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41 Policing

Abstract: Police digitalization has the capacity to produce significant transformations in policing practice and organization. This chapter examines the potential impacts on police work and on those policed of digital technologies, suggesting possible directions for future research.

Keywords: digitalization, predictive policing, platformization, police technologies

The digitalization of policing is one of the most significant trends in contemporary criminal justice. Prior strategies such as community policing, problem-oriented policing, hot-spot policing, and intelligence-based policing all encouraged the leveraging of data and analysis to inform police operations. Nevertheless, contemporary police digitalization exemplified through strategies such as 'predictive policing' and 'precision policing' does herald novel transformations and challenges (see Prediction by Ķīlis, Gundhus and Galis). The volumes and combinations of datasets, advances in predictive analytics and data mining, and competitive markets in security technology, have all congealed to mobilize an intensive datafication of police work that continues to accelerate. Predictive policing—which uses predictive analytics to allocate and guide patrols—has received most scholarly attention to date. Nevertheless, predictive policing software is now often only one component of larger cloud-based information architectures that seek to integrate public and private databases, and a range of police technologies including Body Worn Cameras, sensorized weapons and uniforms, ANPR data, and GPS tracking. Sometimes referred to as 'Big Data Policing' this movement towards complex and mutable public-private socio-technical assemblages is also captured in recent discussions of 'platform policing' and 'platformization' (Wilson, 2019a, 2019b, 2021; Egbert, 2019; Gates, 2019; Linder, 2019; see Platforms by Egbert). Undergirded by elements of path dependency and ideological 'dataism' (Van Dijck, 2014) holding that predictive accuracy increases through the compilation, accumulation, and processing of ever larger and more varied datasets, processes of police digitalization exhibit an expansionary logic.

This entry will first examine the specific drivers of contemporary police digitalization. It will then examine the principal areas of research and debate in the field, examining the potential for discrimination and bias, the obscuring of police decision-making, the reception and deployment of technologies in specific contexts, and the organizational implications of police digitalization. This entry draws primarily—though not exclusively—on studies of predictive policing where most research attention has focused to date but will conclude by suggesting possible agendas for ongoing research into police digitalization. While policing online spaces might also be considered an aspect of police digitalization, it is not covered in this chapter.

The rise of police digitalization

While contemporary police digitalization is novel in its scale and analytic capacity, the aspiration that technology could transform police agencies into efficient organizations equipped for the challenges of policing contemporary societies is certainly not. Police cars and two-way radios in the 1930s, computerized Command and Control Systems in the 1960s, and organizational computerization from the 1960s were all accompanied by vivid imaginaries of efficient and modernized policing that founded for various social, political, and technological reasons (Wilson, 2019b). While these earlier entanglements of policing with technology form part of the genealogy of police digitalization, there are several historical contexts from earlier this century that have informed the emergence and rapid advance of police digitalization. The attacks upon the World Trade Centre in 2001 had profound impacts across the security field that cascaded into operational policing. 9/11 energized a pre-emptive orientation, a drive towards data collection and database integration, intensified surveillance, an expansion of the market for security technologies and the formation of 'surveillant assemblages' linking disparate public and private actors and data. Another key event underpinning police digitalization was the Global Financial Crisis of 2008. The collapse of the global financial system resulted in a fiscal crisis and a decade of fiscal austerity where public services—including police agencies—endured sharply reduced budgets. The then novel innovation of predictive policing offered a solution. While science-fiction inspired allusions to seeing into the future were peppered throughout trade literature, it was the promise of enabling police departments to do 'more with less' (Wilson, 2018) that was equally alluring and became an important factor in the rise of predictive policing. Predictive policing embodied the zeitgeist of austerity with its vision of lithe cost-efficient police agencies delivering 'just-ahead-of-time' policing (Wilson, 2018).

