: The Social Life of Reason* (2017). In these books, he has situated his philosophy of technology amongst a variety of ideas and intellectual traditions, including the concept of world (or lifeworld) as developed by Heidegger and Husserl; Lukács' theory of reification as a more complete realization of Marx's theory of commodity fetishism; an idea of rationality rooted in the tradition that begins with Max Weber and extends through Horkheimer, Marcuse, and Habermas; and the recognition of sociotechnical contingency that corresponds with the empirical observations found within science and technology studies (STS). All of this culminates in what Feenberg calls a 'radical social theory of modernity around the theme of technology' (p.31), which, given the diminishing place of technology within critical social theory, is a significant ambition. Indeed, it is not surprising to find that a recent book on the intellectual history of contemporary critical theory makes only passing reference to technology as a holdover from Horkheimer and Adorno's remarks on the culture industry (Keucheyan, 2014).

Technology, Modernity, and Democracy serves as an excellent introduction to this revival of a radical social theory of modernity. The essays in this collection are divided into three sections:

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'The philosophy of technology', 'Technical citizenship' and 'Heidegger and Marcuse'. The first of these can be read as an overview of Feenberg's philosophical project, which has remained consistent since the early 1990s: developing a conceptual and methodological framework for the democratization of technology while also persuasively arguing for the necessity of this project. Unlike philosophers of technology who draw upon ethics (Vallor, 2016) or phenomenology (Ihde, 1990) to make sense of technology, Feenberg's is a political philosophy of technology. The starting point for this political philosophy of technology is a critique of technology, which, following Feenberg, is ideological in the sense that it conditions a particular way to think about technology: 'technologies are perceived as purely instrumental and separate from their past, the environment in which they function, and their operator' (p.45). Following this, technocracy also bounds the scope of who is authorized to exercise agency over the trajectory of technological design:

the design of artifacts and systems . . . is a matter of fact rather than opinion. Politics has no place here. From the technocratic standpoint, disagreement with the facts asserted by the technical experts is simply irrational. (p.82)

The challenge to technocracy occurs through democratic interventions that reveal the limitations of this ideology. Democratic interventions are not a matter of holding 'an election between competing devices or designs' (p.63), but, as demonstrated through different case studies, democratic interventions destabilize technocratic relations that restrict control over the design and function of technology to a small cadre of experts while effectively ignoring the experiences of those whose lives are mediated by technology.

The technocratic argument rests on a hidden assumption, namely, that in their domain technical experts know *everything* relevant and rational that can be known. Thus, the real question is, do the users and victims of technology know anything worth knowing that technical experts do not already know? This formulation reveals the problem with technocracy. (Emphasis in original; pp.82–3)

The book's second section, 'Technical citizenship', extends this discussion by explaining in more detail how Feenberg conceptualizes democracy and agency in the technical sphere. His is an idea of democracy that draws from the experiences that characterize the technical engagements of everyday people who, through engaged and contextualized use, are able to imagine and realize socio-technical potentials unimagined by engineers, designers and policymakers. Think, for example, of the moment when turntables, mixers and LPs were turned into musical instruments by marginalized social groups who were able to transform technology to realize potentials that responded to their own situations, but were unimagined by the engineers who designed these technologies.

Feenberg articulates these democratic interventions through a technical politics that he terms 'micro-politics', small-scale interventions realized by citizens that draw out potentials that respond to their own experiences and expectations of technology. Democratization, in this regard, is not a design strategy. Rather, democracy in the technical sphere is an attempt to 'incorporate underserved human needs into the technical codes that preside over design' (p.17). This can be translated into a modest political philosophy of technology that is wary of both political and technological hubris:

the new politics is neither revolutionary nor reformist . . . we do not know where these changes lead, but we cannot doubt that they represent a universal advance . . . critical constructivism gives an account of the process of transcendence without positing a final endpoint the nature of which we do not know. (Feenberg, 2017, p.119)

This articulation of democracy and technical agency provides a counter to those philosophers who argue that democratization occurs through studying the work of engineers and designers and providing policymakers with ethically grounded suggestions for subtle 'nudges' that direct users to socially desirable ends (Verbeek, 2006). The problem with this approach, following Feenberg, is

that it reifies existing socio-economic relations and omits the experiences and ideas of countless lay users in favour of a paternalistic expertise that takes these contexts as given.

The final section of this book, 'Heidegger and Marcuse', contains two essays that explain how the latter philosopher was able to radicalize the ideas of the former (with help from Lukács). As Feenberg explains it, Heidegger's concepts of *dasein*, world and *authenticity* were translated by Marcuse through the lens of Marxism, interjecting a needed dose of political economy to explain Heidegger's somewhat obscure concepts. In doing so, Marcuse was able to overcome Heidegger's dystopian essentialism regarding technology by arguing that capitalism is a *world* that, although historically contingent, endures through a value-neutral functionalism that is perfectly suited to capitalism. Modern technology may be characterized through an enframing that is environmentally and socially disastrous, but this is not the only possible technology. Just as Heidegger's insights followed from Husserl's ideas, reading Feenberg it is clear that Marcuse is able to push Heidegger's philosophy forward by accounting for capitalism,

Marcuse diverges from Heidegger in arguing that the congruence of science, technology, and society is ultimately rooted in the social requirements of capitalism and the world that it projects. As such, science and technology cannot transcend that world. Rather, they are destined to reproduce it by their very structure. They are thus inherently conservative, not because they are ideological in the usual sense of the term . . . rather, they are conservative because they are intrinsically adjusted to serving a social order that views being as the stuff as domination. (p.123)

Part of what makes Feenberg's work philosophically significant is his style as a writer. He is able to craft sentences and paragraphs to reveal a lifetime's worth of philosophical insights presented in a way that is accessible but not patronizing. Amongst the essays found in this collection, there are a few that stand out. 'Ten paradoxes of technology' is an excellent introduction to the discipline of the philosophy of technology that would benefit undergraduate students, 'Agency and citizenship in a technological society' serves as a concise summary of Feenberg's argument for the democratization of technology and 'The politics of meaning: modernity, technology, and rationality' provides a thorough intellectual history of the critique of instrumental and technological rationality. More intriguing than these individual essays, though, are the hints towards a social theory of rationality that accounts for the ways in which technologies, organizations, forms of administration and markets share the same form of rationality. This is the next step in developing a radical social theory of modernity around the theme of technology, and one that Feenberg has drawn out in more detail in recent work, especially Technosystem: The Social Life of Reason (2017). Turning away from specific technical artifacts and towards technological rationality as a cultural form can be a starting point from which to understand better how capitalism has achieved such formidable stability in the twenty-first century – an achievement that has proven to be remarkably clever, if not very wise.

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