



## CHAPTER 3

# THE ELECTRONIC WHIP

TAYLOR AND THE OTHER MANAGEMENT GURUS WERE TRUE REVOLUTIONARIES. They transformed the way production is performed and services are provided, changes that affected the ways we live our day-to-day lives. Their science became the new metronome of American capitalism. Through the deft control of labor, they delivered management the upper hand, transforming the factory into a fiefdom. Today's workplaces bear their unmistakable imprimatur.

But what Taylor and others started, modern productivity experts have intensified. Look at the work sites of the country's largest employers, and it's clear that when work time is weaponized effectively today, it's not only measured but mastered and monitored too. We must know *how* people fill their hours, and at what speed, not only that they do, in fact, fill them. Taylor and his contemporaries sought to uphold a bureaucratic rationality, with workers and bosses fulfilling their respective roles. Today a temporal rationality rules, as the role of time in the exploitation process has become more central to management than ever. The result has been not just longer hours but speedup, tighter deadlines, more technical control over schedules, and a surveillance and policing system to make sure every second of work is accounted for. For the most part, there's no bawling foreman



timing workers' every move or specialist to advise managers on efficient motion. But that's not to say that similar processes aren't at work. Much of them have been amplified by new technologies.

In 2010 Amazon announced it was coming to Lehigh Valley, Pennsylvania, in a series of billboards that lined local highways. I grew up there, and most people I knew received this news as necessary relief. There were five job seekers for every open position, and as the official unemployment rate gained on 10 percent, the oft-heralded recovery from the Great Recession felt nonexistent to most locals. Several old friends and family members received postcards in the mail recruiting for Amazon's new fulfillment center in Breinigsville, not far from my hometown of Bethlehem.

Amazon's Lehigh Valley fulfillment center is located just a short drive from where Frederick Taylor first pushed Schmidt to load forty-seven tons of pig iron onto a cart at Bethlehem Steel more than a century ago. Since then the United States has passed myriad labor laws that are supposed to protect workers from undue pressure, dangers, stress, and theft. Their time, however, is still largely unprotected by federal statute. Scientific management is no more scientific than it ever was; it has merely been moved into the digital realm. Imagine today's Taylorist factory worker, the ghost of Schmidt, hard at work at an Amazon warehouse. She's not loading pig iron but moving packages. And rather than being timed, she's racing against herself. Her name is Nichole Calhoun.

At first Nichole was excited about the prospect of working for Amazon. Work was hard to come by and she was frustrated by the moralizing platitudes of local career counselors promising jobs if only she "mastered the art of 'personal branding' to stand out among the competition." At the time, she knew Amazon only as an online bookseller, and when she went to hand in her résumé she imagined the local office might look something like a dazzling library. But after a drug test and a background check she landed a gig on the night shift making \$12.75 an hour. "They never looked

at my résumé. It was too easy,” she wrote later, though her opinion soon changed when she started working. Amazon made \$34 billion that year. Instead of a glorified bookstore, she found the paradigmatic warehouse we are familiar with from news reports. Amazon’s Lehigh Valley facility covers more than six hundred square feet, with floors on each end the size of football fields.

When orders came in, Nichole’s handheld scanner began a countdown clock as she followed the instructions to find the item, scan it, and place it in the correct bin. The scanner also gave her a “pick path” to follow to the next item. All night long. She walked up to fifteen miles a night through the endless rows of shelves, scanning thousands of bar codes. “Everything had a bar code—even me,” she told me. A white badge that hung around her neck tracked her location, and the scanner in her hand monitored her productivity. “The scanner was your master,” she said.

She wasn’t alone in the cavernous place. She worked alongside moonlighting teachers, debt-laden students, parents who split their childcare shifts, skilled laborers, veterans, migrants, and others who sometimes drove many hours to and from the facility. “We had plenty of time to get to know each other,” she said, facetiously referencing the work schedule. As a result of mandatory overtime, she often worked fifty-five- to sixty-hour weeks and was routinely roused early from the break rooms and told to get back to work by security guards. During peak season around the winter holidays, schedules were altered frequently to meet productivity goals and sick leave was eliminated. Yet despite needing all hands on deck, firings were common, a churn-and-burn mentality that was made possible by a slack labor market. The challenges of excessive hours were compounded by the lack of job security, as the company sent notoriously mixed messages about their employment future after the Christmas rush died down. It was common, Nichole told me, that when pickers passed each other in the shelving units, racing against their individualized

countdown clocks, they would raise their scanners to their heads and pretend to pull a trigger.

