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Whether its data-driven policing, trending-topic algorithms, security breaches, or American politics, the concept of *big data* continues to dominate policy discussions, news headlines, and industry trend reports. Metcalf, Keller, and Boyd (2017) explained, "The explosion of data collection, sharing, and analytics known as "big data" is a rapidly sprawling phenomenon that promises to have tremendous impacts on economics, policing, security, science, education, policy, governance, health care, public health, and much more" (p. 3). This phenomenon presents ethical challenges related to privacy, confidentiality, transparency, and identity. Richards and King (2014a), admittedly, are obsessed with questions such as, "Who owns all that data that you're analyzing? Are there limits to what kinds of inferences you can make, or what decisions can be made about people based on those inferences?" (para. 1). They wrote, "Law will be an important part of Big Data Ethics, but so too must the establishment of ethical principles and best practices that guide government, corporations, and users. We must all be part of the conversation, and part of the solution" (p. 396). In their *Wake Forest Law Review* article, Richards and King (2014b) concluded, "Big data ethics are for everyone" (p. 432). Thus, this issue's trend report focuses on big data, privacy, and digital ethics. Three recently published books have the potential to inform media ethics research across multiple professions, particularly given the emphasis on data analytics in both journalism and strategic communication. All of these books could be required reading in both undergraduate and graduate seminar courses.

O'Neil, C. (2016). Weapons of math destruction: How big data increases inequality and threatens democracy. New York, NY: Crown

In this timely and thought-provoking book, data skeptic Cathy O'Neil uncovers the dark secrets of big data, demonstrating how supposedly objective algorithms could, in fact, reinforce human bias. O'Neil, a mathematician who has worked as a professor, hedge-fund analyst, and data scientist, refers to the mathematical models that claim to quantify important traits as *weapons of math destruction*, WMDs for short, throughout the book because of their destructive characteristics. In the introduction, she writes,

> Like gods, these mathematical models were opaque, their workings invisible to all but the highest priests in their domain: mathematicians and computer scientists. Their verdicts, even when wrong or harmful, were beyond dispute or appeal. And they tended to punish the poor and the oppressed in our society, while making the rich richer. (p. 3)

O'Neil declares that although big data has many evangelists, she is not one of them, admitting,

> This book will focus sharply in the other direction, on the damage inflected by WMDs and the injustice they perpetuate. We will explore harmful examples that affect people at critical life moments: going to college, borrowing money, getting sentenced to prison, or finding and holding a job. (p. 13)

WMDs have three common components: opacity, scale, and damage. Of course, O'Neil talks about experiences during her career in finance, but she also uses a variety of examples across other facets of life, including schools, colleges, workplaces, courts, and even voting booths, to demonstrate how algorithms are used to undermine equality and increase power that oftentimes make life-altering decisions for people. For example, she dives into the dark world of online advertising and higher education in "Chapter Four Propaganda Machine," exposing how for-profit colleges prey on the vulnerable side of the population while the "WMD in the *U.S. News Best Colleges* ranking made life miserable for rich and middle-class students" (p. 69). O'Neil explains:

When it comes to WMDs, predatory ads practically define the genre. They zero in on the most desperate among us at enormous scale. In education, they promise what's usually a false road to prosperity, while also calculating how to maximize the dollars they draw from each prospect. Their operations cause immense and nefarious feedback loops and leave their customers buried under mountains of debt. And the targets have little idea how they were scammed, because the campaigns are opaque. They just pop up on the computer, and later call on the phone. The victims rarely learn how they were chosen or how the recruiters came to know so much about them. (p. 70)

In the concluding chapter, O'Neil proposes a Hippocratic Oath for data scientists that focuses on the possible misuses and misinterpretations of their models. She includes the oath crafted by two financial engineers, Emanuel Derman and Paul Wilmott, following the market crash of 2008 but concedes that "solid values and self-regulation rein in only the scrupulous" (p. 206). Lastly, she writes, "Math deserves better than WMDs, and democracy does too" (p. 218).

The winner of countless book awards in 2016, O'Neil writes with an accessible tone that makes the book an easy read that is both distressing yet entertaining. She does an excellent job analyzing the pervasiveness of algorithms that inundate our lives.

