MICHIGAN ROSS

A Unified Panopticon: Insights from a Study on Workplace Surveillance at Amazon and Uber

by

Sam Mikell (smikell)

Thesis Advisor: Ben Green (bzgreen)

Abstract

This paper offers a proposal for a thesis examining the relationship between organizational structure and workplace surveillance. Primarily, surveillance practices falling under a top-down control category will be considered. To draw conclusions about the relationship, an explicit case study will be conducted to comparatively analyze workplace surveillance practices at Amazon and Uber. The goal is to evaluate whether the surveillance practices deployed by these companies are mostly similar, implying the underlying organizational structure is agnostic of surveillance and a deeper overlap is the root, or mostly different, implying the underlying organizational structure could be important for crafting approaches to resisting surveillance and overcoming negative conditions.

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Introduction

While thinking about my thesis topic, I began with my curiosity surrounding democracy in the workplace and a worker-cooperative organizational structure. In accordance with my pursuit of a BS in Computer Science, I wanted to connect my business research with technology. Ultimately, I settled with Workplace Surveillance as a broad topic of interest to examine the history, causes, and effects of pernicious, invasive practices in the workplace.

Surveillance in the workplace has gained prominence over the past several years, particularly due to technological advances that make possible a detailed view of workers' behavior. Although technology broadens the scope of surveillance, its existence and underlying motivations pre-date our "age of information." As workplace surveillance continues to evolve, its impacts on the daily lives of workers grows, and with changes in our working environment (i.e. changes in organizational structure), surveillance is a key component of maintaining hierarchy and control throughout a standard organization. Rooted in my interest in democratizing the workplace, I am curious to examine the relationship between organizational structure and surveillance as well as its impact on worker organizing.

The Problem

Surveillance in the workplace is a divisive topic. Some advocate for it as a beneficial, mutual tradeoff to prevent things like "time-theft" or misuse of resources (Rosenbalt et al., 2014, p. 14). Information on surveillance is often withheld or not made clear to employees, which exacerbates trust issues (Ball, 2010, p. 91). Today, we see these issues of big technology companies surveilling their employees. Not only do these surveillance strategies yield negative effects for workers, but they are also used to undermine worker organizing efforts. This step diminishes the ability for employees to collectively advocate for improved conditions, including demands to rid the workplace of inhumane surveillance strategies.

The importance of the topic stems from the effects of surveillance on workers themselves: it damages worker wellbeing and removing surveillance can allow for furthering the voice of workers within organizations (Ball, 2010, p. 100). Different forms of workplace surveillance cause different detrimental effects. For example, in a warehouse setting such as at Amazon, workers have been subject to keeping up with "the Rate:" employees are expected to stay above their item-moving rate, which is tracked throughout their workday, and this leads to employees needing to decide, "should I use the bathroom or keeping working?" (AI Now, 2019). Beyond personal wellbeing, workplace surveillance can be damaging to trust and morale within an organization, and employees interacting with electronic devices intended to maximize their own production can foster feelings of distress (Attewell, 1985, p. 95).

In response to the conditions created by workplace surveillance, there have been many organizing efforts over the years, and listening to these workers is crucial for understanding the problem at hand. Recent unionization efforts by Amazon warehouse workers in the US and abroad. In just the past few weeks, warehouse workers in Bessemer, Alabama have engaged in

unprecedented organizing in their region (Press, 2020). Additionally for Amazon, there were global blackouts as a means of protest in over a dozen countries, and among the demands included ceasing the sale of surveillance tools and revoking terminations of employees who spoke out (Gurley, 2020). One particular case of the latter was from earlier this year, when an Amazon employee was speaking out about COVID-19 conditions, and Amazon's PR team plotted against his efforts and tried to frame him as "not smart or articulate" (Blest, 2020). Interestingly enough, there is increasing solidarity among the "white-collar" and "blue-collar" sides of these tech companies (as seen during Google's 2019 walkout), likely due to the fact they are both surveilled as a means of exploitation, albeit the surveillance may take different forms. Listening to organizing workers properly frames the surveillance problem and the necessity to address it.

Despite the negative effects of surveillance and organizing efforts by employees, big tech corporations continue to double down on surveillance practices: both conducting their own surveillance and building surveillance technologies. Amazon attempted to delay the NLRB hearings scheduled from unionizing efforts in Bessemer, Alabama (Greene, 2020). Additionally, there have been instances revealed where they appear to use careful language about how managers treat unions, such as their claim in a 2018 Whole Foods training video, "we are not anti-union, but we are not neutral either" (Menegus, 2018). Furthermore, Amazon was caught a few months ago with Pinkerton-esque job openings, intending to track "labor organizing threats," although the job postings were removed following public response (Franceschi-Bicchierai, 2020). Google also found itself in hot water earlier this month after being exposed for spying on internal organizers (Schiffer, 2020), and Microsoft continues to create surveillance tech, with new capabilities for companies to track employee behavior on Office365 remotely and report a

"productivity score" (Hern, 2020). This corporate behavior makes sense as surveillance is being

used to attain profit goals; however, there is a clear gap in an understanding of employee needs.

As such, the issue of surveillance is difficult to overcome under the present conditions, and

alternative methods of organizing could be necessary. While this paper will not directly outline

next steps for organizing, I hope to provide a meaningful analysis of how organizational

structure and surveillance are historically related, influence the set of possible organizing actions,

and show that addressing the underlying organizational structure itself will be a necessary

component of further progress.