The evolution of predictive policing into platform policing emerged in the United States, where the widespread adoption of Body Worn Cameras following the shooting of Michael Brown in Ferguson, Missouri in 2014 created significant storage and processing issues through the volume of visual data. Cloud storage providers—including Tech goliaths Amazon and Microsoft—offered cloud-based public safety storage and processing platforms where police agencies could purchase a range of technologies through 'software-as-a-service' models (Linder, 2019). Most evident in the United States, but unfolding across policing agencies globally, digitalization is advanced by technology vendors and police leaders as a panacea for the plethora of problems besetting policing in the contemporary context—police violence and bias, declining public trust, low workforce morale, and stretched budgets (Ferguson, 2017; Wilson, 2019b). This has energized a powerful 'socio-technical imaginary' (Jasanoff, 2015) of police digitalization that envisages digital technology driving reinvented policing that is proactive, efficient, precise, transparent, and responsive.

Critiques of police digitalization

These new conceptions of policing as data-driven, predictive, and reliant upon algorithmic calculations have received considerable scrutiny from critical scholars. There are three main critiques that are intertwined: 1) a tendency towards what Andrejevic (2018) terms 'frameless data collection'—a faith that predictions and calculations should be continually refined by accumulating ever larger and more diverse datasets, regardless of their obvious relationship to crime or law enforcement; 2) the potential to entrench and amplify existing inequalities and discrimination in policing, through digitally inscribing flawed practices and statistics via data feedback loops; and, 3) the obscuring and rendering unaccountable of police decision-making which remains concealed within inscrutable algorithmic calculations that are claimed to be neutral and objective (see Algorithm by Leese). Concerns that 'frameless data collection' would ensue initially rested in predictive policing's evident affinity with the commercial sector's entrancement with Big Data (see Big Data by Završnik), and its corresponding adulation of data volume, the integration of data sets, data mining, predictive analytics, and the favoring of correlation over causation (Wilson, 2018). It is a valid critique, and the inherent amplification of police surveillance capacity it represents is manifest in empirical contexts. While early predictive policing software such as PredPol© used only a limited number of data points, expansive surveillant assemblages such as the NYPD Domain Awareness System partnership with Microsoft integrate vast and disparate data streams which can then be subjected to machine analysis (Ferguson, 2017). Processes of platformization extending from predictive policing software have fueled a significant data thirst, as police agencies endeavor to integrate disparate data sources in a quest for infinite searchability and automatically generated insights (Egbert, 2019).

The second critique argues that police digitalization and platformization will both entrench and intensify extant patterns of discrimination, criminalization, and stigmatization in policing. This critique extends from the observation that police statistics are notoriously incomplete and error-prone and, moreover, to a large extent reflect police activity and discretion (Wilson, 2018; Bennett Moses and Chan, 2018). Police statistics emerge from specific social processes that are in themselves frequently problematic. The implication of this is that allocating police patrols based upon past police data to predict future incidents will trigger escalating spirals of police activity and data collection, as automated allocations direct patrols to geographic areas that have been the focus of intensive police presence in the past (Ferguson, 2017; Brayne, 2021; Wilson, 2018). While some software developers have attempted to address this problem through random patrol allocations (Shapiro, 2019) this remains a trenchant critique of police digitalization. While critical analysis has most frequently addressed place-based deployments in predictive policing, person-based predictive techniques have proved equally—if not more—controversial. Many initial experiments with person-based predictive applications, such as Chicago's Strategic Subject List, Los Angeles LASER, and the New Orleans Palantir system, have been discontinued due to civil rights concerns,

ineffectiveness, and maintenance issues (Marciniak, 2023). Nevertheless, demonstrating a propensity to extend data collection out through social networks—enacting what Brayne (2021) terms 'secondary surveillance'—such person-based digital databases have been critiqued for energizing racialized and marginalizing police tactics (Ferguson, 2017; Jefferson, 2020). While the body of empirical research on person-based databases remains limited (for examples see Marciniak, 2023; Brayne, 2021), the focus of recently touted strategies such as precision policing on person-based tactics enabled through digital technology (Haberman et al., 2022) render this an important field for future research.