By Amazon's standards, however, Nichole was the ideal worker. She easily surpassed the required 125 picks per hour. As one of the facility's most productive pickers, she quickly rose the ranks to become an ambassador, a title that came with more money and the responsibility to train other pickers. At pick school, as it was called, she followed the company script, but also took the opportunity to caution against overwork, burnout, and fatigue. Though she was hired by a temp agency, the promise of full-time work for Amazon was always dangled in front of her, and kept her motivated and working harder.

But she was let go after Christmas anyway, and then rehired late the next summer. In the meantime, the local newspaper, the *Morning Call*, had run an exposé on the Breinigsville facility, for which Nichole had been a major source. It was the first close encounter with Amazon the public had ever read, and it quickly became a global news story. What she had seen on the inside was suddenly in the public domain.

Temperatures were frequently over 100 degrees inside, and it was not uncommon to see workers carried out in stretchers or wheelchairs from dehydration or heat stroke. On a single day in June, fifteen workers collapsed on the job as temperatures reached above 110 degrees. After management installed fans, one worker was quoted as saying it was like "working in a convection oven while blow-drying your hair." In response, Amazon arranged to have paramedics parked in ambulances outside the site to treat those who suffered from the heat and pace of work. Nichole said it got so hot on the upper floors that she sometimes had trouble reading the bin numbers correctly. "It made me crazy. I literally couldn't see straight."

If it wasn't the heat, it was the ever-increasing pace of work. Many hired at the facility weren't even employed by Amazon. They were brought in by a temp agency, ISS, a global security firm with

which Amazon contracted to handle its warehouse employment. The temp agency's job, however, was more than subcontracting. "They were the ones always cracking the whip," Nichole said.

The *Morning Call* quoted Stephen Dallal, a Kutztown resident who had responded to an advertisement to work in a "fun, fast-paced atmosphere." Dallal was fired after six months for failing to meet productivity targets. "It just got harder and harder," he said. "It started with 75 pieces an hour. Then 100 pieces an hour. Then 125 pieces an hour. They just got faster and faster and faster."

Nichole stayed at Amazon for another peak season. Things did not improve markedly. She began talking about a union in hushed tones in the break room, but the only responses were scrawled on the bathroom walls, because she said people were scared to speak for fear the company was listening. Management began flooding the work site with temps. Nichole started being short-shifted, sent home in the middle of the day, and she wasn't getting enough hours to make a living. "First I'm worked to death; then I'm practically starving for work. This is what they did to us," she said. "And the whole time they're watching us. . . . It was the cruelest, most sadistic workplace I've ever seen."

Nichole was creeped out by the surveillance technology she and the others labored under. But it was the all-too-banal problems of poverty and bad luck that eventually did her in. Her apartment was broken into. Her car was towed for a parking violation from the Amazon lot while she was at work. And without enough money from inconsistent shifts, she was forced to leave and look for work elsewhere. To get the Amazon job she had signed a non-compete contract, a legal document that forbade her from working with Amazon's direct competitors for a specific amount of time. "But Amazon competes with everyone," she told me, clearly exasperated to this day as she relives the memories. She couldn't find any work, so she maxed out her credit cards on food and other essentials and moved west, tramping around People's Park in Berkeley, California, and eventually landing in Seattle.

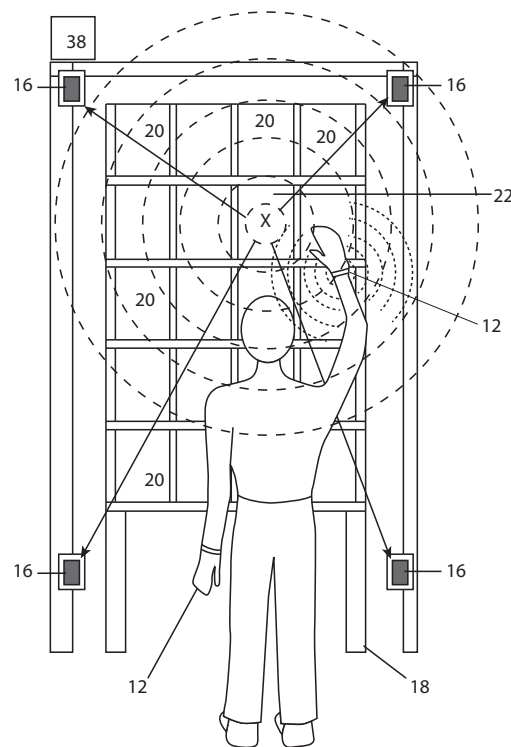
Fast-forward a few years and she was flying a sign, street slang for panhandling: “I was an order picker at Amazon.com. Earned degrees. Been published. Now I’m homeless, writing, and doing this. Anything helps.” In all, she spent six years homeless, sleeping on the streets, in shelters, and occasionally on a friend’s couch. She said people she met panhandling were often surprised by her story. She rebuked them first on the street, and later in the *Guardian*. “My homelessness isn’t a mystery,” she wrote. “I simply could not afford to keep a roof over my head. . . . I’ve met other intelligent hard-working homeless people.”