Motivating Questions

To grapple with the surveillance issues in the workplace today, there are a few motivating questions:

How does organizational structure shape workplace surveillance?

From a higher level of abstraction, it is difficult to investigate the causes of workplace surveillance and the problems it creates. For this reason, a deeper examination of the connections with organizational structure is necessary. Within the context of organizational structure, supplementary questions arise: what are the key characteristics of an organization's structure that influence workplace surveillance, and does the extent to which employees are involved in the decision-making process make a difference?

How does the technology of the times influence workplace surveillance?

Additionally, influences on workplace surveillance exceed organizational structure, and the technology available to management impacts the ways that workplace surveillance manifests. Considering the rapid changes in technology since the start of the 20th century, the corresponding changes in workplace surveillance is interesting to explore. Have the underlying purposes remained the same, only to be amplified and realized in new ways by advanced technology?

How do organizational structure and technology affect resistance to workplace surveillance?

The actions of workers subject to surveillance are limited by external pressures that threaten their wellbeing and the level of internal awareness of pernicious practices. Organizational structure and technology both serve as influential factors in the set of steps workers can take to resist workplace activities they oppose. Defining this relationship is relevant to the problem at hand.

Research Question and Hypothesis

Given the time frame of this project, all three motivating questions would not be effectively researched. Instead, this paper will focus on answering, does organizational structure impact the types of workplace surveillance utilized by technology corporations? The other two points are important areas for comparison, but they will not be directly covered in this research. This topic is generally broad, so the approach will be to perform a comparative case study between workplace surveillance practices at Amazon and Uber. More specifically, the research question can be worded, how do the different organizational structures of Amazon (centralized warehouses) and Uber (distributed gig employees) influence their workplace surveillance practices? Prior to generating and analyzing results, the hypothesis is yes, organizational structure affects workplace surveillance methods and will yield significantly different practices at Amazon and Uber. The reasons for choosing Amazon and Uber will be explained in the Methodology section.

This paper aims to discover distinguishing features of Amazon's and Uber's respective workplace surveillance practices that are representative of their differing organizational structures. Aligned with present approaches to solutions, this paper hopes to yield insightful contributions to crafting and conceptualizing countermeasures to surveillance. Additionally, the goals of the paper are slightly expanded to address broader issues regarding the treatment of workers by large technology corporations, and how exploitation fuels the continued problem of surveillance. By dissecting the surveillance at Amazon and Uber, this paper hopes to discover important insights to spark future research into methods of resistance, by workers, against workplace surveillance and exploitation.

Literature Review

The general focus of the thesis is informed by the present literature and existing theoretical framing for surveillance in the workplace. Kristie Ball's key paper provides an informative overview of workplace surveillance, touching on various important elements. Figure 1 shows numerous techniques prevalent among workplace surveillance (Ball, 2010, p. 90). Since these methods are not extensively expanded upon in Ball's paper, they serve as further grounds for exploration from a historical perspective. Many of these methods are only applicable given certain organizational structures. For example, a distributed workforce of independent contractors conducting deliveries would not best be suited for surveillance via keystrokes or telephone calls. Additionally, important research can be done surrounding how these techniques have manifested over time in relation to the organizational structure. Using telephone calls again, this method of data collection arguably arose from the development of an organizational structure present within a call-center, where management is particularly keen on how employees are communicating over the phone to customers. Importantly, technological progress is also an element of changing surveillance techniques.

Ball also outlines the intentions of workplace surveillance (as previously mentioned) and discusses claims of mediating negative effects. Among these mediation strategies include task design, supervisory style, additional feedback channels, employee predispositions, and broader organizational factors (Ball, 2010, p. 94-96). Most of these criteria take an approach of modifying procedural elements of an organization and seldomly addresses the negative effects by looking at the underlying structure; however, in the final point, Ball brings up the work of Paul Attewell to touch on those broader organizational factors.

Attewell's 1985 paper lays out various theories regarding workplace surveillance, many of which could be expanded upon given technological advancements and changes in organizational structures in recent years. Similar to Ball's (2010) discussions on social processes influence surveillance (p. 96), Attewell's antecedent work mentions organizational culture (Attewell, 1985, p. 88). Both elements are critical to understanding surveillance; however, the primary focus of my thesis will be to look at other structural features of an organization such as the types of jobs, centralization of jobs, and hierarchical management. Importantly, Attewell's work identifies several areas in which I would like to expand upon. Briefly, Attewell gives a historical perspective for corporations and surveillance practices, citing a study done where firms with adversarial labor relations ended up using surveillance for further exploitation whereas firms with non-adversarial relations consulted employees on the issue and did not use surveillance to realize a sweatshop production style (1985, p. 88). This relationship between the firm's structure and its employees is a key element to examine going forward and raises a good question as to whether this trend still holds today.

