

Delivering Solidarity:
Platform Architecture and Collective Contention in China's Platform Economy

Forthcoming in *American Sociological Review*

Ya-Wen Lei
Department of Sociology
yawenlei@fas.harvard.edu

This study examines how and when labor control and management leads to collective resistance in China's food-delivery platform economy. I develop the concept of "platform architecture" to differentiate and examine the technological, legal, and organizational aspects of labor control and management and their relationship with labor contention. Analyzing 68 in-depth interviews, ethnographic data, and 87 cases of strikes and protests, I compare the platform architecture of service platforms and gig platforms and examine the relationship between their respective architecture and labor contention. I argue that specific differences in platform architecture diffuse or heighten collective contention. Within the service platform, although technological control and management generates work dissatisfaction, the legal and organizational dimensions of the platform architecture contain grievances and reduce the appeal of, and spaces for, collective contention. Conversely, within the gig platform, all three dimensions of platform architecture reinforce one another, escalating grievances, enhancing the appeal of collective contention, and providing spaces for mobilizing solidarity and collective action. As a result, gig platform couriers are more likely to consider their work relations exploitative and to mobilize contention, despite the fact that they face higher barriers to collective action due to the atomization of their work.

INTRODUCTION

The platform economy is on the rise globally. Following Martin Kenney and John Zysman (2016), I use the term “platform economy” to refer to economic activities facilitated and enabled by digital platforms—multi-sided digital frameworks that shape the terms by which various actors interact based on the application of algorithms. With the rise of the platform economy, concerns about its socioeconomic consequences have arisen as well (Kenney and Zysman 2016; Schor and Attwood-Charles 2017; Vallas 2017).

Of particular scholarly interest have been the platform economy’s modes of labor control and management, especially algorithmic control and management—a diverse set of technological tools and techniques that rely on data collection and algorithms to manage workforces (Lee et al. 2015; Rosenblat and Stark 2016). Scholars have used the term “digital-Taylorism” to emphasize how control has been reconfigured by the digital transformation of work. Unlike the earlier digital Taylorization of white-collar work, however, algorithmic control and management in the platform economy involves not only monitoring and evaluating work performance, but also automatically assigning tasks based on performance metrics.

As labor control and management continues to evolve in the platform economy, long-standing questions arise about the relationship between labor control and resistance. Commenting on evolving modes of labor control, Richard Hyman (1987) noted: “The emergent pattern of labour control contains its own emergent contradiction. The new disciplines imposed on workers can be expected to provoke unpredictable and disruptive forms of revolt” (p.52). Nonetheless, as Michael Burawoy’s (1982) work suggests, capitalists might still be able to manufacture consent or at least compromise. Considering the indeterminate relationship between labor control and resistance, Hyman (1987) commented that whether labor itself can move from “reactive tactics to a concerted strategy” is a critical question” (p.52).

Scholars have begun to analyze the relationship between labor control and resistance in the platform economy. On the one hand, research suggests collective resistance is unlikely to occur due to the often atomized nature of the work (Collier, Dubal, and Carter 2017; Webster 2016). In addition, platform companies have endeavored to obfuscate the precarious and exploitative nature of work (Rosenblat and Stark 2016). They also induce workers’ participation in the

“game” of work by integrating certain dimensions of “gamification”—the use of game design in non-game contexts—in their platforms (Deterding 2019). On the other hand, research shows emerging labor activism and solidarity in the platform economy. Tassinari and Maccarrone (2017, 2020) demonstrate that algorithmic control leads to shared grievances among couriers and collective action against platforms in Europe. And yet, scholars also suggest that research on labor control and management should better attend to its multidimensionality. Veen, Barratt, and Goods (2019) argue that labor control is multifaceted and irreducible to algorithmic management; similarly, Moore and Joyce (2019) suggest managerialism should be viewed as sets of ideational and institutional forms that are neither static nor homogenous.

Building upon the above insights, this study asks how and when labor control and management leads to collective resistance in the platform economy. I develop the concept of “platform architecture” in order to examine the multidimensional—technological, legal, and organizational—aspects of control and management in the labor process and the variable relationship between these aspects. To be sure, factors and processes beyond the labor process, such as state intervention and the social reproduction of labor, can influence labor control and management and labor contention (Burawoy 1985; Collier et al. 2017). Nevertheless, rather than simultaneously analyzing all of the factors and processes, this study focuses on variable configurations of labor control and management and their relationship with collective contention.