By the time I spoke with her, things had improved. She was managing to avoid some of the worst flak that came from being an enemy of Amazon and had finally gotten a roof over her head. But it hadn’t been easy. “I did American Studies on the ground for six years,” she said, referring to the ethnographic data she collected on those with whom she lived and lived off of when she was panhandling. Now she does paid work for a group that helps manage a tent city for the homeless, an encampment practically in the shadow of Amazon’s new West Coast headquarters. “I found more respect on the streets flying signs than I ever did working for Amazon,” she said. “Every time I see that place I’m reminded of how awful it was.”

Nichole’s story would be gut-wrenching if it was just one person’s saga. But years after Nichole and others blew the whistle on Amazon’s Lehigh Valley facility by speaking to the *Morning Call*, court cases began to paint a broader picture of the company, giving her story a universal quality. When a worker in Baltimore sued the company, Amazon defended itself with evidence that the worker had committed an offense it listed as “productivity\_trend.” In many cases, workers were automatically fired, without managers actually speaking to them, when the company’s monitoring system found that they had dipped below productivity benchmarks. In that one facility in Baltimore, three hundred workers had been let go in one year, a decrease from previous years, the company

said. In another case, hundreds of East African migrants at an Amazon facility in Minnesota protested the lack of time to pray during their shifts. Their protests resulted in a shocking reversal of company policy for Amazon that allowed them extra time to meet the requirements of their Muslim faith. But others weren't so lucky. A group of workers in Nevada lost a Supreme Court case that ruled they did not have to be paid for the lengthy mandatory security screenings at the end of each shift, which sometimes took up to half an hour, before they were allowed to leave the warehouse.<sup>1</sup>

#### AMAZON PATENT: ULTRASONIC BRACELET AND RECEIVER FOR DETECTING POSITION IN 2D PLANE



SOURCE: Jonathan Evan Cohn, US Patent and Trademark Office, 2016.  
 Ultrasonic bracelet and receiver for detecting position in 2d plane.  
 US patent pub, US 009881276B2.

After Nichole left Amazon, the company patented a device to further direct pickers' time and motion. An image of the bracelet from its patent application is above. It counts your footfalls, maps your route through the miles of shelving, and times your bathroom breaks. It alerts you every nine seconds with "haptic feedback," an "ultrasonic sound pulse" that senses the location of your hands in relation to an item on a shelf, electronically guiding them toward the object. Then it's a race against a countdown clock to find a specific item, scan its bar code, and place it in a bin, before moving on to the next item. If it's an enhanced environment, the picker barely walks at all, standing on a foam pad for comfort, as Kiva robots, communicating autonomously with the wrist device, deliver her shelves one at a time so she can find specific items and send them along.

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WHILE NICHOLE FACED sweltering heat on the top floors at the Amazon center in Pennsylvania, Isabel Barrera was sweating out her shift in the basement of a laundromat in California. Deep underneath Mickey Mouse's House and Roger Rabbit's Car Toon Spin, buried below throngs of jubilant park visitors, a massive industrial laundry rumbles on 24/7 in Anaheim, California. Isabel worked the day shift. Years earlier she had fled violence in El Salvador and made her way to the United States. Eventually, she landed here, cleaning linens at Disneyland. She loaded bed-sheets, cloth napkins, comforters, and clothes into giant washers and dryers. Luxury accommodations like those at Disneyland offer what hotel industry designers call a heavenly bed, an overstuffed mattress with weighted blankets and a pile of fancy pillows, for the ultimate relaxation after a long day on vacation. But in the bowels of the place, the work was hellish—excessively hot, incessantly noisy, and dangerous.

Isabel was in a union that made some of the worst aspects tolerable. She made good wages and enjoyed generous healthcare



benefits. After the union contract expired in 2008, Disneyland made some changes to how it measured worker productivity. Workers used to count on paper the number of linens they washed per shift, but the company had recently instituted an automated counting system that also acted as a productivity tracker.