Additionally, Attewell describes two theoretical perspectives and posits that the desire to surveil white-collar or clerical workers transcends technological capabilities. The neo-Marxist perspective views surveillance as too good to pass up for management as a tool for exploitation, and the primary method of countering surveillance needs to be through labor pressure (Attewell, 1985, p. 88). "Contingency Theory" claims that clerical work will only face increased levels of surveillance when the employees are "central to profitability" (Attewell, 1985, p. 91). Finally, Attewell lays out his claim that despite the appearance of increased surveillance of clerical workers due to new technologies, the information gathered would be the same using prior methods of surveillance, and the desire to implement speed-up monitoring is dependent on the

same principles as described in "Contingency Theory" as well as other factors as outlined in Figure 2 (Attewell, 1985, p. 97). Ultimately, Attewell's final model in Figure 2 convey that the rise of technology will not directly influence the extent to which speed-up monitoring is perpetuated in the workplace, and this leaves good room to explore further.

Much has changed in the 35 years since Attewell's paper, and while the theories outlined are important, new developments in the workplace and technology could potentially counter some of the claims. The theories described tie together important elements to analyze: organizational structure, labor relations, methods of resistance, and history. The dual notion of surveillance being "too good to pass up" and its prominence when certain jobs are central to profitability can be applied elsewhere. With the rise of the gig economy, these theories could be expanded to encompass a decentralized workforce, something that's become a supplement or substitute for many people working clerical jobs. It's also important to note observations that new technologies make new forms of monitoring possible and prevalent (Rosenbalt et al., 2014, p. 2). An important question to ask of this, though, is whether the new technologies are bringing new purposes to surveillance or amplifying existing uses. As Attewell's points work out, new technologies were only theorized to amplify. Approaching this space from a historical perspective is important to see whether these theories still hold, and generally in the literature, there is a lack of analyses that consider temporal change (Rosenblat et al., 2014, p. 15).

As part of her critique of surveillance, Ball mentions the methods of resistance in a generalized manner (2010): finding a "gap" in the relationship between the employees being surveilled and the managers doing the surveilling (p. 99-101). This "gap" is a primary method of resistance as employees can choose to enter these gaps as a form of non-participation. For example, if a method of surveillance involves tracking internal Slack messages, workers would

avoid sending messages to each other or send messages inconsistently and inaccurately to mess with the monitoring expectations. Ball directly discusses another example (2010), blog websites for employees to display negative feelings about employers (p. 94). As these sites would be beyond the reach of an organization's surveillance, they, too, are seen as a "gap" in which employees can resist. Notably, since the writing of this paper, surveillance tactics have involved corporate surveillance of external platforms to inhibit employees speaking out. Thus, there is room here for exploring how these gaps have changed over time in conjunction with an organization's structural setting.

Theoretical Framework

To be used in the comparative analysis case studies, the theoretical framework will be adapted from existing theories in the literature as previously described. The key vector of comparison will be organizational structure and workplace surveillance practices across different firms. Although the thesis will focus on the relationship between organizational structure and surveillance techniques and how they influence each other, the technological element is important to tie in as discussed in various pieces of the literature. Attewell's work supported evidence that technology should not be a factor in determining whether surveillance is used; however, due to the more limited scope compared to the motivating questions, this cannot be as effectively explored as in this research's cases for comparisons. While researching different forms of surveillance, Ball's general categorizations, shown in Figure 1, will be important considerations. A subset will be explicitly used for the discovery process, investigating different elements of surveillance at Amazon and Uber. In particular, surveillance related to performance and behavior will be the most important for understanding what workers are subjected to at Amazon and Uber. These categories and their sub-forms can be seen in Figure 3.

Methodology

To address the broader motivating question about the relationship between organizational structure and surveillance, Amazon and Uber were selected to conduct a narrow and descriptive study. Amazon and Uber were chosen due to their clear differences in organizational structure and relevance to workplace surveillance. Amazon's warehouses and Uber's app platform will be analyzed, and these settings are direct opposites in terms of organizational structure: Amazon's warehouses are centralized with explicit, in-person management, and Uber's app platform is made up of a distributed driver force with elements of remote management. Amazon and Uber have also been relevant to recent surveillance news, which will be touched on later in this paper. To summarize, Amazon employees in Bessemer, Alabama attempted a unionization vote due to harmful working conditions in the warehouse, in which surveillance is a key perpetrator. At the end of last year, Uber drove a fierce campaign with Proposition 22 in California to dismantle prior legislation classifying drivers as employees, and surveillance played a role in Uber's success as well as drivers' complaints. These characteristics set up Amazon and Uber to be prime targets for surveillance analysis and subjects for testing the hypothesis.

The primary tool for research will be a case study, conducting a comparative analysis between the two firms and their associated surveillance practices. There are three inter-related metrics for analyzing a method of surveillance: context, execution, and purpose. Context is the environment and conditions in which surveillance is conducted. Organizational structure is a large factor in determining the context for surveillance practices, so context is extremely different between Amazon and Uber. Execution is the explicit actions taken by managers, owners, or their technology to gather data, nudge employees, or monitor. Between Amazon and Uber, execution is expected to mostly differ due to different contexts, but occasional overlap

would not damage the validity of the hypothesis. Purpose is the underlying reason for the method of surveillance, and it could be explicitly known or inferred based on how the method is executed. Differences in purpose are to be expected between Amazon and Uber, and if there are many overlapping similarities with purpose, the hypothesis will be swiftly rejected. As an example of what this breakdown would look like, we can look to a surveillance method of Amazon that will be covered later in the paper: camera monitoring. The context for this method of surveillance is Amazon's centralized warehouse. Camera monitoring is executed by having them placed across the warehouse, covering many open spaces. Some purposes of camera monitoring include theft prevention and behavioral monitoring done by managers.