Empirically, the article examines varying patterns of labor contention in China’s food-delivery platform economy. China’s online food delivery market—the largest in the world—began to emerge in 2009 and has expanded vastly since around 2015. In 2017, the market had over 305 million consumers and a size of 297 billion yuan (US\$46.5 billion).¹ Consistent with what economists have observed about the platform economy (Tirole 2017), China’s online food delivery market is highly concentrated, dominated by two powerful platform companies, Meituan and Ele.me. Together, these two companies had a combined 5.7 million registered couriers in 2018. With the expansion of the food-delivery platform economy, strikes and protests organized by couriers have also emerged, despite various barriers to collective action. As Figure 1 shows, collective action has occurred in numerous cities in China.

¹ <http://www.199it.com/archives/823693.html>, retrieved July 27, 2020.

[Figure 1]

Notably, the rise of the platform economy has taken place while the country's economic growth rates have slowed down. The state views the platform economy as a new engine of growth and a reservoir to absorb surplus labor.² Thus far, regulations and state intervention have focused on food safety, consumer protection, and traffic safety. As strikes and protests began to emerge, the All-China Federation of Trade Unions (ACFTU), an organ of and subordinate to the Party-state, announced that it would accelerate building trade unions for platform workers—yet, to date, this plan has hardly been implemented.³ In short, the Chinese state has not tackled new labor and market competition problems that have emerged in the platform economy.

Previous literature suggests employers want workers to be both dependable and disposable (Hyman 1987). Indeed, Meituan and Ele.me both operate two types of platforms—service platforms and gig platforms—to balance security and the flexibility of workforce (Kalleberg 2009). Service platform couriers (hereafter, SPCs) and gig platform couriers (hereafter, GPCs) both pick up food from a restaurant and deliver it to a customer. However, SPCs are full-time employees who work for a service station—an actual physical station used to coordinate within a locality. In comparison, GPCs can decide when they want to work and do not share a workplace.

Essentially, the service platform provides the two companies with a stable workforce, while the gig platform provides them with a flexible workforce. These different purposes explain why service platforms and gig platforms have distinct platform architectures and exercise technological, legal, and organizational control and management differently. Although economic activities under both service and gig platforms are digitally mediated, service platforms rely less on technological control and management; have labor contracts governing work relations; and emphasize regular supervisory interactions between workers and human supervisors. In comparison, gig platforms rely more on technologies to automate control and management; rely on work relations that fall outside of China's labor law; and see almost zero regular interaction between gig workers and platform operators.

² http://www.gov.cn/zhengce/2019-07/12/content_5408550.htm, retrieved July 27, 2020.

³ This is based on my interview with a government official in the Chongqing Municipal Government.

SPCs and GPCs both work under stringent algorithmic control, have similar demographic backgrounds and prior employment histories, and likewise do *not* enjoy social insurance, despite their different employment status—and yet, they have different perceptions of their respective work relations. Whereas most SPCs do not consider their work relations unfair or exploitative, most GPCs do. Moreover, GPCs are much more likely to go on strike, protest, and express solidarity, even though they face higher barriers to collective action due to the atomization of their work (Webster 2016). These perplexing patterns of labor contention across the two types of platforms provide an excellent opportunity to examine how and when labor control and management in the platform economy leads to collective resistance.

A rich body of literature already examines Chinese workers' grievances and collective action. Despite the country's authoritarian regime, labor disputes and strikes have been endemic (Gallagher 2014; Zhang 2019). It is well documented that labor law, nongovernmental organizations (NGOs), workplace ecology, and social media facilitate labor mobilization. China enacted the Labor Law and the Labor Contract Law in 1994 and 2007, respectively. The two laws provide a basic legal infrastructure to regulate labor relations, including the provision of social insurance. Prior to the intensification of state repression of civil society in 2013, labor NGOs and media helped to disseminate knowledge about labor law. As political scientist Mary Gallagher (2017) argues, China's labor law regime is characterized by high standards yet low levels of enforcement. It is not uncommon for employers to fail to meet their legal obligation to provide social insurance. In most labor contentions, aggrieved workers respond to violations of the Labor Contract Law by defending their legal rights and demanding state intervention and settlement of labor contracts (Gallagher 2014; Zhang 2019). The unique ecology of the workplace, particularly in factories and dormitories, and social media use further facilitate collective action (Pun et al. 2016).