One day workers arrived to find giant screens affixed around the workplace, with their names color-coded like traffic lights blinking off and on. As they worked, those who were keeping up with the predetermined productivity goals saw their names flash in green. But when they slowed down or dipped too far below Disney's efficiency standards, their names flashed in yellow or red. Managers could monitor the screens above ground and adjust their productivity targets based on average performance. Later, the laundry machines were programmed to flash colors as well, to further identify which workers at which machines were speeding up or falling behind. Workers were routinely disciplined for failing to keep pace with the speedup. They called it the electronic whip.

Managers could crack the whip without even being in the room by making miniscule adjustments to productivity goals from an upstairs control room, monitoring the behavior and performance of individuals and the group. It was not long before workers began cracking it too. They began racing against one another to meet the new productivity goals. Sometimes, they accused one another of slowing the whole shift down, sowing dissension among their ranks. Workers feared that using the bathroom would lose them precious minutes, and the break room went empty because they were scared of management reprisals. Injuries increased as they strained to keep up the quicker pace, while morale plummeted.

Isabel hated the electronic whip. And it wasn't long before she found others who hated it too. It's a small world, after all. So she organized her shift to beat the whip. If one or two workers fell behind, they had a problem. But if they all worked at a reasonable pace, management had a problem. Isabel encouraged

her coworkers to work at their own paces, ignoring the colored lights. Eventually, management was forced to loosen its grip on time, restoring a more regular pace with fewer midshift changes. Collectively, they slowed down the pace of the workday to decrease accidents and injuries, and to exert control. Disney eventually capitulated a bit and agreed not to use what it saw as decreased productivity as a reason to discipline workers. The electronic whip, however, remained. Today such a whip is everywhere. Yet the Isabels of the world aren't always there to push back.

Beatriz Casasola-Topete, the union organizer who helped Isabel and her coworkers fight the whip, has also seen these types of technologies used in hotels. Receptionists are monitored by electronic services that time their calls and their interactions with guests. The stated goal, Beatriz explains, is efficient customer service. Housekeepers at major hotels—Beatriz has seen it firsthand in Hawaii, though the practice is widespread—are often monitored via phones or tablets they are given to track which rooms have been cleaned. Cleaners used to perform that work the best way they knew how, and documented it and communicated it among one another. Now, management can see which rooms are being cleaned in real time, and an algorithm dispatches workers all over the hotels. “It’s often not very logical,” says Beatriz. “At least not from a worker’s point of view.”

But there is a logic to it, of course. HotSOS and Rex Room Expeditor, two major services in the electronic hotel management industry, both promise to save hoteliers millions by streamlining services. Over her twenty years as a union organizer, Beatriz has noticed a clear trend that hotels expect to provide better service and more amenities, with fewer employees, in less time. “Someone’s always cracking the whip,” she says. “They act like it’s a computer program. You think computers just program themselves?”

These two anecdotes underscore how the timing of tasks and calculating of small periods of time is crucial to the business model

of large corporations. As they've modernized and grown, so have the requirements of exactitude. The effects on workers are obvious—stress, poor health, exhaustion, work-family conflicts, not to mention the claustrophobic feeling of being constantly surveilled.

It has always been easy for major employers to treat working-class people as parts of a machine. But white-collar professionals are a different story. The kind of management protocol adequate to a professional environment requires more data, because workers are performing fewer routine tasks. Their actions are harder to guide and, most crucially, harder to predict. And that's where an even more advanced form of scientific management becomes useful. Nichole and Isabel were disciplined to varying degrees by new modes of control. Their white-collar counterparts might be facing a new kind of capitalism. To see how American managers are gaining a greater edge over professionals, we turn first to America's pastime.

Michael Lewis's 2003 best seller, *Moneyball*, recounts how the general manager of the Oakland A's, Billy Beane, revolutionized how teams look for new athletes. Baseball has always been defined by its split personality—an obsession with inane statistics and a feel-for-the-game romanticism. Rather than rely on the gumption of old-fashioned scouts, Beane turned to a Harvard-trained statistician to find the empirical stars in the field of new recruits. Who were the kids, in other words, who were scientifically predicted to be rising stars? The Yankees ultimately won more games that season—though Oakland racked up 103 wins, the longest winning streak in American League history—but the success of the 2002 A's ignited a revolution. Since then, teams have increasingly relied on complex predictive algorithms to assess talent.

