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Book Review

Review of Ferguson, Andrew Guthrie. 2017. *The Rise of Big Data Policing: Surveillance, Race, and the Future of Law Enforcement*. New York: New York University Press.

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Technocratic reforms driven by advances in big data analytics are reconfiguring institutional norms, practices, and relationships in US domestic policing in profound ways. Andrew Guthrie Ferguson's *The Rise of Big Data Policing: Surveillance, Race, and the Future of Law Enforcement* offers a comprehensive exposition of these trends and does so clearly, with an eye toward policy changes that might minimize the harms of big data policing on minority and disadvantaged communities. Ferguson is a legal scholar and professor, specializing in privacy, Fourth Amendment law, and policing technologies, and has written extensively on "predictive policing." This background is evident in the expertise with which Ferguson situates big data applications within broader institutional patterns in policing. The downside is that the numerous examples through which the book's arguments are developed are nearly all drawn from popular reporting or case law; as a result, there are perhaps too few connections with scholarly work on surveillance technologies outside of Fourth Amendment law and little theoretical contribution. Readers might be willing to forgive (or at least overlook) these gaps considering the book's comprehensive and expositional ambitions and its targeted audience of practitioners in the world of domestic law enforcement, such as crime analysts, legal professionals, and police executives.

At the book's core is a notion that could seem paradoxical to surveillance studies scholars: that big data policing grows out of a collective desire to curtail problematic police practices, systemic biases, and brutality (2017: 20-33). Readers who are somewhat familiar with critical assessments of "predictive policing" may be surprised to learn that proponents genuinely believe in the power of big data to ameliorate (rather than exacerbate) police harm—to rationalize decisions about where, when, whom, and how to police. As the author notes, "In the face of long-standing claims of discrimination, systematic problems, and rekindled rage, police leaders began looking for new strategies to reorient policing... In response to demonstrated human bias, it is not surprising that the lure of objective-seeming, data-driven policing might be tempting" (26). Ferguson attempts to wrangle with this complexity, to give credit to the well-meaning intentions of technocratic police reformers, while offering a critical assessment of the costs and consequences for the communities impacted by technologically aided police scrutiny and investigation. The result is a cautious optimism about the inevitability of big data in policing, an outlook that derives from Ferguson's astute arguments about the implicit politics of data-driven technologies and his sense that they might be used differently and toward different ends.

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The chapters are organized into three sections, although this is not a formal designation. Chapters 1 and 2 offer explanations for the rise of data-driven policing. Chapter 1, “Big Data’s Watchful Eye,” provides a description of big data that will by now be familiar to most scholars of surveillance: data trails, mass surveillance, data brokers, data convergence, etc. The most discerning point here is the fact that the numerous legislative acts designed to protect consumer privacy against the rising tide of commercial big data all contain provisions to exempt law enforcement from their general terms (2017: 17). Chapter 2, “Data is the New Black,” details how a convergence of diverse forces created an environment ripe for technocratic reform in domestic policing: constrained departmental budgets following the 2007-8 financial crisis; US Department of Justice investigations into police brutality and discrimination in places like Ferguson, MO, Baltimore, MD, and Chicago, IL; line officers’ decreased morale and growing frustration with police administration; advances in big data analytics in the commercial sector; partnerships between police departments and academic criminologists; and federal grant dollars to evaluate and implement big data systems in law enforcement. This convergence sets the terms for the tension between police reform and technocratic innovation that Ferguson explores.

The second informal section, comprising Chapters 3 through 6, provides a set of examples of how big data policing is currently being implemented; each chapter addresses a different domain in which big data technologies are transforming standard police practices. Chapter 3, “Whom We Police,” focuses on person-based predictive modeling. This uses demographic profiles and social affiliations (scraped from social media or discerned in law enforcement data, such as “co-arrestees”) to target high-risk individuals for intervention and heightened prosecutorial attention (e.g., the Chicago Strategic Subject List or “Heat List”). Chapter 4, “Where We Police,” shifts from person-based to geospatial predictive policing systems. These use crime data to make risk predictions about specific places and times. In both chapters, Ferguson warns of the systems’ potential to adopt the discriminatory biases inherent in policing practices and to exacerbate harm for racial or ethnic minority populations, even if race or other protected classes are excluded from analysis—a source of bias derived from the intersectional nature of discrimination, whereby social affiliations, demographic information, and geographic location “redundantly encode” membership in protected classes. In both chapters, too, Ferguson presents troubling information about transparency and data quality. For person-based modeling, individuals identified at high-risk are rarely provided with information about how and why they made the “heat list,” while for geospatial modeling, communities are rarely given information about how and why they have become objects of enhanced surveillance and patrol.