Nonetheless, this literature has not been updated to account for the emerging platform economy. Some of the factors documented in the literature apply to both SPCs and GPCs, such as social media use and crackdowns on labor NGOs, and thus are unable to explain the differences between the two groups of workers. Other factors, such as the mobilization of labor law and workplace ecology, can only explain the collective action of SPCs but not GPCs. Court decisions in China have suggested that certain work relationships in the platform economy, such as those

under gig platforms, are not regulated by labor contracts and thus fall outside of China's labor law (Wang 2019). Literature has shown that workers understand and respond to their work grievances according to labor law (Gallagher 2017), but little is known about grievance construction and collective contention when work relations fall outside of labor law. To the best of my knowledge, only one article has analyzed labor contention in China's platform economy. Media scholar Julie Yujie Chen's work (2018) provides valuable insights into why taxi drivers are dissatisfied with their work within ride-hailing platforms. But her finding that drivers' discontent results mainly from ride-hailing apps' facilitation of illegal taxis does more to explain why protesting taxi drivers have demanded state intervention, and reveals little about the relationship between labor control and resistance.

To explain labor contention in China's food-delivery platform economy, I draw on literature from sociolegal studies, collective action, labor studies, and platform economy scholarship to analyze how platform architecture influences labor's collective contention. Analyzing 68 in-depth interviews, ethnographic data, and 87 cases of strikes and protests, I compare the platform architecture of service platforms and gig platforms and examine the relationship between their respective architecture and labor contention. I argue that specific differences in platform architecture diffuse or heighten collective contention. Within the service platform, although technological control and management generates work dissatisfaction, the legal and organizational dimensions of the platform architecture contain grievances and reduce the appeal of, and spaces for, collective contention. Conversely, within the gig platform, all three dimensions of platform architecture reinforce one another, escalating grievances, enhancing the appeal of collective contention, and providing spaces for mobilizing solidarity and collective action. As a result, gig platform couriers are more likely to consider their work relations exploitative and to mobilize contention, despite the fact that they face higher barriers to collective action due to the atomization of their work. This study contributes to the intersecting fields of labor, collective action, organizations and work, sociolegal studies, and sociology of information technologies.

HOW PLATFORM ARCHITECTURE INFLUENCES COLLECTIVE CONTENTION

In this section, I discuss key mechanisms for collective contention and theorize how and when platform architecture can heighten or diffuse collective contention through influencing these mechanisms.

Key Mechanisms for Collective Contention

Escalating grievances and perceived injustice. Sociolegal and social movement scholars point out the importance of analyzing the interpretive process of constructing grievances and injustice frames in order to understand the emergence and escalation of contention (Felstiner, Abel, and Sarat 1980; Gamson 1995; Levitsky 2008). They use the term “injustice frames” to refer to interpretations of experiences or conditions that show some moral principles have been violated and ought to be readdressed rather than tolerated (Gamson 1995). Research has shown that developing and sharing injustice frames is a necessary, albeit insufficient, condition for collective mobilization.

Building upon social movement literature, scholars of industrial relations argue that labor’s collective action requires constructing a sense of injustice from grievances. A situation about work must be understood as wrong or illegitimate rather than simply being dissatisfying (Beck and Brook 2020; Kelly 1998). The focus on constructing a sense of injustice resonates with labor research that analyzes the interplay between the labor process, morality, and solidarity (Beck and Brook 2020). Perceived injustice often manifests in collective action frames, which comprise a set of interconnected ideas about the existence of problems, causes of and responses to the problems, and rationales for labor collectivism (Gahan and Pekarek 2013). Although some research analyzes labor collectivism from the perspective of rational analysis, labor scholars find collective action frames go beyond the calculation of benefits and costs and highlight the moral imperatives for collective action (Morgan and Pulignano 2020).