Several existing research documents, press releases, and interviews will be leveraged to gather information on surveillance practices for Amazon and Uber. Although present corporation-focused surveillance research covers Amazon more than Uber, there is a healthy amount of information available for both firms, which should satisfy the needs of this study. Once information on surveillance methods is collected, an explicit comparison between associated practices at Amazon and Uber will be done, emphasizing execution and purpose. Based on those results, there will be a discussion on their meaning and implications for surveillance research now and in the future.

Results

  Based on various articles, reports, and interviews on practices at Amazon and Uber, there is a complete puzzle set regarding the levels of workplace surveillance employed at each firm.

Amazon's Centralized Warehouse Surveillance

  From the moment warehouse employees enter the building, they are being watched by Amazon's surveillance system. After ensuring the disposal of personal belongings, Amazon's "extensive network of security cameras" track employee movement (Hanley and Hubbard, 2020, p. 8). Additionally, since the onset of the COVID-19 pandemic, this surveillance network includes a series of "Distance Assistants," claiming to prevent workers from being within six feet of each other by computationally tracking, measuring, and warning employees of their walking behaviors (Vincent, 2020). Furthermore, warehouse cameras serve as a function on Amazon's union-busting utility-belt: as employees congregate within the warehouse, managers are ready to break up clusters to keep workers on task, mitigating natural conversations about shared experiences and conditions (Hanley and Hubbard, 2020, p. 12).

  Beyond warehouse-wide camera systems, Amazon utilizes direct forms of surveillance on a per-employee basis. The primary method of delivery for this form of surveillance is through item scanners held by each employee. Tasks are directly sent to these handheld devices, and employees are expected to follow the explicit instructions and keep up with the expected rate (Guendelsberger, 2019 and Kelly, 2016). Within the scanners, an employee's location is tracked throughout their working hours, and task completion rates and "Time Off Task" (TOT) are logged. Failure to minimize TOT, adhere to the instructions given for a task, or maintain a rate above the expected threshold may lead to sudden, automatic termination (Hanley and Hubbard, 2020, p. 10). While task completion rates are strictly enforced, the rates change day-to-day, and

employees are unaware of what the rate will be until they are notified of falling below that rate (Hanley and Hubbard, 2020, p. 12). By several accounts, these practices cause great distress for employees (Hanley and Hubbard, 2020, p. 11). Despite this, Amazon continues to expand their invasive surveillance efforts, and in the near future, patented wristbands are likely to be seen, which track hand movements of employees and deliver vibrations to correct employee movement toward an algorithmically pre-determined optimal set of motions (Boyle, 2018).

Uber's Distributed Gig Surveillance

From the moment Uber drivers open the app on their phones, they are being watched by Uber's surveillance system. In recent years, facial recognition technology has been used for verification purposes, but drivers have called for its removal due to inaccurate failures leading to job losses (Macdonald, 2021). The facial recognition system is not entirely accurate, and it disproportionately affects underrepresented groups (Goled, 2021). Beyond ID screenings, drivers are subject to consistent GPS location tracking throughout app usage as well as logging of driving habits such as speed, acceleration rates, and hard stops (Jamil, 2020, pp. 5, 6). The driver's cell phone is the center of these surveillance elements, and they also receive their direct instructions through the phone. Uber algorithmically determines pickups for drivers and expects them to follow the optimized set of directions for the ride (Jamil, 2020, p. 3). This algorithm comes together with rider reviews and aforementioned surveillance statistics to compile performance evaluations for drivers. The performance evaluation process is not transparent, and sudden terminations via electronic notifications are not uncommon, which places additional stress on drivers (Möhlmann and Henfridsson, 2019).

Differences

Looking at Amazon and Uber's respective practices, certain differences can be noted. In Amazon warehouses, management interfering with employee communications is unique to the setting when compared with Uber. Intuitively, this action makes sense since managers can have direct effects on the physical actions of workers with respect to each other in a common space. This management interference also aligns with repeated anti-union activities pursued by Amazon (Semel, 2021). Although managers intend to keep workers "on task," the interjection clearly prevents workers from discussing shared experiences while in the workplace, which hinders processes of building camaraderie and organizing. On the other hand, Uber does not have direct physical interventions with employee discussions since their workforce is distributed, and drivers cannot as organically consolidate to discuss their conditions.

The other primary difference between Amazon and Uber's practices is the method of enabling various forms of surveillance. For Amazon, company-owned hardware (such as the handheld item scanners) are the primary channels for surveilling Amazon warehouse workers. This gives Amazon a unique level of control over hardware details that can more precisely target the firm's surveillance goals. For Uber, driver-owned hardware (their personal cell phones) is the primary channel for surveillance. While Uber is capable of gathering large amounts of data and retrieving granular details of a driver's behavior in-app, the company is more limited in going beyond the software capabilities of surveillance.

These categories of difference are representative of the differing organizational structures of Amazon and Uber. The centralized setting of an Amazon warehouse is conducive to physical micromanaging and company hardware; whereas, Uber's distributed workforce innately relies on personal property. Nonetheless, there ends up being far more similarities than differences.

Several surveillance practices at Amazon and Uber are similar in their purpose and execution.

