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Taina Bucher, **If . . . Then: Algorithmic Power and Politics**, Oxford, UK: Oxford University Press, 2018, 216 pp., $27.95 (paperback).

Reviewed by
Hao Cao
The University of Texas at Austin


As contemporary life is increasingly mediated by algorithms, Taina Bucher's book ***If . . . Then: Algorithmic Power and Politics*** adds to the booming scholarship in critical algorithm studies (see also Beer, 2017; Gillespie, 2014). Instead of focusing on any specific algorithms or their technical designs, this book aims to understand the "politics and power" of algorithms in people's mundane and professional lives. Combining science and technology studies (STS) with Foucault's notion of power, this book highlights three dimensions when people meet algorithms (i.e., the diagrammatics of algorithmic power in enabling invisibility/visibility, the algorithmic imaginaries in eliciting affects and actions, and algorithmically driven journalism). Bucher coheres multiple themes through concepts such as variable ontology and eventfulness.

Chapter 1 seeks to delineate the politics and power of algorithms. Broadly speaking, algorithmic politics and power refer to algorithms' role in configuring and reproducing the world in certain ways. Since this conception might risk a determinist understanding of algorithms, the author proposes to look through the lens of "programmed sociality" and to examine how algorithms and other human or nonhuman agents are "articulated in and through computational means of assembling and organizing, which always already embody certain norms and values about the social world" (p. 4). This view emulates actor network theory's (ANT) "tracing associations" (Latour, 2005) and implies a shift in view from seeing algorithms as static objects to focusing on *when* algorithms matter, in what ways, for whom, and for what purposes under certain circumstances.

Chapter 2 further elaborates the new conceptualization by explicating the manifoldness of algorithms. That is, algorithms "exist and operate" at multiple levels "as part of a much wider network of relations and practices" (p. 20). Technologically, for any algorithms (machine-learning algorithms, in particular) to operate, they have to work in tandem with user inputs as well as other software and hardware. Sociologically, algorithms are entangled with other material and discursive components to form "sociotechnical assemblage" (p. 30). The interactions among these constituents suggest that both the component parts and their configurations are constantly in the process of *becoming* instead of assuming any stable *being*. Assuming the multiple and processual constitution of algorithmic politics, in this way, aligns with Foucault's concept of power. Algorithmic power, therefore, indicates that algorithms not only possess power to govern social lives but also to function as "technologies of government" to "direct the flow of information and practices of users" (pp. 37–38). Adopting the aforementioned notions of algorithmic politics and power, the empirical chapters examine the ways and mechanisms of how algorithms condition the possibilities of reality.

Chapter 3 serves as a methodological note to demonstrate how algorithms can be studied. A widely accepted challenge to understand algorithmically mediated reality is the black box assumption. In this view, algorithms are deemed unknowable because their functioning is hidden from and nontransparent to the public, due to patent law protection or technological complexity. Considering the multiple and heterogeneous nature of algorithms, Bucher proposes an *eventful* approach to research algorithmic life against calls to open up digital platforms. Algorithms, hence, can be known only in the processes of becoming, along with other human or nonhuman agents. This also requires an analytical turn to see agency as distributed in various agents' constituting processes as well as in the ways in which algorithms and other agents come together. To inform empirical studies, Bucher offers three concrete methodological guides: reverse engineering through technography, phenomenological inquiry in the manner of scenography, and institutional analysis in the field of journalism.

Chapter 4 broaches the empirical investigation by using Facebook's news feed as a case study to unpack the diagrammatic power of algorithms. While the eventful approach emphasizes the coconstitution of multiple agents, this chapter focuses on the architectural designs of the news feed in order to correct the excesses in treating technologies as outcomes of culture in existing scholarship. This occasions a diagram of power to map "how and when power operates and functions in specific settings and through specific means" (p. 73). "Reverse engineering" her own feeds, Bucher found that Facebook algorithms did not distribute visibility equally to all users; rather, updates with the potential to elicit user engagement were rendered more visible. Building on and inversing Foucault's concept of panoticism, Bucher asserts that the news feed embodied the "threat of invisibility" in disciplining the users in order to bring forth "participatory subjectivity." This was done through three mechanisms: punishing nonparticipation with invisibility, normalizing participation, and constantly measuring visibility through popularity. Via these concerted practices, the chapter shows how "politics and power operate in the technical infrastructure of" (p. 91) Facebook and similar platforms.