Critically, labor scholars point to the need to study moments of escalation, as they often become moments of collectivism and generate “cultures of solidarity”—emergent oppositional practices

and meanings—as Rick Fantasia (1988:17) defines the term. At unusual moments of escalation, workers develop a new repertoire of action, network ties, and moral valuations and suspend customary practices of daily life (Atzeni 2009; Fantasia 1988).

Enhancing the appeal of collective contention. Even when grievances are escalated and when collective action frames are constructed, workers still have various options regarding whether and how to respond to perceived injustice. Literature suggests that a collective action frame will not prevail if workers see problems as inevitable or soluble only by individual exit but not collective voice (Kelly 2018). Indeed, research on low-paid workers in the United Kingdom finds that, although problems at work are widespread, satisfactory resolutions are rare because workers tend to discuss issues only with managers or just find another job (Pollert and Charlwood 2009).

Sociolegal scholarship offers the concept of the “dispute tree” to capture the wide range of options a grievant can pursue, from formal legal disputes in the court to processes outside of the court process, such as institutionalized non-court alternatives, individual informal legal mobilization, and extra-institutional collective action (Albiston, Edelman, and Milligan 2014). Indeed, workers can choose one or few options from the “dispute tree.” Arguably, when workers develop a strong sense of injustice and consider institutionalized channels or individual informal legal mobilization ineffective, extra-institutional collective action can become a more appealing option.

Making available free spaces for collective contention. Scholars have also argued that collective action requires certain free spaces to develop. Free spaces—whether physical or virtual—are “small-scale settings within a community or movement that are removed from the direct control of dominant groups, are voluntarily participated in, and generate the cultural challenge that precedes or accompanies political mobilization” (Polletta and Kretschmer 2013: 1). Such spaces are critical as they provide a relatively autonomous environment to develop networks, skills, and solidarity that assist collective action. In the context of industrial relations, free spaces mean spaces with relatively less oversight by management and less influenced by fear of managerial retribution, normative control, and surveillance (Thompson and van Den Broek 2010). Free spaces allow workers to construct grievances and a sense of injustice, develop collective action

frames, and evaluate various dispute resolution options. Although labor’s collective contention does not necessarily require formal organization, it requires rudimentary organizing efforts (Kelly 2018)—efforts made possible in such free spaces.

Platform Architecture and How It Matters

The multidimensionality of platform architecture. Although most of the literature on labor control in platform economies emphasizes algorithmic control (Griesbach et al. 2019; Lee et al. 2015; Rosenblat and Stark 2016), recent research has attended to the multidimensionality of labor control and management (Moore and Joyce 2019; Veen et al. 2019). Indeed, legal scholarship theorizes the co-existence of multiple models of control and regulation in society—law, technology, and social or organizational norms (Lessig 1999). These insights can be applied at the level of labor process. As such, I seek to analyze technological, legal, and organizational dimensions of control and management, as well as the relations among these dimensions. I use the term “platform architecture” to capture these multidimensional relations of control and management holistically.

Technological control and management refers to control and management that employs artifacts or “non-physical, systematic methods of making or doing things” (Hecht 1998:11). Many studies of platform economies focus on algorithmic control and management. They have shown platform companies use algorithms not only to “match” consumers with service providers, but also to manage and control the behavior of workers, converting workers’ general capacity for work into a specific and quantified amount of labor (Goods et al. 2019; Griesbach et al. 2019; Moore and Joyce 2019; Rosenblat 2018; Rosenblat and Stark 2016; Wood et al. 2019). For example, Rosenblat and Stark (2016) detail how Uber utilizes algorithmic control—characterized by information asymmetries and opacity of technological design—to shape drivers’ behavior. Griesbach et al. (2019) analyze how food-delivery platforms use algorithms to calculate prices, influence workers’ choices, and control workers’ activities.

Platform economies also require legal arrangement. The legal design of platform architecture refers to contractual and other legal arrangement that govern work or other legal relations and delimit the rights and obligations of various parties involved. Most studies of platform

economies concentrate on a particular aspect of contracts—namely, the contractual classification of workers. Platform companies often seek to classify workers as independent contractors rather than employees (Kenney and Zysman 2016; Vallas 2017; Veen et al. 2019). This classification is, indeed, critical for it shapes the basic rights and obligations of both parties and the degree of precarity and autonomy of work.

