© 2023, *Global Media Journal -- Canadian Edition* Volume 15, Issue 1, pp. 69-71

ISSN: 1918-5901 (English) -- ISSN: 1918-591X (Français)

The Immaculate Conception of Data
By Kelly Bronson, Kelly

2022. Kingston: McGill Queen University Press, 2022, 224 pp.
ISBN 9780228011224

A Book Review by

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Kelly Bronson's (2022) *The Immaculate Conception of Data* exposes the often forgotten and hidden world of agribusiness and Big Data, revealing and constructing an analytical framework that she calls "The Immaculate Conception of Data" (ICD) that is shared by both corporations and large-scale farmers, and the activists who oppose them. The framework relies heavily on long-standing assumptions of neutrality and objectivity of science and technology, including new digital "smart" farming technologies. This book, a turn towards Big Data and building on Bronson's previous work, is a unique interdisciplinary text that draws and advances critical data studies, science and technology studies (STS) and food studies, offering different insights and messages to different intended audiences. Bronson's main thesis is that both activists and corporations, who often have opposite views on the future of farming, use ICD because it has social power and leverage. Bronson's ultimate goal is to highlight how both sides of this ongoing struggle utilize the same framework to disguise the human-made realities of Big Data.

Bronson's book is grounded in a "thick empirical bedrock" (Bronson 20), composed of interviews, and observations from conversations, conventions, and conferences on agricultural Big Data. Bronson utilizes this bedrock primarily in Chapters 2 and 3, where she lays out the two opposing sides in the conflict of the future of farming. Chapter 2 deals with what Bronson calls "productivist" farms, a vision of farming that positions the centrality of yield in food production in maintaining the political and social order of the post World War II society (Bronson 46). Productivism sees farms as efficient and productive businesses, constantly expanding. Put simply, productivism argues that big, economically viable, "rationally" run farms are good, and prioritizes economic scale over "irrational biological and social considerations" (46).

From this perspective, Bronson shows how Big Data and "smart" tractors are utilized to, for instance, minimize the necessary input of fertilizers, or utilize technology to automatically till and plant fields, with minimal manual oversight. Through an analysis of marketing language and conversations with multiple farmers, Bronson effectively demonstrates how farmers view these new technologies as saving them money, all while being extremely expensive, resulting in farmers taking on more debt out of fear they will be "left behind" compared to their competing neighbours. Companies such as Monsanto/Bayer and John Deere are at the forefront of this, and Bronson demonstrates how these companies have utilized ICD and promising language about the future, to avoid much of the negative publicity that they have been subject to in the past, effectively "hiding" from criticism behind shiny visions of a data-driven future.

In Chapter 3, Bronson contrasts the corporate and productivist vision of an ICD-backed future of agribusiness with activist farmers who have "hacked" and developed many of their own systems. Bronson focusses on the development of farmOS, an open-source data repository hosted on GitHub. Through a detailed technical analysis, Bronson lays out not just how farmOS operates, but also the politics and ideologies behind its development, namely a belief among activists in the power of open, accessible data for smaller, high-end, often organic farmers, as opposed to productivist farms. Despite the complex technology that is thoroughly explained, Bronson takes the time to spell out how this technology works. Using analogies that are familiar to readers without a technical background, Bronson effectively weaves the technical operations and political motivations into a digestible and understandable chapter.

Chapter 4 is where Bronson makes that bold theoretical move to argue that both corporations and activists share and use the same framework, what she calls the "Immaculate Conception of Data" (ICD). For Bronson, ICD is both useful and hazardous; the view of big data as "raw" and truth-telling about our world. It allows actors to position a data-filled world as inevitable. Bronson argues that this framing as data as "raw" or "natural" allows companies and activists to position themselves as the ones best equipped to "harvest" this new "resource", where Bronson highlights this parallel with colonialist modes of extraction. Bronson views ICD as a meeting point between critical data studies and STS. While it currently hides the messy and human-driven origins of data, through isolating and naming this framework, Bronson calls attention to this "immaculate conception" and challenges scholars to question this assumption.

The final chapter is where Bronson begins to plot out an alternative. However, it is also in this chapter that the book falls a little short in achieving that goal. Near the end, Bronson aligns herself with the activists and critical data scientists, despite admitting that activists and even some critical data scholars, also rely on ICD as an analytical framework. While the political stakes for food studies scholars and activists are made clear, the stakes for data scientists and STS scholars are arguably less so, assuming they have no interest or stake in the industrial food system. Bronson ends her book by pointing readers towards feminist data studies as an alternative, arguing that it "teaches us to value and build rather than attempt to hide human-machine collaborations into data science" (151-2). While promising and intriguing, feminist data studies is not presented as an alternative throughout the text. In short, readers are not presented with an alternative to ICD until the very end, which, while highlighting the hegemonic dominance of the framework for actors on both sides of the debate, does ultimately hide what may in fact be viable alternatives.

This book is, ultimately, a starting point for a broader conversation. It is perhaps unfair and unrealistic to expect Bronson to put forth a strong alternative, yet readers may feel unsatisfied at the end. *The Immaculate Conception of Data* is strongest, in my opinion, in chapters 3 and 4, where Bronson effectively demonstrates how regardless of politics, corporations and activists both rely on a problematic framework which furthers a narrative that data are neutral and objective. Despite positioning herself as a critical data scientist more aligned with activists than corporations such as Monsanto, Bronson does not excuse any of these groups. In this sense, *The Immaculate Conception of Data* is a must-read for any scholar interested in the future of food systems and food politics, and a reminder of the often-complex biases and normative claims that are also worthy of inquiry.

About the Reviewer

Anson Hunt is a PhD student in the Communication and Media Studies Department at Carleton University. His research focuses on communication and media studies approaches to fine-dining restaurants, specifically the ways in which sustainable restaurants in Ottawa negotiate the food politics of "sustainable food". He is currently interested in both the impacts of infrastructures on restaurants and the impact of culinary guides like the Michelin Guide.

Citing this book review:

Hunt, Anson (2023). [Review of the book *The Immaculate Conception of Data*]. *Global Media Journal -- Canadian Edition*, *14*(2), 69-.71.