➢ **Task Completion and Lack of Transparency:**

Tasks completed are tracked by some mechanism for both Amazon and Uber, and expectations for rates of task completion or performance evaluation are hidden from the workers. The handheld item scanners in Amazon warehouses are also used for tracking task completion, and workers are only aware of their required rates once they receive notifications of failing to meet it. Performance evaluations at Uber are similarly non-transparent, based on an abstract algorithm that takes into account a driver's adherence to instructions, time spent per task, and rider reviews. In both companies, workers are burdened with uncertainty regarding their employer expectations.

➢ **Active Location Tracking:**

Inside warehouses or personal vehicles, workers at both companies experience location tracking as a means of monitoring behavior and performance. Item scanners within Amazon warehouses alongside the broad system of cameras are used to document the movement of employees, their locations with respect to tasks, and time off task. GPS data supports Uber's efforts to track drivers, seeing whether they adhere to predetermined directions and other metadata regarding car speed, acceleration rates, and more.

➢ **Explicit Predetermined Instructions:**

With each task assigned to a warehouse employee or driver, there are explicit instructions that are algorithmically predetermined: either designated paths to getting to different aisles in the warehouse or optimized routes for driving. Amazon delivers these

explicit task instructions through the handheld item scanners, and Uber delivers associated directions to the driver's phone (in-app). Both types of workers are also expected to adhere to these instructions; otherwise, penalties may be incurred.

➢ **Monitoring Behavior with Cameras and Devices:**

Surveillance cameras are highly available to monitor employees within Amazon warehouses. These cameras are used primarily to ensure employees in-view are on-task. Similarly with Uber drivers, facial recognition technology in the phone camera is used for monitoring identification requirements, and the phone is used for logging metadata on driving behavior to keep in-line with Uber's vague standards.

➢ **Meeting Protocols:**

Amazon and Uber both use surveillance to ensure certain protocols are met. Full body screening is used by Amazon to prevent theft by warehouse workers, and surveillance footage is shown on TVs to set an example of employees who are caught stealing (Luckerson, 2016). Similarly, Uber checks driver identification via facial recognition. In both cases, the firms have protocols in mind for employees to follow, and surveillance is used to physically verify employees are following the given protocol.

➢ **Automated Electronic Termination:**

While termination in and of itself is not necessarily a form of surveillance, the process is informed by the surveillance practices used at Amazon and Uber. Firing workers is highly dependent on the data gathered through surveillance. By comparing this data with performance metrics or target thresholds, which is also non-transparent, both firms use an automated mechanism for many cases of termination.

Figure 4 depicts a summary of these similarities and differences.

Discussion

Given the results, the hypothesis can be rejected: Amazon's and Uber's workplace surveillance practices do not significantly differ alongside their opposing organizational structures. Amazon's centralized warehouses and Uber's distributed gig workers are subjected to much of the same methods of surveillance. This is surprising considering much of the existing literature frames surveillance as a key problem within the modern corporation; surveillance is meant to be addressable on a corporation-by-corporation basis. Understanding the reason for strong similarities between Amazon and Uber requires revisiting surveillance literature, expanding this paper's theoretical scope, and exploring deeper overlaps in organizational purpose.

Incorporating Overlooked Theory

Christian Fuchs's "Political Economy and Surveillance Theory" is the paper that will inform an analysis of the similarities between workplace surveillance at Amazon and Uber. The core element of Fuchs's paper is the viewing surveillance through a Marxist lens and relating surveillance to the cycle of capital accumulation. This cycle, represented in Figure 5, is a fundamental Marxian concept for understanding capitalism, and Fuchs describes it well in the paper. In the process of capital accumulation, Fuchs states, "surveillance is the central method of control and discipline" (7). By Fuchs's analysis, surveillance is an important gear in the cycle of accumulation. While Fuchs discusses several categories of surveillance, the relevant forms are "Workplace surveillance," surveilling the labor force in the workplace, and "Workforce surveillance," surveilling the productivity of workers (8). In Figure 5, these forms of surveillance fall under the sphere of production, labeled *P*, which signifies the purpose of these types of surveillance: assure the means of productions are utilized for the purposes of the owners' capital

interests. As a brief aside, the terminology "workplace surveillance" or "management surveillance" has been used throughout this thesis, and this usage encompasses both terms described by Fuchs for simplicity. Fuchs goes on to define these types of surveillance with more detail. Workplace surveillance involves "the surveillance of spaces where work is conducted to ensure that workers conduct the duties that have been assigned to them" (9). This form of surveillance encompasses activities such as Amazon item scanners notifying employees when they fall below that day's rate or the looming threat of termination when drivers deviate from Uber's predetermined path. Workforce surveillance is "the surveillance of activities of employees" (9). Measurements of productivity, performance, and speed are relevant to this form of surveillance, which, again, can be seen in Amazon and Uber's respective task completion tracking as well as location tracking. These forms of surveillance, as Fuchs describes, are central to the sphere of production in any capitalist corporation. In both Amazon and Uber, as described in the results, these forms of surveillance are prominent and are used to meet the goals capital accumulation.

With Fuch's understanding of surveillance as a tool for capital accumulation, the similarities between Amazon's and Uber's surveillance practices can be further explained. Both are capitalist corporations and, by their definition, are committed to maximizing shareholder value (i.e. profits, the accumulation of capital). The model of capital accumulation is inherent to the capitalist corporation, which is the primary underlying similarity between Amazon and Uber.