Building upon Mark Suchman’s (2003) work that analyzes contracts as social artifacts, I examine contractual design and processes in the platform economy rather than focusing on classification only. Legal scholars have pointed out the problem of contractual design in asymmetric contracts—contract relationships between a dominant business and another market player with unequal bargaining power—and considered such contracts unjust (Roppo 2009). Since platforms tend to have enormous market power and resources to make legal arrangements (Collier et al. 2017), they can use asymmetric contracts as a means for labor control and management. As legal scholars theorize, a contract is a contingent relational process rather than a static transaction (Macneil 1999). Thus, problems can still result from contractual design long after the initial consent.

The organizational dimension of control and management refers to the role of management personnel and the extent to which management personnel have a supervisory relationship with and can exercise normative influence and surveillance on platform workers. In traditional workplaces, management personnel tend to have a close supervisory relationship with workers and influence how workers respond to grievances (Pollert and Charlwood 2009). In comparison, some platform workers, such as Uber drivers, do not have a human supervisor (Rosenblat and Stark 2016). Rather than hiring management personnel to supervise workers, some platform companies invest in professionals who develop technologies and analyze data to automate the supervision of platform workers. In such scenario, management personnel manage professionals rather than workers.

How platform architecture influences collective contention. The technological, legal, and organizational dimensions of control and management can influence key mechanisms for collective action in several ways. First, studies of the platform economy have shown that the opaque, disciplinary, and arbitrary characteristics of algorithmic control and management can

generate considerable grievances (Rosenblat and Stark 2016; Tassinari and Maccarrone 2017, 2020). When platforms exercise stringent algorithmic control of workers' time and activities, workers not only feel dissatisfied with work but consider the platforms unfair (Griesbach et al. 2019). Extant literature thus suggests that certain characteristics of technological control and management can generate grievances and a sense of injustice.

Second, the legal design of platform architecture can impact how workers construct grievances and injustice frames and evaluate the appeal of collective contention. Certain contractual designs can deviate from workers' moral norms. Legal scholars consider asymmetric contracts unfair (Roppo 2009). Workers could likewise share similar moral judgment when they experience enormously unequal power relations. The legal dimension of labor control and management can also influence the construction of injustice frames and, in turn, the perceived appeal of collective contention. Previous research on labor contention in China finds a shared injustice frame that challenges the gap between "law on the book" and "law in action." Workers invoke labor laws to demand resolution to their grievances (Gallagher 2017). I expect that when a platform's legal design is not based on labor law, workers are more likely to construct injustice frames based on a more abstract moral principle. Furthermore, when injustice frames are based on an abstract moral principle rather than a specific legal clause, grievants are more likely to choose collective contention because it is difficult for them to turn such injustice frames into a concrete legal claim in the institutionalized legal process or individual, informal legal mobilization (Fritsvold 2009). In comparison, when injustice frames concern the gap between "law on the books" and "law in action," grievants can, relatively easily, make a legal claim asking for the implementation of law in the institutionalized legal process or individual negotiations.

Third, the organizational design of platforms can influence the construction of grievances, the appeal of collective contention, and the availability of free spaces. Previous research on low paid workers has shown that communications between managers and workers often prevent grievances from escalating (Pollert and Charlwood 2009). Regular interaction between management and platform workers can provide management opportunities to exercise normative influence on workers (Thompson and van Den Broek 2010). Recent research on the service sector further shows multiple levels of emotional labor; when supervisors perform the emotional labor of managing workers' feelings and expressions, the former can improve the emotional

labor performed, in turn, by the latter and increase their work satisfaction (DiCicco-Bloom and DiCicco-Bloom 2019). Accordingly, lack of regular interaction between the management and platform workers under certain platform architecture could make it more likely for grievances to develop and escalate. The perceived implausibility of grievance resolution through management could also increase the appeal of collective contention. Finally, the absence of supervisory relationships between management personnel and workers can make available certain free spaces for mobilizing solidarity and collective action (Tassinari and Maccarrone 2020).

Overlap of control and management. Although the three dimensions of labor control are analytically distinct, when platforms exercise control and management, different dimensions of control and management can be involved simultaneously. Such overlapping, however, does not negate the need to distinguish the three dimensions analytically, as how the dimensions interact can vary across platform architectures and have different implications for collective contention.