Shifting from the techno-material side to the experiential-affective realm, chapter 5 uses personal algorithm stories to understand how users make sense of and mold algorithms. To render intelligible the often hidden and taken-for-granted experiences with algorithms, Bucher takes as a point of departure those exceptional moments when people's expectations of algorithms were at odds with algorithms' actual operations. Indeed, confronted with major platforms' (such as Twitter and Facebook) conflicting objectives in promoting popularity and personalization simultaneously, users variably felt controlled or enabled. People thereby either played with or resisted against what they thought algorithms wanted them to do. The variable perceptions and responses, hence, indicate how people's algorithmic imaginary, "ways of thinking about what algorithms are, what they should be, how they function" (p. 113), animated new affects and actions, which in turn transformed algorithms per se. In this way, Bucher rehashes the idea that users and algorithms are coconstructed from the experiential lens; their encounters, thus, "reconfigure the algorithmic spaces that they themselves inhabit" (p. 95).

Whereas the former two empirical chapters examine the more diffuse spheres of algorithmic life, chapter 6 delves into an organized institutional field, journalism. Taking the Scandinavian newsroom as an example, Bucher shows how algorithms and journalism met in the emerging field of computational journalism. The introduction of algorithms witnessed a change from skepticism to normalization of the

computational tools in news production and audience engagement. With the assistance of Chartbeat and similar algorithms, not only had newsroom workflows improved but novel news genres and practices—such as structured journalism—also were instituted. In other instances, however, algorithms were deemed problematic, when excessive use of algorithms jeopardized existing professional ethics and democratic values. More importantly, these doubts of algorithmically driven journalism led to the reevaluation of some taken-for-granted journalistic norms. For example, with deepening involvement of the computational in news production, journalistic instincts now also had to count in "how the machine works" (p. 145), in addition to their "gut feelings." All in all, the variable institution of computational journalism demonstrates once again that algorithms per se are neither good nor bad; rather, "how and when it [algorithm] matters may matter even more" (p. 148).

Overall, the book is indebted to ANT and post-ANT. Many of Bucher's arguments—the variable ontology and the opposition to the black box assumption—ring a bell to readers familiar with Latour (2005), Mol (2002), and others. The methodological part and its implementation in the empirical chapters are the most valuable contributions of the book. This is shown in the relational view in studying the constituting processes of algorithms and other entities and situations as well as in the emphasis on distributed agency. The methodological choice avoids reducing complex social processes to the causal relations between technology and culture. The empirical chapters also tackle some pressing contemporary issues against enduring social concerns, such as in/visibility and affects.

Notwithstanding its tremendous merits, the book's conceptual framework can be sharpened and rendered more consistent. The author proposes many concepts that can be more elaborated on in the conceptualization part, which gets lost in the empirical chapters. For instance, the book starts with programmed sociality, yet the empirical chapters seldom discuss its relevance. It is unclear how the in/visibility of the architectural designs or the affects elicited by algorithms are related to this sociality. While the conclusion briefly comes back to this concept, it does not establish a programmatic framework to bring together the insights. That is, how are technicity, orientations, and boundary-making practices related to programmed sociality? Similarly, while the book's methodology opens new avenues to research the increasingly enclosed algorithms, some core concepts, such as eventfulness, can be situated against existing studies. Discussion of eventfulness should explicitly address its differences from prior uses, such as by Sewell (2005; see also Cao, 2017).

These gaps are not intended to dismiss this book's great value but to prompt researchers to expand along the directions pointed out in the book and further studies. Future research, for example, can explore cases and instances beyond Western settings and illuminate whether and how the insights in this book may or may not apply in other circumstances. This type of attempt accords exactly with the variable ontology advocated here. Readers interested in critical algorithms studies, science and technology studies, digital humanities, and information and communications technologies broadly will find the book helpful in understanding contemporary algorithmic life.

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