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Automated Monitoring in the Workplace: The Devolution of Recognition

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This afterword situates the phenomenon of "bossware" within the current tendency of automation to facilitate processes of "social recession." This latter term refers to the ways in which recent developments in media technology facilitate tracking and monitoring at a distance. Remote work and the gig economy demonstrate how these technologies promise to reconfigure the firm in ways that reinforce broader logics of casualization and subcontracting that characterize "flexible" accumulation. Managing large-scale, flexible, distanced employment requires automated forms of recognition that now stand in for face-to-face relationships in the workplace. As in the case of the consumer-facing side of the online economy, social recession does not eliminate sociality but runs it through platforms that automatically collect and process interaction data. The result is what this article describes as the "devolution" of recognition—increasingly associated with automated forms of biometric identification and tracking.

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The term "surveillance capitalism" (Zuboff, 2020) is a popular but misleading term for the online economy insofar as it implies some alternative formation of capitalism. However, from its inception, capitalism has gone hand-in-hand with the intensification of surveillance. The lesson of Foucault's (1977) famous discussion of the panopticon prison, for example, is that surveillance has a crucial role to play in the rise of capitalism and the shift to modes of value extraction that rely on the intensification and rationalization of production. Foucault's (1977) insight is that, from the perspective of a capitalist society, forms of punishment that impair labor power are destructively unproductive. Much better, from the capitalist's perspective, it is to produce docile and productive bodies than to break them. The history of wage labor under capitalism has been, in no small part, tied to the development of more comprehensive and intensive forms of workplace surveillance—first to reduce "shirking," then to rationalize workplace processes, and eventually to fold a growing range of activities into the production process—a stage referred to as the "surveillance capitalism" moniker or, relatedly, as the concept of the "social factory" (Negri, 1989). As Negri (1989) puts it, the social factory describes a process whereby "work processes have shifted from the factory to society, thereby setting in motion a truly complex machine" (p. 92). The attempt to capture and monitor a growing range of activities by migrating them onto digital platforms is one of the hallmarks of the expansion of the social factory.

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In the workplace proper, the advent of interactive digital platforms marks a dramatic increase in the ability to automate surveillance and tracking. To monitor a worker on a typewriter, or a drill punch, you must watch them, but to track a worker on a networked device, a growing array of options is available. As Barili's contribution to this Special Section observes, platforming the workplace enables "rapid collection, analysis, and inference without requiring additional human observers." Digital technologies tend to be reflexive—in performing their tasks, they simultaneously record them. The result is more tracking without additional human oversight. Even a tool as basic as a barcode scanner creates a new set of metrics that can be used to monitor and evaluate worker activity. As Luke Munn points out in the introduction to this Special Section, the development of so-called "bossware" is continuous with a range of tracking practices reaching back to the early days of so-called "scientific management." One of the challenges faced by its pioneer, Frederick Taylor, was the labor-intensive character of pre-digital monitoring—also, of course, a central concern of the utilitarian philosopher Jeremy Bentham (2020), whose panopticon design was meant to achieve a powerful, productive, and cost-effective surveillance system. Taylor's (1913) system, by contrast, was quite costly because it operated, in principle, at the level of the individual, taking into account workers' attitudes and capabilities as well as the exigencies of their tasks. Taylor (like the sociologists at the Ford Motor Company) was interested not just in the physical capacities of the pig-iron worker Schmidt but also in his habits and ambitions (see the discussion in Taylor, 1913). Transforming a workplace according to the system of scientific management in its most developed form required a host of observers with clipboards (and, eventually cameras) tracking in detail the activities and characters of individual workers.

As a growing range of productive activities incorporated networked devices, the cost of granular monitoring dropped dramatically, enabling the galloping forms of data capture that have come to characterize the increasingly "smart" workplace. In particular, these technologies allowed the automated monitoring gaze to extend beyond the walls of the workplace, pioneered by technologies for monitoring remote workers, such as truck drivers and delivery workers. The automated "gaze" worked its way into a range of workplace tools, from computers to fleet-monitoring systems, generating an array of new performance metrics and creating more comprehensive monitoring regimes—what Cinque's contribution to this Special Section describes as "a more monitored, data-centric and regulated work setting."

As Munn notes (in the introduction), remote monitoring technology received a boost during the pandemic, when many workplaces went remote, facilitated by digital platforms that doubled as both productivity tools and tracking devices. However, this exceptional moment simply highlighted tendencies that predated it and extend beyond it—developments that are becoming increasingly persistent and ubiquitous. Bossware fits within the broader logics of the expansion and "flexibility" of the workplace. Automated forms of detailed, high-resolution monitoring facilitate remote work, subcontracting, and the multiplication of datafied "key performance indicators." They enable the restructuring of firms via platformization, and they simultaneously reconfigure social relationships in the workplace. As a means of tracing the logics that unify these developments, this afterword considers two dimensions of bossware that reconfigure relationships in the workplace: The recession of the social and devolution of the monitoring gaze.