Chapters 5 and 6 continue these threads. Chapter 5, “When We Police,” focuses on “real-time surveillance and investigation” and draws together a host of disparate technologies for immediate information access and large-scaling tracking (the Domain Awareness System, automated license-plate readers [ALPRs], facial recognition technology, aerial cameras and drones, and aggregated crime databases). Ferguson rightly cautions that as police begin to rely on these systems for real-time investigative purposes, the margin of error is widened; more room is created for inaccuracies and officers’ ability to double check predictions against common sense is impeded (2017: 97). Chapter 6, “How We Police,” focuses on how the correlational epistemologies of data mining transform suspicion into a problem of mathematical probability. Ferguson acknowledges the predictive, probabilistic nature of all police suspicion (“Probable cause, as the term suggests, turns on probabilities” [125]), and explores how the turn from “small” data (officers’ street knowledge or intuitions) to “big” data may undermine 20th century legal interpretations designed to protect individuals from police abuses. Most troublingly, the “big” version of probabilistic suspicion is generalized, not individual, which raises new civil rights challenges for members of disadvantaged racial and ethnic minority groups that have long suffered from harms of police abuse.

The third informal section, Chapters 7 through 10, provide Ferguson’s analytic take on these troubling trends. Chapter 7, “Black Data,” should be the lynchpin of the entire book, as it summarizes Ferguson’s

interpretation of the problematic nature of big data policing as currently implemented. The problem is that “black” here is meant to do too much work. Black describes, at once, the disparate impact of data-driven policing on black and brown communities; the problem of opacity in black boxed systems; and the distortions of legal rulings caused by big data logics. While this usefully strings together connections across the body chapters, it also suffers from the inevitable thinness of a single concept being made to address race, transparency, and law in one fell swoop. Although there are a number of productive insights here, including a conceptual distinction between “transparency” and “accountability” that would behoove any policymaker to understand (2017: 136-40), the reader will likely find the analysis lacking conceptual depth.

Ultimately, the most important contribution of the book is not “black data” but “blue data,” the subject (and title) of Chapter 8. Blue data refers to the inversion of big data policing techniques to predict police abuses. This is where Ferguson’s tempered optimism about the insights of big data analytics is most applicable, as the same principles used to surveil and monitor urban populations can be turned inward toward line officers. Ferguson details a number of examples of blue data analytics already being developed, including what the criminology literature refers to as “full crime maps” (locational tracking of police officers in the field); algorithms to more accurately flag officers at risk for use-of-force complaints; analyses of “stop-level hit rates” and “hit rate percentages” for unwarranted stops and searches; and the application of ubiquitous, real-time surveillance systems to review problematic policing patterns. Ferguson acknowledges that field officers and the Fraternal Order of Police will likely push back against these new mechanisms of oversight but fails to provide a convincing plan for how to implement such systems other than by fiat (“It may be the case that police officers will feel this type of big data surveillance too invasive, but as with the rest of consumer surveillance, the creepy nature of the personal invasion does not necessarily undermine its predictive value” [2017: 150]). Nonetheless, it is here that connections between police reform and big data surveillance are finally realized, and Ferguson’s summary will be useful for anyone interested in this relationship.

Chapters 9 (“Bright Data”) and 10 (“No Data”) continue this discussion. The concept of “bright data” is a bit vague, but Chapter 9 makes the case that big data policing is actually quite successful in identifying individuals and neighborhoods that have suffered from structural inequities and disinvestment, but ill-suited to address the sources of these massive and longstanding problems. This is summed up nicely by the argument that responses to predicted crime are not inherent in the predictions themselves: “The choice to use police presence as the remedy must be seen as a choice—a policy choice—not one driven by predictive data” (2017: 169). By contrast, Chapter 10 discusses the issues that do arise as a result of the quality of predictive data. The inaccuracies that derive from gaps in algorithmic training data sets lead to the amplification of societal biases. For instance, as underprivileged groups wrongly receive the bulk of surveillant attention (false positives), privileged groups are ignored or left alone by the police, despite their equal or greater propensity to commit a crime like “possession with intent to distribute drugs” (false negatives).

The concluding chapter proposes that law enforcement agencies participate in “surveillance summits” during which data-driven technologies would be audited and evaluated by members of the community. Toward this end, Ferguson offers five questions that might guide such summits, which turn on his earlier distinction between transparency and accountability. His argument—part policy, part ethical and common sense—is that police leaders should be able to identify and defend the decisions they make in terms of technology adoption. These include: the risks that the technology is meant to address; the inputs into the system (in terms of data accuracy and methodological soundness); the system’s outputs and how these influence policing practices; the technology’s ability to be tested and evaluated, not only for accuracy but to ensure that it will not result in disparate impacts; and whether the technology is “respectful of the autonomy of the people it will impact” (2017: 198).

The Rise of Big Data Policing is a smart and comprehensive review of the present state of big data policing. It articulates useful policy recommendations that are easy to get behind. Further, Ferguson's interrogation of the relationship between police abuses and technocratic reform will be a refreshing take for surveillance studies scholars, as the rationales behind the adoption of new technologies are so often overshadowed by the new abuses that they introduce. That said, the book does not go nearly far enough in interrogating this relationship. Ferguson does not pay credence to the ideological work that must be performed to shore up legitimacy for ubiquitous surveillance systems. This eschews, for example, the anticipatory logics of the War on Terror in the historiography of police surveillance. As a result, the book does not consider the possibility that technocratic reform could be serving a legitimating function within a much broader paradigm shift towards a big data-driven securitization of urban spaces.