Wu, T. (2016). *The attention merchants: The epic scramble to get inside our heads*. New York, NY: Knopf

In his latest book, Wu, an author, policy advocate, and professor at Columbia University who is best known for coining the term *net neutrality*, explores "the fundamental, continual dilemma for the attention merchant—just how far will he go to get his harvest?" (p. 69) He traces the historical progression of the advertising industry and its war for our attention. The journey begins in 1833 with the first attention merchant, Benjamin Day, in New York City. Wu explains, "It cannot be denied that the *Sun* succeeded or that the model Day conceived would spawn generations of imitators, from radio networks and broadcast television to Google and Facebook" (p. 18). The first six chapters of the book chart the early days of advertising with plenty of historical references and thought-provoking anecdotes about products such as orange juice, Listerine, and Lucky Strike cigarettes.

It seems that erosion of privacy starts when advertising enters "what had been for millennia our attention's main sanctuary—the home" (p.84) and has continued to diminish at an alarming pace since then. From prime time on the television screen to e-mail on the third screen and social media on the fourth screen, our attention is more and more fragmented given the pervasiveness of media in our lives. When writing about the mirror of narcissus and social media, Wu claims, "The once highly ordered attention economy had seemingly devolved into a chaotic mutual admiration society, full of enterprising Narcissi, surely an arrangement of affairs without real precedent in human history" (p. 317).

Wu argues that attention will be the new scarcity:

> Ultimately it is not our nation or culture but the very nature of our lives that is at stake. For how we spend the brutally limited resource of our attention will determine those lives to a degree most of us may prefer not to think about. (p.7)

In the concluding paragraph of *The Attention Merchant*, Wu brings up the work of the psychologist and philosopher William James, who "held that our life experience would ultimately amount to whatever we had paid attention to" (p. 344). Thus, it is incumbent on us to "make our attention our own again, and so reclaim ownership of the very experience of living" (p. 344). *The Attention Merchant* is an engaging and thought-provoking book that would definitely stimulate many ethical discussions about the role of advertising in society.

Vanacker, B., & Heider, D. (Eds.). (2016). *Ethics for a digital age*. New York, NY: Peter Lang

This edited volume by Bastiann Vanacker and Don Heider represents a selection of research presented at the 2013 and 2014 Annual International Symposium on Digital Ethics organized by the Center for Digital Ethics and Policy at Loyola University Chicago. The editors note that although "the term 'digital ethics' might appear obsolete in an era when the digital has become ubiquitous" those who study applied ethics cannot "afford to ignore questions raised by digital technology" (p. vii). The volume of essays is thematically organized around three of the most pressing ethical issues of the digital age: shifting professional norms, moderating offensive content, and privacy. Vanacker and Heider (2016Vanacker, B., & Heider, D.(Eds.), (2016). Ethics in the digital age. Peter Lang: New York. [Google Scholar]) explain that for communication scholars

> these issues are tied to the well-known characteristics of digital media: they allow information to be copied and shared more easily, they are accessible to everyone and therefore global in scope, they are instantaneous, and they allow their users to conceal their identity to a certain degree. (p. viii)

The three essays that comprise the last section of the book, fit particularly well with the discussion of big data, privacy, equality, and digital ethics. Lynn Schofield Clark's personal essay about digital research ethics "compels

researchers to consider the ways that we as researchers have encountered new challenges as notions of privacy, identity, and risk are continuously revised in relation to the digital realm" (p. 168). In her essay, Clark reflects on her experiences in moving from traditional ethnographic to critical participatory action research during her work with urban youth. She concludes, "This transition hinged upon confronting the ways that Whiteness had shaped the ethical approaches that guided my own research and the processes of knowledge production that are linked to the university as a colonizing force in societal relationships" (p. 182). She also encourages others to see their role as an ethical obligation to act as catalysts for change. The next two essays by Annette Markham and Jan Fernback focus on privacy. In her essay, "From Using to Sharing: A Story of Shifting Fault Lines in Privacy and Data Protection Discourse," Markham traces the concept of privacy over the past 20 years. She writes, "A close-level rhetorical analysis of discourse over this period indicates that this shift is not only about privacy but also about blame, accountability, and responsibility" (p. 191). Markham concludes that the way we talk about things matters. Lastly, Fernback describes a targeted regime of surveillance, analytics, modelling, and selling undertaken by data brokers that has the potential to perpetrate real privacy harm on individuals. In "Privacy Rights and Data Brokers: The Ethics of a Targeted Surveillance Regime," she draws insights from Kantian ethics, as well as from Foucault, to "interrogate, from an ethical perspective, the entrenched social-legal conventions and norms that allow this targeted surveillance regime to operate" (p. 208). According to Fernback, it is clear that "the invasiveness and the exposure that individuals endure and the construction of a potentially false data self are clear indications that the current Fair Information Practices need an ethical update to reflect the omniscience of the data-brokering enterprise" (p. 223).

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