The overlap of technological and legal control and management often results from the mutually enabling and facilitating relationship between technologies and contracts under certain platform architecture. On the one hand, technologies can mediate the formation and implementation of contracts. Platform companies often design a “clickwrap agreement,” a digital prompt that offers individuals the opportunity to accept or decline a digitally-mediated agreement. A user cannot use or continue to use a platform app unless she accepts a clickwrap agreement. As a clickwrap agreement takes the form of a non-negotiated take-it-or-leave-it choice, it tends to give the party designing the agreement tremendous power (Hubley 2016; Smith 2016). Clickwrap agreements are often asymmetric contracts (Roppo 2009).

On the other hand, contracts can enable and facilitate technological control and management. Algorithms operate according to a set of rules. Such rules can be changed to achieve certain goals, for example, improving the optimization of algorithms. Certain contractual designs, such as the right to change contractual terms unilaterally in a clickwrap agreement, allow companies to change contractual terms and work policies and materialize the change by incorporating them into algorithmic rules (Lessig 1999). In other words, such contractual designs enable legal and technological updates needed for improving the performance of platforms. Existing literature tends to emphasize that technological control and management occurs in black boxes and

remains opaque to platform workers (Moore and Joyce 2019). However, since certain legal updates have to be overt to take effect and be followed by platform workers, when changes in technological control and management intersect with such legal changes, workers can clearly see such changes. As platforms' power becomes more visible, moments of simultaneous legal and technological change can become moments of grievance escalation (Atzeni 2009; Fantasia 1988).

Technological and organizational dimensions of control and management can also overlap because platform companies employ technologies to monitor workers, whether workers have a human supervisor or not. Technological and organizational control can interact in various ways. When a manager uses technologies to supervise workers, the two dimensions of control can have opposite impacts on collective contention. Although certain methods of technological control and management can generate grievances, supervisors' mediation could reduce grievances. In contrast, when supervision is completely automated through technologies, workers' problems with technological control might be exacerbated by the absence of managers to respond to the problems. Ultimately, automated supervision remains limited in its ability to exercise normative influence and perform emotional labor (Hochschild 1983).

In sum, my theoretical framework analyzes how platform architecture influences collective contention, which requires workers that develop a sense of grievance, consider collective contention appealing, and have access to free spaces for collective action. The technological dimension of platform architecture can generate considerable grievances. The legal dimension impacts grievance construction and the appeal of collective contention. And the organizational design of platforms can influence the construction of grievances, the appeal of collective contention, and the availability of free spaces. When different dimensions of control and management reinforce each other in ways that escalate grievances and perceived injustice, enhance the appeal of collective contention, and make available free spaces for collective contention, collective contention is more likely to arise, and vice versa.

CASE SELECTION, DATA, AND METHODS

I have chosen to study the food-delivery platform economy in China for two reasons. First, it has received relatively little scholarly attention, despite its growing size within China's broader platform economy. Second, there is a growing literature on the labor process in food-delivery platform economies outside China. Analyzing the Chinese case can build upon insights in, and contribute to, this literature.

The study design is a comparative analysis of work relations under two different types of food-delivery platforms—the service platform and the gig platform—each of which has a distinct platform architecture. A comparative design allows me to explain how platform architecture influences patterns of labor contention. Following the tradition of the comparative method, I see the cases of the two platforms as wholes, understanding and comparing the whole cases rather than seeing different dimensions of platform architecture as independent variables (Ragin 1987).

Specifically, I study delivery platforms that are owned, respectively, by the top two food-delivery platform companies in China: Meituan and Ele.me. I have selected only two companies because the online food delivery market in Chinese cities is generally duopolistic. Each company operates both service and gig platforms, and they do so in similar ways. Given these similarities, the study is able to compare labor processes and resistance across the two types of platforms, rather than across the two companies. My research was conducted between 2017 and 2019—after the market became mature and stabilized.

I draw on multiple qualitative methods to collect and analyze data. First, I conducted 68 interviews. I conducted in-depth interviews with 30 SPCs and 30 GPCs in seven cities between 2018 and 2019. I recruited people who were couriers at the time of the interview or in the twelve months preceding it. The distribution of these couriers is presented in Table 1. At the beginning of the study, an effort was made to diversify the interviewees according to location given the possibility of variation across cities in terms of how platforms operate and how couriers work. When it became clear that there is no significant difference across cities, I did most of my interview in Chongqing, a municipality in southwest China, given my access to research support there. Interview questions include basic demographic information, employment history, work situation, interaction with other workers and supervisors, and experiences of strikes and protests.