The third critique, closely related to the others, is the obscuring and masking of police decision-making and guiding rationales through reference to machine calculations that are presented as impartial and objective (Bennett Moses and Chan, 2018; Wilson, 2018; Kaufmann et al., 2019). Empirical research does indicate that data-driven police operational decisions risk becoming increasingly opaque as proprietary algorithms and machinic calculations stretched across socio-technical assemblages both mystify and decenter decision-making processes (Kaufmann et al., 2019). Such opacity is also intensified through the interpenetration of private commercial interests with public policing agencies (Brayne, 2021). Although presenting a considerable challenge, acknowledging the three intertwined problems attendant with police digitalization, numerous scholars have advanced pragmatic policy recommendations for police organizations. Both Ferguson (2017) and Brayne (2021) outline the potential of police data, if made publicly available, to facilitate greater transparency and accountability in policing, particularly in relation to police stops and police use of force. Moreover Ferguson (2017), Egbert and Leese (2021), and Van Brakel (2021) all provide useful guidelines that include oversight, transparency, and risk assessment on community impact that may curtail the more deleterious possibilities and actualities that can accompany police digitalization.

Digitalizing the police organization: contexts and contestation

While the three critiques focus on police-community impacts of police digitalization, research also focuses on the impacts and transformations within police organizations. Technology vendors, drawing freely from science-fiction imagery, often promote visions of a seamless field of interwoven technologies. These digital assemblages, it is often claimed, will not only lead to utopias of public safety, but also produce nimble and flexible policing agencies with enhanced officer safety, less paperwork, and more support for officers in the field (Wilson 2019a, 2021). Nevertheless, earlier research into police and information and communication technologies already indicated that police digitalization in practice would not resemble the public safety utopias or dystopias evoked by critics and boosters alike. Dampening initial enthusiasm for the

promised efficiencies of information and communication technologies, initial ethnographic studies revealed that impacts remained highly contingent upon local conditions and organizational structures. The overall shaping of individual socio-technical systems was mediated by the selection of technology, the focus of individual police units and the expertise and abilities available within police organizations (Chan, 2003: 658). While some research suggested a negligible impact upon operational policing (Manning, 2008), others suggested significant—though ambiguous—effects, including the flattening of hierarchies, information overload, the over-collection of data, and resistance to and subversion of technology by police in the field (Chan, 2003).

Recent ethnographic research into police digitalization suggests both continuity with these earlier cautions, and the need to be wary of flamboyant claims emanating from the security technology sector. Sufficient research evidence into police digitalization has now amassed to allow more nuanced and empirically informed assessments. It is perhaps predictive policing that has received the most research attention to date. One of the aspirations for predictive policing—and for digitalization generally—is that machine calculations can replace the flawed and biased judgments of individual officers, an attractive proposition for those calling for police reform (Shapiro, 2019), given that many contemporary problems in policing have been attributed to police discretion and decision-making. Research data reveals however that human decision-making remains significant in the face of digitalization (Fussey et al., 2021). Sandhu and Fussey's (2021) research examining the deployment of predictive policing software in a British police force found considerable resistance from officers who questioned the utility and accuracy of the digital calculations and remained suspicious of the potential of the technology to the subjective skills that constituted policing 'craft.' Ratcliffe et al.'s study of HunchLab predictive software in Philadelphia reported similar suspicion amongst some officers who subscribed to more traditional approaches to patrol. Nevertheless, their research revealed varied reactions to the software, with some officers perceiving it as a useful extension and aid to police work (Ratcliffe et al., 2020). Applying insights drawn from Science and Technology Studies, researchers have noted that digitalization occurs within specific social and organizational contexts. Digital technology is transforming police work. Nevertheless, these transformations are mediated through co-constitutive processes as the technology is engaged within complex socio-technical assemblages where actors contest, interpret and repurpose data informed by diverse values and objectives (Fussey et al., 2021).