Baseball is big business. But it's hard to completely remove the romance of a day at the ballpark. The Field of Dreams will not be 3D printed! The office, on the other hand, is easier to imagine as a vapid social experiment in numbers. Enter Humanyze,

a Boston-based technology firm that applies what it refers to as Moneyball principles for the workplace. Humanyze employs detailed statistical models to measure workplace success. CEO and MIT scientist Ben Waber created a credit-card-sized “sociometric” badge that employees wear around their necks, which records all interpersonal interactions through an embedded microphone. How often do you talk to members of another gender? Does your voice convey confidence or anxiety? Are you waiting your turn to speak or constantly interrupting others? Humanyze can hear it all. Bluetooth capability and infrared sensors can locate you in physical space, and an accelerometer records when you move. The badges can even detect the degree to which you empathize with others. The hundreds of data points the badges collect each minute are merged with dates and times from emails and calendars to paint a full picture of how, where, and with whom workers spend their workdays.

The curious twist is that Humanyze doesn’t exactly record conversations. “It’s not the content of communication that matters,” according to Waber, “it’s the structure.” Humanyze badges do not reveal what is said, but rather create a spatial and cognitive map of when and how employees interact in order to “optimize performance.” When I spoke with him, Waber offered the example of one of his clients, a “major US bank” that realized performance among its various call center locations was very uneven. What could explain the variation and how could the bank make the less productive call centers be more like their more productive peers? Call centers are an important case study because every second is spoken for—success means getting on and off calls fast. Moreover, they were early experiments in how to offshore service industry work, so figuring out ways to make them even more profitable is in line with basic economic history. Using Humanyze technology to measure internal communication patterns, it became clear that the most productive teams had an unusual advantage—they talked a lot to one another during breaks.

The takeaway was that strong social ties that formed during nonwork hours improved productivity. By implementing a new break schedule at the underperforming call centers, the bank saw a 23 percent increase in productivity and a 28 percent increase in employee retention rates. For such a new technology this is a very old insight, calling to mind Elton Mayo's Hawthorne Effect findings on workplace break rooms, discussed in the previous chapter. The point of all this, however, is not simply more productive banks, which ranks possibly last on the list of ways to make the world a better place. Humanyze represents the future of "people analytics." People analytics describes the use of data about human behavior and characteristics to make business decisions. This helps companies make smarter decisions than they would if they relied on the experience of seasoned managers, anecdotes, or corporate aversion to risk. As a revised version of scientific management, people analytics uses data the way Taylor used time.

If Humanyze is *Moneyball* for management, Teramind is *Black Mirror* for business. For the uninitiated, *Black Mirror* is the dystopian TV drama that is premised on depicting a near-future society rent apart by the unintended consequences of new technology. Threats to privacy is a recurrent theme. Teramind is a tool to surveil employees that remotely accesses a person's private webcam and takes photos of him or her every ten minutes.

Combining that data with keystroke counts, number of emails sent, app use, screenshots, social media content, productivity measures, and time use, it can develop a productivity picture of every employee, complete with photographic evidence. This is especially important when hiring freelancers, who aren't in the office and aren't in tune with "company culture." Over time, Teramind constructs an ideal-typical employee—let's call him Schmidt—that can, in theory, be used as a standard to which all real employees must compare. And Teramind can, of course, let you know if Schmidt could work just a little harder.

Teramind's ability to offer live streaming video surveillance distinguishes it from a tight field of competitors, but it is not alone in its quest to wiretap the workplace. There's also Activtrak, Avaza, Vericlock, Boomr, Hubstaff, TSheets, Staffcop, Time Doctor, Desk Time Pro, Track View, Interguard, and, yes, even one called Wiretap. These services are marketed as part of a larger strategy to lower costs by decentralizing operations and relying on independent contractors, specifically because they can lower the associated risks by providing long-distance surveillance. Moreover, as they create minute-by-minute records of on-the-clock activities, this new level of granularity allows managers to decide what counts as payable work time, and to exclude "unproductive" periods like bathroom breaks. One 2017 study on time-tracking programs discovered the default setting on many of the software systems automatically reduced employees' reported time by factoring in breaks, whether workers took them or not.<sup>2</sup>

"No more checking in or circling back. Just moving forward," promises Hubstaff, which monitors employee productivity via random screenshots. Veriato, which dutifully guards your company secrets against internal threats, bills itself as "Security's Achilles' Heel." Interguard, which serves the same function—apparently a company's own employees pose the largest threat to its secrecy—warns, "Your biggest asset is also your biggest liability." Preempt can give your employees "conditional access anywhere," a strange mix of elite gatekeeping and democracy.