Social Recession

In the spring of 2021, an Uber Eats driver in London learned he had been dismissed from the company and his account deactivated even though he had not violated the company's rules during the year and a half he had been working for Uber. The problem, he said, was with the automated facial-verification system the company used to ensure drivers were not sharing accounts. The driver, Pa Edrissa Manjang, suspected that his dark skin was harder for the system to recognize, because of the frequent requests he received to resubmit a selfie when logging in. He was able to obtain the collection of photos he had submitted to Uber—all of which were clearly of him—and sued the company for using biased technology that excluded him from his means of earning a living (Thomas, 2022). Uber eventually restored his access to the platform and settled his lawsuit for an undisclosed amount in early 2024.

Manjang's experience highlights the increasingly widespread use of surveillance in the gig economy to verify both contract workers and, in some cases, customers. Airbnb, for example, has used facial-recognition technology to confirm that guests who check in are the same as those whose account was used to pay for the rental. Similarly, gig delivery services including Deliveroo, Spark (Walmart's delivery app), Instacart, and Amazon Flex all use face recognition to verify riders and drivers. Surveillance is being marketed as a way of addressing what might be described as the social deficit of distanced, flexible arrangements. In the gig economy, this deficit manifests itself as an arrangement in which employee and employer, contractor and subcontractor, may never meet. However, it also appears in other forms of remote work. Fleet-management systems, for example, can track the following distance between cars and identify speeding, stop-sign violations, and distracted driving. These systems can use automated biometric systems to track drivers' moods, dispositions, and emotional states (Gordon, 2021).

Of course, automated workplace surveillance is not limited to the gig economy but pervades the platforming of the workplace. Bossware operates across a range of work categories to render the monitoring capacity of managers continuous and ubiquitous. It reproduces a form of social distanciation by inserting itself between worker and manager. During the COVID-19 pandemic, for example, the *Washington Post* described a remote employee-monitoring system that requires workers—in this case, high-end legal researchers—to submit to an always-on facial-recognition system that tracked every movement of their heads: "If she looked away for too many seconds or shifted in her chair, she'd have to scan her face back in from three separate angles, a process she ended up doing several times a day" (Abril & Harwell, 2021, para. 2). The remote character of the work served as the alibi for comprehensive monitoring—but the technology also addresses what might be described as the perceived attention deficit that emerges against the background of the increasingly comprehensive forms of tracking enabled by interactive platforms. Managers cannot monitor individual workers as comprehensively as interactive platforms can—a fact that provides an opening for bossware for in-house workers. The promise of bossware is a generalized one: All forms of work that incorporate networked devices of one kind or another can provide more comprehensive and datafied tracking and monitoring than humans can.

The offloading of workplace monitoring onto automated systems is a symptom of the generalized forms of "social recession" that characterize the online economy. The term is adapted from Thomas Haskell's (2021) account of the rise of professional social science, which he attributes to the "recession of causality"

associated with industrial technologies of transport and communication (p. 40). The accelerated movement of both goods and information in the 19th century meant that "society's components . . . began to influence one another more frequently, more intensely, and in more varied ways" that were difficult to discern directly (p. 40). The result, Haskell (2021) claims, is that "as causation receded, one's immediate social environment was drained of vitality. Things near at hand that had once seemed autonomous and therefore suitable for causal attribution were now seen as reflexes of more remote causes" (p. 40). Social science played the role of sorting out the complex forms of interdependence behind these remote causes.

In the era of increasing automation, we might trace an analogous recession—something along the lines of the recession of the social—in the increasing prevalence of automated forms of sorting, curating, and decision making. This is not to discount the burgeoning forms of hype-social interaction that take place online but rather to interrogate the suppressed social relationships that serve as their conditions of possibility. It is also to consider some of the ways in which what might be described as "banal" or quotidian forms of sociality are backgrounded when processes are automated (in the case of everything, from cashier-less stores and remote shopping to employee monitoring). The flexibility of the gig economy, for example, relies on the subtraction of quotidian forms of sociality as does the expansion of the remote workplace. Some fast-food restaurants have even responded to increases in the minimum wage by using videoconferencing software to replace in-person cashiers with offshore labor. Customers buying fried chicken in New York find themselves talking to employees piped in on a video stream from the Philippines at the checkout counter—one more way in which Zoom comes to mediate social interaction (Rogelberg, 2024). Similarly, fast-food restaurants promise to become even faster—or perhaps simply less labor-intensive—thanks to the replacement of the checkout counter by automated kiosks. No need to talk to anyone—simply press some buttons and swipe a card. The promise of convenience, control, and efficiency promotes the process of disembedding from quotidian forms of sociality. Even within non-remote contexts, a growing reliance on platform tracking inserts a layer of datafication between employees and managers: A host of metrics emerges that takes the place of more qualitative forms of workplace sociality. Something similar takes place in the realm of automated resume screening and even artificial intelligence (AI) job interview bots.