Resistance to and lack of engagement with digital technologies from officers in the field is a persistent theme in the literature. Technologies may be resisted by officers if they are perceived to be flawed or not useful (Sandhu and Fussey, 2021). Another significant reason why digital technologies may be resisted and subverted however is the fear of automation (see Automation by Mann). Officer concerns that policing is being 'deskilled' as decision-making and discretion are transferred to automated processes resurfaces repeatedly in the research (Egbert and Leese, 2021; Sandhu and Fussey, 2021), and some of the more exuberant socio-technical imaginaries of police digitalization suggest it is a not entirely unfounded concern (Wilson, 2019a).

Resistance and subversion of digitalization from the police workforce may also result from it being perceived as a form of managerial surveillance. The introduction of new technologies into policing has historically been accompanied by new modes of monitoring and surveilling officers (Wilson, 2019b). While such potential remains implicit in the trade literature, others have not been as reticent to expound the management potential of police digitalization. Bratton and Malinowski's vision of COMPSTAT Plus, drawing upon the labor management practices of major retailers such as Target Corporation, imagines sensorized environments constantly processing raw data "in real time according to a series of integrated performance metrics that measure and then display weighted data" (2008, p. 264). While algorithmically modulating workflow to increase officer productivity (Benbouzid, 2019), predictive policing software and other technologies augment the capacity to monitor officers' spatial and temporal locations, with the digital assemblages of 'platform policing' often incorporating visual dashboards integrating and displaying data from sensors, cameras, and other technologies recording officer activity (Wilson, 2021). Unsurprisingly perhaps, Brayne's (2021) ethnography of the LAPD revealed subversion and resistance to digital managerial surveillance from officers in the field. Nevertheless, police digitalization may produce deeper structural transformations that foreshadow tighter managerial control and a narrowing of discretion. Examining the digitalization of policing in Norway extending from intelligence-led strategies, Gundhus et al. (2022) present evidence that the standardization and specialization attendant with data-driven policing can result in intensified managerial centralization and control through 'digital taylorism' and a concomitant diminution of feelings of autonomy and expertise amongst front-line officers.

Conclusion

Police digitalization continues apace. It is therefore imperative that criminologists develop research agendas and conceptual tools to understand the new policing landscape as it unfolds. Importantly, police digitalization involves the formation of complex socio-technical assemblages that weave together dynamic and sometimes internally fractious constellations of public and private actors, databases, software, and hardware. To conclude, there are five significant dimensions of police digitalization that might inform ongoing criminological critique and research. These are:

– Broad claims that police digitalization will produce organizational efficiencies, procedural fairness, community engagement, and enhanced public safety should be subject to both conceptual scrutiny and empirical evaluation from criminologists and empirically examined and critiqued.

– There is vital work still to be undertaken in critically assessing the capacity of police digitalization to inscribe, obscure, intensify, and create patterns and practices of discrimination and inequality in specific milieus.

– It is evident police digitalization has the capacity to produce significant transformations in police organizations and in police practice, energizing novel socio-tech-

nical assemblages, and producing novel forms of expertise, assessment, contestation, and negotiation. Criminologists can fruitfully engage with cognate fields such as science and technology studies, surveillance studies, and organization studies to examine the network dynamics and operational impacts of specific sites and technologies.

– Police digitalization is a global phenomenon, and research into Global South contexts (see for example Duarte, 2021; Narayan, 2023) is of considerable importance.

– Researchers should also continue to examine the political economy of police digitalization, an aspect captured by the concept of 'platform policing.' Invaluable work has been undertaken on the role of technology designers, developers, and vendors in police digitalization (Shapiro, 2019; Linder, 2019), and trade shows and literature also remain invaluable sources.

Police digitalization is propelled by vivid socio-technical imaginaries. The contours of these imaginaries, and how they are fractured and reinvented when colliding with the empirical realities of policing, are fertile areas for criminological inquiry.

Suggested reading

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