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"Flawless" data: How Big Tech is penetrating modern agriculture

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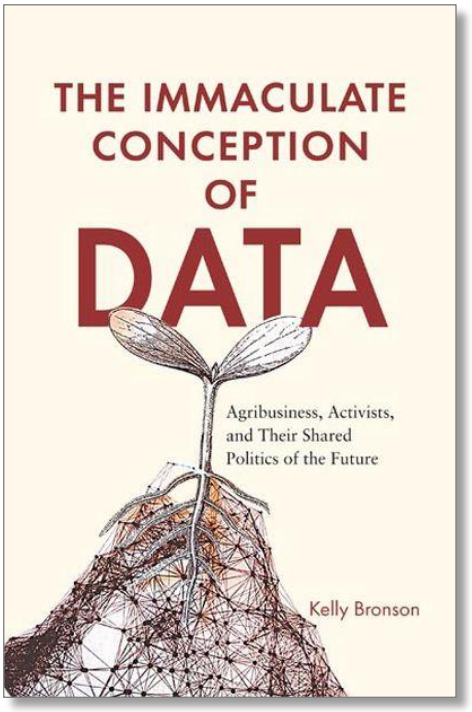

Review of *The Immaculate Conception of Data: Agribusiness, Activists, and Their Shared Politics of the Future,* by Kelly Bronson. (2022). Published by McGill-Queen's University Press. Available as hardcover, paperback, and eBook; 224 pages. Publisher's website: https://www.mqup.ca/immaculate-conception-of-data--the-products-9780228011224.php

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In *The Immaculate Conception of Data*, Kelly Bronson plunges into an increasingly intricate web of precision farming, agribusiness, computerized models, data accumulation, and the current (d)evolution of modern food production. The ongoing attempt to marry traditional crop cultivation with computer science and artificial intelligence (AI) is a perplexing fusion of two very different worlds, which Bronson does an excellent job of critically analyzing.

Tracing the power relations among the world's largest Big Tech corporations, some of which seem to even be on the threshold of forming oligopolies (Howard, 2016), Bronson makes the case that the seemingly insatiable optimism around data and digitalization to a large extent stems from ideologically driven narratives, social imaginaries, and techno-progressivist, if not purely transhumanist, discourses. In nothing short of a rigorous critique, Bronson teases out the roots of the data hype and scrutinizes the rhetoric

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which companies employ to buttress a novel idea of how food should be grown and produced—namely, with cutting-edge robotics, drones, sensor technologies, and data analytics.

Bronson explores crucial questions that require answers, questions such as: Why are companies like Google and Microsoft increasingly becoming involved in the food sector (Chapter 1)? To what extent should the current hyper-digitalization of farming be viewed as an agricultural revolution or merely an extension and acceleration of capitalist business-as-usual (Chapter 2)? Are Big Tech and precision agriculture compatible with alternative, small-scale farming methods such as agroecology (Chapter 3)? Who benefits from data accumulation, and who is left out? And do farmers themselves have access to the data they sell back to the companies (Chapter 5)?

Within a theoretical framework that Bronson refers to as the "immaculate conception of data," the reader is invited on a journey filled with personal acquaintances with farmers, interviews with stakeholders, and investigative discussions drawn from up-to-date research. The reader gets to climb into colossal tractors on sun-bathed corn fields or attend AI conferences with near-religious atmospheres (p. 60).

A recurrent theme throughout the book is the examination of machine fetishism and the way data is increasingly being perceived as something flawless, perfect, and benign, that is, inscribed with an *immaculate* quality (p. 83). Rather than simply connecting people around the world, the "fluffiness" of the internet cloud and the global harnessing of raw data are teeming with closed systems, behind-the-door exchanges, and huge profits (Zuboff, 2019). While the surge of digitalization and data holds promises for many start-ups and industrial farmers, Bronson seeks to shift the gaze to less traversed topics, such as the consequences of the data-hype in terms of environmental injustice, biodiversity loss, and greenhouse emissions (p. 135). With ever more orbiting satellites, tractors with built-in sensors, and dairy barns tended by robots, Bronson seeks to answer: At what price do we allow fields, soils, and domesticated animals to be adopted by a digital empire, or "a powerful sociotechnical imaginary" (p. 82)?

Yet, what makes the book even more compelling is the invitation to an alternative and more critical view of the bedrocks of late capitalist society: digitalization, data, and AI. While the highly alluring neoproductivist narrative contends that digitalizing the agricultural sector is pivotal for establishing food security and feeding a growing world population (p. 147), the alternative viewpoint highlights rural depopulation, exacerbated inequalities, and a perpetuated tech-dependency for farmers, leading to the so-called "technology treadmill" (p. 50). Through interviews with prominent stakeholders, machine-endorsing large-scale farmers, and decentralized bottom-up activists (p. 64), the author offers a range of kaleidoscopes through which to observe the food industry and the emerging techno-solutionist discourse.

Most of the book is situated within a Western context, however, and it would be enhanced by including more voices from Indigenous communities and smallholder farmers from the Global South. Moreover, the "immaculate conception of data" framework would be strengthened if combined with an analysis of the embodied energy of precision farming machinery and similar technologies, for instance, by drawing the connections between the abstract concept of "data" or "AI" and the inexorable concrete inputs of fossil fuels, rare-earth minerals, and cheap labor which constitute their physical backbone.

Materialism aside, one of the key messages conveyed by the book is that rather than a natural and linear blossoming, the recent burst of digital agriculture was more of a deliberate ignition by powerful actors, in which the flawless and salient construction of a utopian digital paradise has been—and still is—ingrained in much of the academic research, reproduced in social media outlets, and financially funded and discursively reinforced by Big Tech conglomerates (p. 14). Yet, while many peasant communities worldwide vehemently oppose the development of digital agriculture (ETC Group, 2022), others are trying to snatch and remold the data-harnessing technologies and inoculate them with concepts of decentralization and collectivism (p. 22). These political oppositions add to the unabated discussion about

where the limits to technological complexity and development should be set, not least within agriculture (p. 65).

For anyone interested in gaining a critical perspective on the accelerated digitalization of the planet, as well as a better understanding of why farming is increasingly spoken of with a language and jargon that previously belonged to computer scientists and programmers, *The Immaculate Conception of Data* is an exceptional starting point.

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