Those for whom "big data" is a new way of doing business are often attracted to its democratic promise. "No longer is the alpha male or the senior leader or the loudest person in the room making the decisions," said Daryl Morey, general manager of the Houston Rockets. "Let the data decide," he told me. Morey is the Billy Beane of basketball, and his laid-back demeanor belies his passionate embrace of this new science of sports management. "You have to optimize your championship probability." To that

end, those in the NBA who have embraced Moreyball, as it has come to be known, have customized technology to collect the most granular biometric data—heart rate, pulse, skin temperature, perspiration levels, and more. As for on-court changes, high-percentage dunk shots are still desirable, but there has been a movement toward eschewing once-reliable midrange shots in favor of once-reviled distant three-pointers, because simple math dictates that four successful three-pointers are better than five successful two-pointers. If that makes the game look worse, well, stat heads like Morey don't care.

Yet to many players, the data-driven game is about more than maximizing shooting percentages. The players' union has challenged the wide use of the data collected through wearables because it could help coaches or management discriminate against players if their fitness is found to be lacking. There are professional basketball leagues around the world that display a player's heart rate on the jumbotron when he is shooting free throws. But the player's union here is much stronger and has largely resisted the unregulated use of biometric data.<sup>3</sup>

Of course, most workers don't have the bargaining power of professional athletes. And sensitive healthcare data might be even more damaging in the hands of managers in other industries.

Randy Howell has been a pediatric nurse at the University of California San Francisco Medical Center for eleven years. As a caregiver, he comforts young patients and their parents when they are sick and vulnerable. In 2018, when rumors finally got back to him that management was electronically surveilling nurses at the hospital, his union, the California Nurses Association, confronted management point blank. "We said, 'Are you doing this?' and they said, 'No.'"

But almost a year later he found out they were. Nurses in various clinics and hospitals throughout the University of California health network were being made to wear a two-inch square badge, a "Real Time Locating System," that tracked their movements

throughout the hospital. The badges are made by Midmark and are specially designed to track and time healthcare professionals as they “interact” with badges on patients and devices attached to patients’ beds. The badges are designed to recognize the type of employee in a given room—nurse, doctor, technician—and automatically alert other kinds of workers, in the event of an emergency, for example. For that reason management markets the system as a communication device among coworkers. Considering the nurses initially didn’t even know they were being tracked, it’s no surprise they didn’t see it that way. “As soon as we found out, we put out a cease-and-desist order to UCSF,” Randy said. “But it’s hard to stop something when it’s already happening. We might be too late.” There are clear benefits to using AI in healthcare, especially when it offers workers the ability to spend a higher percentage of their time with patients. Caregivers themselves, not managers, are best positioned to figure out how to implement that technology.

WHAT DO AN Amazon warehouse in Breinigsville, a Disneyland laundromat in Anaheim, and a hospital in San Francisco have in common? Workers have always been monitored, but at a time when employers already have a great deal of power over employees, concern over new workplace surveillance methods shouldn’t be brushed off as mere paranoia. What exactly will our bosses do with all that data? And how did they get to own it in the first place?

Shoshana Zuboff conceived of “surveillance capitalism” a few years ago to help answer those questions. Surveillance capitalism is more than spyware technology, platforms, or management algorithms, even though it requires these to realize its full potential. Technology facilitates surveillance capitalism, just as it does all social behavior and economic activity. “If technology is bone



and muscle,” she writes, “surveillance capitalism is the soft tissue that binds the elements and directs them into action.”<sup>4</sup>

Surveillance capitalism emerges when major technology firms monetize the huge untapped surplus of user data generated by online activity. It was invented as a solution to the crisis after the dot-com bubble burst, which threatened the big tech firms. Google combined its sizable, though to that point unused, cache of data logs and computing power to create ad revenue that was bolstered by the company’s ability to predict a click-through rate. The success of this strategy encouraged Google to seek out new ways to extract even more data, including data that users wanted to be kept private, prompting a patent application for “Generating User Information for Use in Targeted Advertising.” It wasn’t until Google went public in 2004 that its sheer size and power became popularly known—its revenue had increased 3,590 percent since 2001. It had a new business model, and search capability was only a tiny part of it.

Online activity offers the ability to convert raw and relatively meaningless “data exhaust” into what Zuboff calls “behavioral surplus,” a vast reservoir of usable information about our activity. It’s the source code of our preferences, aspirations, fears, sexual kinks, personal secrets, geographic location, and, of course, work lives. Yet for most of Internet history, that data was useless to capitalism because no one knew quite what to do with it. Though it was there for the taking, no one knew it was worth grabbing.

Zuboff understands this wide extension of digitized data collection to be crucial to this new species of power.