Implications of Similarities between Amazon and Uber

As seen in different methods of surveillance at both Amazon and Uber, their purposes match what Fuchs is describing with capital accumulation and Workplace/Workforce surveillance. Each practice gathers data or nudges employees to keep in line with productivity

expectations in the respective firm's attempt to maximize surplus value generated by the worker. This is an exploitative process, natural to the capitalist corporation. Fuchs also mentions, "surveillance as an aspect of the struggle between labour and capital," quoted from a separate paper and signifying the role of surveillance as a check on the conflicting class interests in the workplace (3). In both Amazon and Uber, surveillance is an important tool for fostering capital accumulation according to predetermined standards and maintaining a submissive class hierarchy in the modern corporation.

The underlying similarities in the goals between Amazon and Uber go deeper than their organizational structures. Based on this theoretical approach, any capitalist corporation would employ similar surveillance tactics, altered to fit the context but ultimately for the same purposes. Surveillance in these settings, as seen in Amazon and Uber, is used to bolster performance and maximize production, utilizing algorithms to determine optimal task completion and more as previously described. Surveillance is a tool for the capitalist corporation.

Existing literature on surveillance aims to address the associated negative effects on workers; however, surveillance is often framed as the key problem, which is arguably incorrect. Surveillance is a symptom of the fundamental characteristics of corporations under capitalism. With an enhanced theoretical understanding of the similarities between Amazon and Uber, addressing surveillance and its side effects must account for the origin: capital accumulation. If surveillance were to vanish from workplaces, the goals of the capitalist corporation would remain. Although a powerful tool would be lost in surveillance, the underlying issues cannot go unnoticed.

Limitations

  This paper is largely based on a qualitative and theoretical analysis of descriptive features of workplace surveillance. While the insights discovered throughout the process have meaning, the evidence is not as strong as it could be. Reaching a conclusion on whether or not organizational structure influences workplace surveillance is not easy to achieve quantitatively. The lack of empirical, quantitative results dampens the arguments made in the discussion portion of the paper; however, the theoretical analysis in and of itself cannot be discounted. Additionally, only two companies were studied, both of which come from the same broader industry. Amazon and Uber are cornerstone corporations in the present tech industry, and while their organizational structures differ greatly, similarities in surveillance practices could be linked to their shared industry. Future research into quantitative evaluations of surveillance comparisons, expanding the number of companies analyzed, and drawing comparisons across industry and historical time period would be beneficial for further conclusions on organizational structure and surveillance.

Future Research

  Beyond accounting for current limitations, further research into addressing workplace surveillance should tackle approaches to solutions. As outlined in the discussion section, this paper's results imply that surveillance should be framed as a symptom of a deeper problem rather than the end-all-be-all. Existing solutions primarily consist of legislation that limits surveillance capabilities, regulations corporate power, and strengthening unions (Hanley and Hubbard, 2020, pp. 14-19). These solutions, in the abstract, are generalized and do not explicitly treat surveillance as a problem rather than a symptom. Despite this, these solutions are extremely

difficult to achieve as they require mass collective action and overcoming corporate power and propaganda in politics and society.

The latter two types of solutions are relevant to recent actions by Uber and Amazon, which showcase the difficulty of these approaches. To counteract support for former California legislation classifying Uber drivers as employees, Uber enabled a massive campaign to overturn the measure via the 2020 Proposition 22 in California vote. As part of this campaign, Uber coerced drivers into showing support for the campaign by requiring the usage of Yes on Prop 22 labeling, and the app bombarded users with notifications in support of Prop 22 (Ongweso Jr., 2020 and Press, 2020). Uber's propagandistic campaign yielded great success, and, written into the law, Prop 22 requires a seven-eighths legislature approval in order to be modified (Press, 2020). This is emblematic of the difficult road ahead for gig workers to support and encourage a vote for regulations on their employers. Similarly, Amazon ran a widely public effort against the unionization of employees in Bessemer, Alabama. Amazon used propaganda, in a similar way to Uber, to encourage workers to vote against unionization (Thornton, 2021). The company went as far as creating fake social media accounts in an attempt to convince broader society that working at Amazon was not as horrible as employees described (Hao, 2021). At the same time, Amazon (initially) publicly denied accounts of Amazon workers regarding their inability to take bathroom breaks in-warehouse or while on delivery runs, resulting in urinating or defecating in automobiles, diapers, or on the warehouse floor (Picchi, 2021 and Liao, 2018). Nonetheless, the unionization vote at Amazon's Bessemer warehouse failed, and while there are ongoing investigations into the legality of Amazon's actions during the vote, the fight for warehouse unions is another long road ahead (Press, 2020). Although both recent pushes for worker

improvements could be achieved through federal legislation, the process would, again, require mass mobilization and convincing of politicians to even consider a vote.

In both companies, we see a large technology firm strongly opposed to workers empowering themselves and fighting for better conditions and benefits. Existing attempts at solutions could help workers see better conditions in the future; however, there is an immediate need for relief, and recent attempts show that most general solutions will take far too long to realize. So where could the fight go from here? New strategies that can improve working conditions and job statuses for drivers and warehouse workers alike is an important focus for surveillance research and dialogue with workers and organizers. Building a collective effort is vital but long-term, but exploring smaller-scale acts of resistance and strikes could be more viable.