One result is the reorganization of the firm. In a classic economic formulation, the firm emerges as an organizational structure to compensate for the difficulty of accurately allocating individual contributions to collaborative activities (Alchian & Demsetz, 1972). This formulation takes as its motivating factor the cost of comprehensive granular monitoring:

> In team production, marginal products of cooperative team members are not so directly and separably (i.e., cheaply) observable. What a team offers to the market can be taken as the marginal product of the team but not of the team members. (Alchian & Demsetz, 1972, p. 780)

The firm structure thus relies on human forms of surveillance whereby managerial compensation is tied to overall team performance, providing managers with the incentive to police the performance of individual members. This incentive relies on the literal proximity of their relationship. The larger the firm, the more layers of managerial oversight. In the current context, however, technological developments

render granular tracking comparatively more cost-effective. Contract and remote labor become more desirable modes of economic organization when issues related to monitoring and accountability can be addressed via automation. Although some workers welcome the perceived flexibility of working from home, remote labor relieves firms from the obligation of providing a safe and secure workplace. Taken to the limit, subcontracting becomes a formalized model for flexible production.

The prosthetic enhancement of human surveillance enabled by the platforming of tools for productivity and communication thus compensates for some of the limitations of human surveillance, enabling the rapid expansion of economic models based on gig and remote work, like Uber and Amazon. The recession of the social is not the same as its elimination or surpassing. All kinds of social labor are crucial to the appearance of automation, from content curation and data tagging to the piecework labor provided by Amazon's Mechanical Turk. But for automation to appear as such, this activity must recede into the background. It is no coincidence that the recession of the social simultaneously backgrounds the exploitative working conditions that structure so much of the "ghost" work that supports automation (Gray & Suri, 2019). The point has perhaps broader salience: There is a tendency in automated systems to background the social relationships that shape them, which is why so much critical work takes the form of attempts to resurface these relationships, whether in the form of the social biases that permeate the data or in the conditions of production that shape the development and tuning of algorithms (see, e.g., Crawford, 2021).

Devolved Recognition

Social recession is facilitated by what might be described as devolved recognition—that is, its displacement onto boss-tech. Drawing on Hegel's famous formulation of the dialectic of recognition, Klikauer (2016) developed a taxonomy of thwarted recognition in the workplace, including "misrecognition," "non-recognition," and "de-recognition." We might add to these categories "devolved" recognition. Facial recognition would be the paradigmatic form of this devolution, as highlighted by the misleading character of the formulation. Machines cannot re-cognize us—any "cognitive" character implied by the term ("re-cognition") dissolves in the process. The goal is, precisely, verification and quantification—as is the case with bossware more generally. Actual cognition can get in the way: Knowing an employee can only threaten to "contaminate" the (false) objectivity of the machine. What are familiarity and sociality when weighted against the verdict of increasingly detailed tracking of "key performance indicators"? Bossware is not limited by the need to spread itself across multiple actors. Like the AI assistant in the movie *Her* (Jonze, 2013), it can carry on multiple simultaneous "relationships" with employees. The tendency is toward continuous monitoring and tracking, not just of proxy measures for productivity but also in some cases, of mood, expression, and attention—the system's version of "getting to know" the worker. Whatever dialectic of recognition might have been at play in the workplace, then, is disrupted by the forms of social recession characteristic of automation—the distanciation between managers and employees, between consumers and gig workers, and, significantly, among workers themselves. Machinic recognition is better understood as a form of identification and verification that functions in the place of employers—or customers—knowing or learning about workers and the conditions under which they labor. An investigative report by the *New York Times* (Browning, 2023), for example, noted that gig delivery work yields lower tips as a percentage of sales than in-person service work, such as waiting tables or tending bar. As the article (Browning, 2023) put it, "Customers, conditioned during the pandemic to prefer 'contactless' deliveries

that drivers say now feel dehumanizing, seem less inclined to generously tip someone with whom they've barely interacted" (para. 9).

With its dashboards full of metrics and its automated data processing and alerts, bossware does something similar: The layer of datafication comes between worker and manager as well as between worker and worker. This may make organizing the workplace more challenging, although, as Ye and Zhao's contribution to this Special Section suggests, the potential for resistance is ever-present. In the platformed workplace, everyone has their own detailed set of metrics that goes far beyond the humanly observable activities of the workplace. Trends and correlations distilled from spreadsheets can shape everything from compensation to promotion to redundancy. As in other contexts of platformization, the amount of data generated creates a control crisis that can only be addressed by automated systems that "make sense" of the available data, leading to new forms of social sorting in the workplace. This is not an entirely novel development: As Beniger (2009) suggests, it has its roots in processes of bureaucratization, which enables trusted tokens and credentials to stand in for first-person knowledge in socially distanced relationships—hence the term "faceless bureaucracy." Automated biometrics paradoxically extends the logic of facelessness into a growing range of social interactions. These interactions remain fundamentally social in the sense that they rely on and reproduce irreducible forms of societal interdependence. However, they become harder to recognize as such when the social interactions—and even the most basic forms of recognition that enable and characterize it—are offloaded onto automated interfaces. The fact that these interfaces enable the recession or devolution of sociality is precisely what enables the flexibility and economic viability (such as it is) of the platformed workplace.

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