Extension wants your bloodstream and your bed, your breakfast conversation, your commute, your run, your refrigerator, your parking space, your living room, your pancreas. . . . Surveillance capital wants more than your body’s coordinates in time and space. Now it violates the inner sanctum, as machines and their

algorithms decide the meaning of your sighs, blinks, and utterances; the pattern of your breathing and the movements of your eyes; the clench of your jaw muscles; the hitch in your voice; and the exclamation points in a Facebook post once offered in innocence and hope.<sup>5</sup>

The sheer ubiquity of digital life has slowly made a lay understanding of surveillance capitalism the new common sense, and we grudgingly acknowledge our complicity in a Faustian bargain—the exchange of unfettered communication and data for our private information. But we know far less about how data mining operates in workplaces.

The forces of surveillance capitalism have been intensified through their extension into the workplace. The paradigmatic example is that of Uber drivers. Driving people around the city is important. But the labor these “rideshare” drivers perform is far less valuable than the information they generate while driving—information Uber collects, analyzes, packages, and sells in its bid to become a global transportation logistics platform. What this means is that drivers are far from being compensated according to the real value they generate for Uber. It is often stated that data is the new gold. But unlike gold, data isn’t merely mined; it is produced. Generating data requires labor, yet it is not even recognizable as work. As a byproduct of work, it is produced simultaneously as the drivers’ stated mission, and is therefore unacknowledged as work specifically because it takes no extra time. The more Uber drivers drive, the more data and information they generate, the better the company is able to extract it and profit from it. If data is the new gold, the likes of Uber, Google, and Facebook are its new thieves.<sup>6</sup>

Watching what workers do as a way of governing the workplace is one thing. But anticipating what they will do even before they do it—and acting accordingly—is another. A new suite of AI tools combs through employees’ social media use, phone records,

and personal data in order to predict which employees are most likely to quit. Google especially has been lauded for dealing with turnover issues through AI. The company's former head of "people operations," Laszlo Bock, told *Harvard Business Review* that predictive analytics allowed Google to "get inside people's heads even before they know they might leave." This is important because, as the management consulting company McKinsey explains, it would be foolish to waste expensive pay increases or bonuses on those "who would have stayed put anyway."<sup>7</sup>

A stated promise of an AI-enhanced workplace is that it's fairer. Humans have biases, but computers are brutally honest, meritocratic, and blind to the things mere mortals get hung up on, like race, gender, and sexual preferences. But let's remember that technology's a social mirror, not a better lens. A mountain of academic research shows that humans program their biases right into their AI, algorithms, and platforms. The popular myth that "data doesn't lie" persists, and is often used for cover by bosses when they face protest. But in private, they seem to understand the dangers. According to a survey by Accenture, two-thirds of business leaders said they are "not very confident" that they are using new sources of workplace data in a "highly responsible way." And less than a third of employees say they have consented to employer use of workplace data, while more than half of employers say they do not even seek consent.

This lack of consent has occasionally prompted blowback. The transition to surveillance capitalism didn't draw blood, but it took hold of our bodies in other ways. And although most of us hardly knew it was happening before it was ubiquitous, it has not gone uncontested.

"For many of us, that kind of surveillance was the straw that broke the camel's back," said Jay O'Neal. Jay teaches eighth grade history in Kanawha County, West Virginia. He's referring to a fitness tracking app called Go365 that was the beginning of the end for what teachers at his school were willing to take. Year

after year, Jay and his coworkers attended public hearings where representatives of the Public Employees Insurance Agency told those assembled that their healthcare plans would get more expensive and less effective. In the winter of 2018 Jay learned the insurers had a new idea—workers would have to sign up for an app that counted their steps. The program coaxed—some might say coerced—employees into using an app that monitored their bodies, using a point system to incentivize exercise, sobriety, diet, and more. (If the app listed “rest” as an important component, the West Virginia teachers didn’t see it.) A Fitbit counted their daily footfalls and was able to cross-analyze those numbers with other data, such as weight and heart rate. Those who reached the set goal qualified for an Amazon gift card. Teachers who failed to accumulate three thousand points by the end of the school year would be billed twenty-five dollars per month until they reached their quota, and they would incur higher deductibles on their health insurance.

“We have a very unhealthy state,” Jay said, but he noted that most teachers felt neither their employer nor their insurers had their well-being in mind when they came up with this plan. “All it really did was piss us off.” Teachers faced onerous deductibles and coinsurance for everything from prescription drugs to childbirth. In that context, forced use of a “wellness” app was hardly going to go over well.