Conclusion

Amazon and Uber mostly employ two distinct groups of workers: centralized warehouse workers and decentralized gig drivers. Yet, methods of surveillance experienced by these workers are largely the same. As capitalist corporations, Amazon and Uber share common goals for capital accumulation, and both groups of workers have conflicting goals for better working conditions and compensation, characteristic of the struggle between labor and capital. With this, surveillance can be viewed as embedded within the capitalist corporation, especially in the cases of Amazon and Uber. Working toward improvements for workers and dismantling surveillance requires an acknowledgement of the strong roots that these corporations grow from. While more research into methods of surveillance across different corporations is necessary, this paper yields an important analysis for contextualizing and crafting the fight of the future.

The goal of this paper was to contribute to questions regarding workplace surveillance, provide a case study on differences and similarities between corporations with different organizational structures, and support further research into alternative approaches to "solving" surveillance. Hopefully, a deeper understanding of corporate similarity can inform future work, but there is much left to be researched with regards to workplace surveillance and how employees can resist and overcome the negative effects.
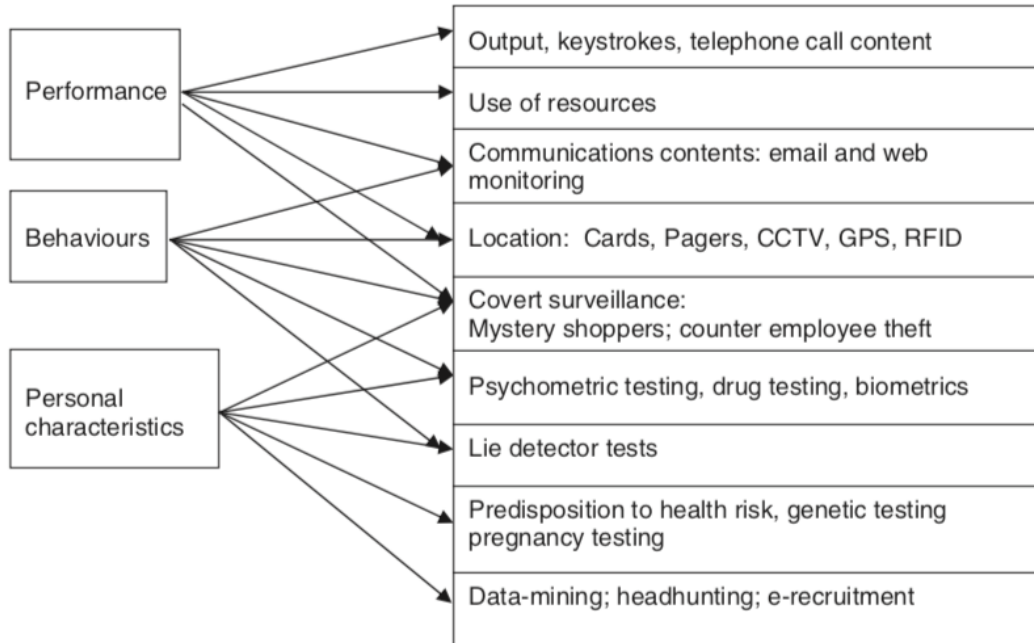
Figures

Figure 1

Figure 2

Table 2. Synthetic Model of Work Monitoring & Work Pace

Environment/Context	* Mature product market.
	Growing or de-mature product market.
	* Mature process technology.
	Immature/dynamic process technology generating productivity growth.
	* Routine clerical costs constitute a high % of total costs.
	Routine clerical costs not central factor in profitability.
Strategy	* Price competition via cost-cutting.
	Differentiation via service/quality.
	Rapid Growth.
Culture/Managerial Philosophy	* Theory X or Taylorist.
	Theory Y or Human Relations.
Technical	* emphasis on speed/quantity.
	emphasis on quality/error rate.
	* individual pooled production.
	team-work or inter-dependent work.
Employee Resistance	* can manage with high turnover.
	high turnover a training/cost problem.
	* unionization not a problem or threat.
	unionization in place or imminent.
	* abundant labor supply.
	tight, competitive labor supply.