Many couriers shared their photos, videos, and social media communications with me, which helped me reconstruct collective action. As existing literature tends to neglect management's role (Veen et al. 2019), I interviewed six people with management positions (four for service platforms and two for gig platforms). Furthermore, I interviewed a system development engineer and an in-house lawyer to understand the technological and legal aspects of control and management. My assistants and I recorded and transcribed all the interviews.

[Table 1]

Second, I conducted online ethnography between 2018 and 2019. I joined four nation-wide discussion boards used by food-delivery couriers in Baidu Tieba, one of the largest online communities in China. I also joined ten social media groups formed by couriers. Furthermore, I examined the Weibo content of certain couriers who organized or participated in strikes or protests. Online ethnography enabled me to reach out to participants in collective action. I read discussions, listened to couriers' voice messages, and took notes and screenshots.

Third, I conducted on-the-ground ethnography in Chongqing. I began to conduct online ethnography with couriers in Chongqing two months before GPCs there organized a series of strikes and protests in May 2018. As Figure 1 shows, Chongqing is one of the many cities in which platform couriers staged collective action. I went to Chongqing in June 2018 to conduct fieldwork. When I arrived in Chongqing, many GPCs still had fresh memories about the collective action. I stayed in a plaza where gig couriers hung out and joined their conversation. One service platform station allowed me to observe the routines of the couriers and supervisors. One gig platform manager allowed me to visit his office. After I left Chongqing, I continued to observe the situation there through follow-up interviews.

I analyzed and collected interview and ethnographic data iteratively, moving between data and theories. Initially, I designed my interview questions based on literature on algorithmic control. After conducting the first 20 interviews and some online ethnography, I began to analyze data. As a number of the emerging themes and codes did not appear in the literature on algorithmic control, my preliminary empirical analysis prompted me to develop a broader theoretical framework. I then revised my interview protocols based on the newly included literature. I did supplemental interviews with the first 20 interviewees and then conducted 48 more interviews.

Fourth, I compiled a dataset that contains 87 cases of strikes or/and protests organized by food delivery couriers between 2017 and 2018 in China. I use the term “strike” to mean a period of time during which people refuse to work; I use the term “protest” to refer to the expression of opposition to something. All of the cases were both strikes and protests as couriers not only refused to work but expressed their opposition to employers or platforms on banners or signs. I compiled the list from a professional news database (WiseNews), search engines, online communities, Weibo, WeChat, and the China Labor Bulletin. China Labour Bulletin is a labor NGO in Hong Kong that provides the most comprehensive data about labor disputes in China. The data that I collected include texts describing strikes and protests and photos and videos. I documented slogans written on banners and signs. I coded the resulting data in terms of: type of platform, platform company, location, the content of the complaint, and action of couriers for each collective action. I am aware of the limitation of the dataset in terms of its exhaustiveness, so I use these data to complement my interviews and ethnography data rather than trying to subject them to rigorous quantitative analysis.

Finally, I collected the texts of contracts between different actors involved in food delivery. I also compiled the texts of all kinds of rules enacted by the two platform companies and their franchisees and local offices. In addition, I read 60 court decisions made by the Basic People’s Courts and Intermediate People’s Courts. All of these court decisions listed either Meituan or Ele.me as one of the parties in the cases. Most of the decisions concern individual compensation following deaths or injuries of platform couriers or other parties due to traffic incidents in which platform couriers were involved. Although the type of disputes in these cases is not central to collective contention, the court decisions provide detailed information about the legal and organizational design of the service and gig platforms. My legal education and six years of work experience as a legal professional facilitated my analysis of legal texts.

FINDINGS

In this section, I first describe delivery couriers. Next, I examine the platform architectures of the service and gig platforms and show the varying patterns of collective contention under each. Finally, I demonstrate how platform architecture influences collective contention.