Apps like Go365 exploded after 2010, when the Affordable Care Act incentivized partnerships between large employers and wellness corporations to identify health risks associated with rising healthcare costs. Such apps might save companies money by shifting the costs of care onto sicker workers, but they don’t improve health.

The official teachers’ union didn’t raise much of a fuss. But for the rank and file—who hadn’t seen a raise in more than a decade, who worked summer jobs or moonlighted during the school year, who lived paycheck to paycheck—having their bodies surveilled

and monitored during work time and free time was too much. It was an unusual start to a nationwide strike wave. Go365 was just one more indignity that turned the rumblings of anger and frustration over unaffordable healthcare costs into a mass movement that roiled West Virginia, quickly becoming a statewide general strike. After rural Mingo County teachers led the way, reports trickled in from across the state. Donning the red bandannas that were worn by armed coal miners in the 1921 Battle of Blair Mountain against a company militia, teachers drew on their history as a militant union state. But in the end, their victories relied on their present-day allies, not fallen martyrs. Bus drivers refused to transport kids to school, and parents rose to the teachers' defense. Within a short amount of time, every single school in the state was closed. After nine days, teachers returned to work with a significant raise.

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THE US OFFICE of Technology Assessment first sounded the alarm on electronic workplace surveillance in 1987, a decade before the Internet became commonplace. The report considered that the simultaneous fall in unionization rates and the advances in workplace surveillance technologies could lead to “unfair or abusive monitoring.” The report states, “The uses of technology discussed so far are controversial because they point out a basic tension between an employer’s right to control or manage the work process and an employee’s right to autonomy, dignity, and privacy.”<sup>8</sup>

This report makes clear that workplace surveillance is facilitated not by technology, but by a weak and disorganized working class. Surveillance capitalism makes it easier to strip people of healthcare, but it was happening long before Fitbits. It also suggests that strengthening unions would be a good way to fight back. Militant strikers in West Virginia won a weeks-long battle for near-universal healthcare in 1946. The benefits had all been

guted in subsequent decades—not by technologists and their fancy algorithms, but by an alliance of politicians and employers.

Resistance to surveillance capitalism is only one way in which all of this monitoring might be counterproductive from the firm's point of view. A large 2015 study by MIT found that workers are more productive when bosses allow them the option to work outside the office unsupervised. The findings were even more significant when workers were also given control over their own time, with more latitude about when to log in to work and how often to report their activities to their direct supervisor.<sup>9</sup>

Karl Marx wrote in his 1844 *Manuscripts*: “In the end, an inhuman power rules over everything.” It is tempting to see surveillance capitalism as merely an inhuman force, partly because it is inhumane, and partly because we fetishize technology. But that's not quite right. Managerial control over workers is a human power that has been greatly enhanced by the technological advances discussed here. Those technologies have, in some cases, even erased the physical managers altogether, reinforcing a perspective that sees workplace hierarchies and status inequality as natural, the way things are and the way they've always been.

But in the examples above, there's not an inhuman force presiding over workers. In fact, there are two discernible regimes of control. On the one hand, managers push the working class harder and faster. On the other, white-collar professionals are manipulated, from a distance, through their personal data. These different forms of control are attempts to organize workers in a way appropriate to their class character.

It will be up to a conscious labor movement to make connections between these forms, which undoubtedly have similar goals, and this chapter offers some hints of that. Isabel fought the electronic whip in the Disneyland laundromat with a union. Randy Howell and Jay O'Neal fought wearable tracking devices with a union, and even the NBA players mobilized their collective power as workers. Nichole Calhoun tried to do the same at her

fulfillment center in Pennsylvania, and it's possible that unions at Amazon aren't as doomed as the company would like us to believe. Tech workers at all the major firms have turned toward union campaigns to raise these kinds of grievances. When I spoke to a member of the Tech Workers Collective, a labor organizing group within the tech industry, she told me, "Of course we want Google to be better. We spend a lot of time here after all. And that's no accident either."

I asked Beatriz, the union organizer who helped Isabel and her coworkers fight the electronic whip, if she thought there was any shot of beating the whip for good, and she was quiet for a pensive moment. "It's not about stopping the train," she said, "but more like, How do we drive it?" That is exactly the right question to ask of all technological developments, because control over technology is a social struggle as much as a technical problem. And it is always possible that that struggle will end in a way that enables ordinary workers to harness its power to a movement for justice. Nowhere is that possibility imagined more than in the realm of labor-saving robotics. The stated promise of workplace technology has usually been that it saves us time and can deliver us from a life of toil. It still could, and the next chapter examines the hopes, fears, and potential of realizing that dream.