The asterisks mark the particular features which, in combination, are associated with the use of monitoring to intensify work pace. Those features which are unmarked would tend to militate against the use of monitoring for speed-ups.
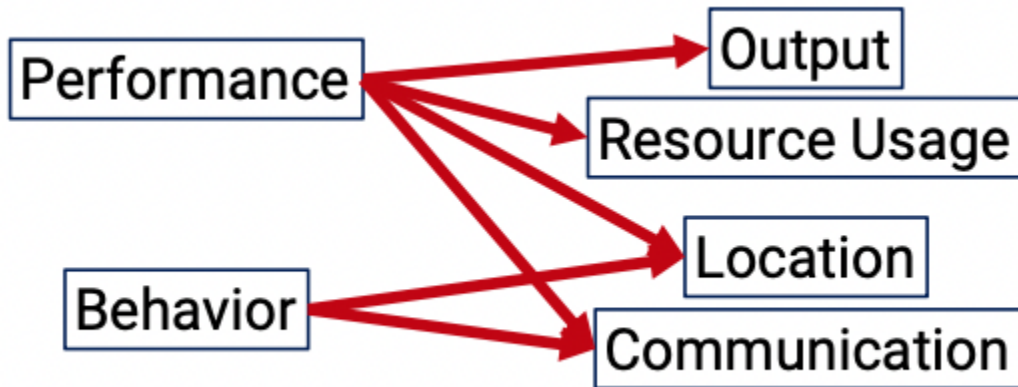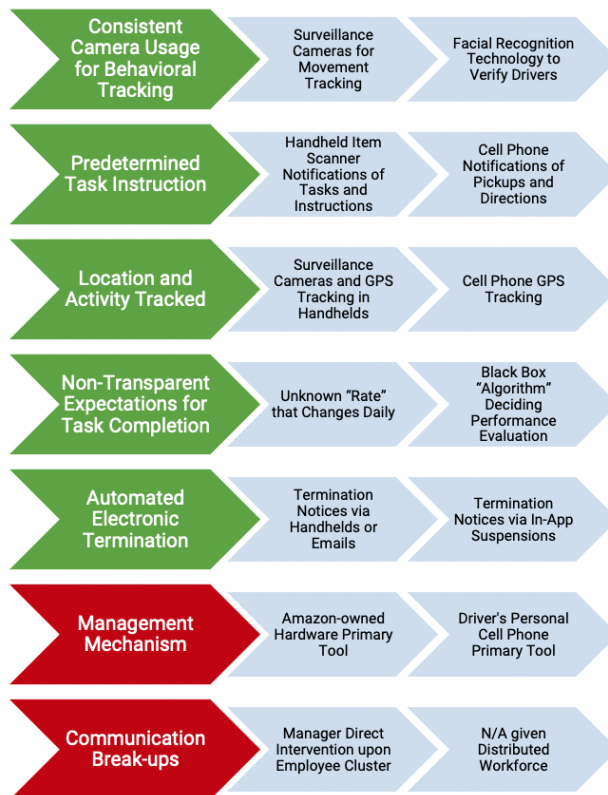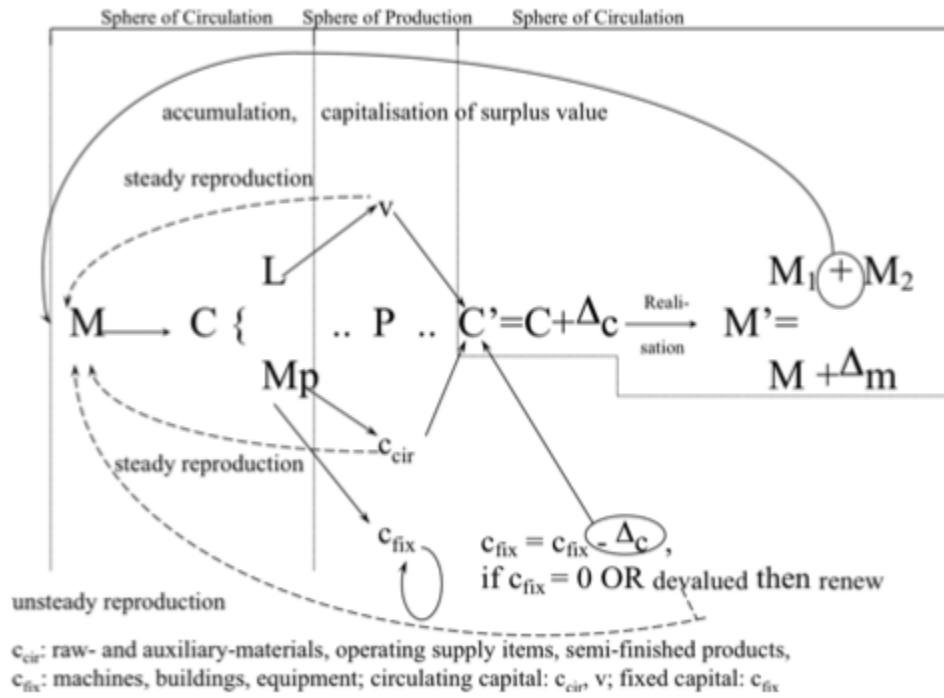
Figure 3

Figure 4

Figure 5

Sphere of Circulation   Sphere of Production   Sphere of Circulation

accumulation,   capitalisation of surplus value

steady reproduction

$$\text{v}$$

$$\text{L}$$

$$\text{M} \longrightarrow \text{C} \{ \quad .. \text{P} .. \quad \text{C'}=\text{C}+\Delta_{\text{c}} \xrightarrow[\text{sation}]{\text{Reali-}} \text{M'}=$$

$$\text{M}_1 + \text{M}_2$$

$$\text{Mp}$$

$$\text{M} + \Delta_{\text{m}}$$

steady reproduction

$$\text{c}_{\text{cir}}$$

$$\text{c}_{\text{fix}}$$

$$\text{c}_{\text{fix}} = \text{c}_{\text{fix}} - \Delta_{\text{c}},$$
$$\text{if } \text{c}_{\text{fix}} = 0 \text{ OR devalued then renew}$$

unsteady reproduction

c_{cir}: raw- and auxiliary-materials, operating supply items, semi-finished products,
c_{fix}: machines, buildings, equipment; circulating capital: c_{cir}, v; fixed capital: c_{fix}

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