Platform Couriers

According to surveys conducted by Meituan and Ele.me, their couriers are predominantly male (92 percent); 77 percent have rural household registration status; and 70 percent are migrants. Most of the couriers are in their 20s, with an education level of middle or high school. The most common prior occupation is factory worker. Forty percent of Meituan couriers report that they work as a delivery courier because of the freedom it affords.⁴

Prior work experiences explain why the discourse of freedom advanced by the platforms has a strong purchase on couriers and how couriers think about jobs, social insurance, and labor contention in general. Fifty-eight percent of my interviewees worked previously in the manufacturing sector. Many are haunted by experiences of or narratives about harsh factory conditions. They mentioned they would never want to work in a factory or to go back to a factory, citing negative conditions like the closed factory environment. As such, couriers desire freedom and seek to escape from manufacturing jobs. Also, strikes and protests are not foreign to couriers who worked in factories or construction sites as many of them had heard of, if not personally participated in, such collective action. None of my interviews consider working as a courier in the long run, but most of the full-time couriers have no concrete career plans.

Both SPCs and GPCs tend *not* to care much about social insurance due, in part, to the weak enforcement of the labor law (Gallagher 2017). In China, the labor law requires employers to buy social insurance for employees. However, couriers understand that only more established factories, but not smaller ones or employers in the service sector, would fulfill this obligation. Many of them also think, due to their migrant status, the protection from social insurance is minuscule even when employers follow the law.

It is couriers that decide to work as an SPC or GPC. The application processes for SPCs and GPCs are separate. Usually couriers ask friends or couriers in social media groups about how to choose between types of platforms and companies. For people who want to have a part-time job, being a GPC is the only option, because there is no part-time option for SPCs. For people who

⁴ <http://www.199it.com/archives/823693.html>, retrieved July 27, 2020.

want to be a full-time courier, they choose between the two types of platforms. Some of my interviewees said they wanted to work with their friends and thus just followed their friends. Those who prefer to have a relatively structured life and a stable income tend to choose SPCs. Some think they can make more money from being a GPC.⁵ Others consider how familiar they are with the streets of the city district where they live because such familiarity influences the on-time rate. For those who lack familiarity, being a GPC might be a good option because supervisors can help. Prior to my contact with them, three out of the 30 GPCs in my sample switched from a service platform to a gig platform, while only one out of the 30 SPC switched from a gig to service platform.

Importantly, as Table 1 shows, SPCs and GPCs share similar demographic characteristics and employment history. I did not find evidence suggesting the two groups have different levels of human capital, skills, or disposition. The only difference between the two groups is that all SPCs but only 70% of GPC work(ed) as a full-time courier. Full-time SPCs and GPCs wholly depend on platforms for their livelihood, while part-time GPCs use delivery work to supplement their primary source of income (Schor et al. 2018).

Platform Architecture

Although urban dwellers who order food using a mobile app are familiar with the two major platform companies, most of them are unaware of the different types of platforms, let alone which type they are using for a given transaction. They choose the restaurant and the food. In each transaction, it is the restaurants that select the type of delivery platform. In general, service platforms offer delivery service only within a three-kilometer radius, while gig platforms do not have such a constraint. When the distance is within three kilometers, restaurants can choose between the two types of platform. For restaurants, the gig platform is the cheaper option, but it is also less reliable as GPCs are not monitored by supervisors. The pros and cons of the two types of platforms for restaurants are associated with their respective platform architecture, which I turn to now.

⁵ Please see the note in Table 1 about SPCs and GPCs' income.

The architecture of the service platform. The architecture of the service platform, as a whole, aims to establish a reliable workforce. As Liu, an in-house lawyer at Meituan, explained, building a dependable workforce requires a high level of supervisory power over couriers, but such power also requires bearing the legal responsibilities associated with conventional employment relations.

Both Meituan and Ele.me franchise their business to other companies to create a reliable workforce. Franchisees operate service stations in a local jurisdiction, while also employing and supervising district managers, service station supervisors, and delivery couriers. Meituan and Ele.me provide their franchisees with technology—a platform system for managing delivery orders and couriers. The two franchisors oversee their franchisees through setting a series of key performance indicators (KPIs). These indicators are aggregated from the performance of individual couriers through the platform system. Cai, a district manager, described how KPIs work:

Platform companies set many KPIs, such as the on-time rate, customer review scores, the number of complaints, etc. If our KPIs are not good, Meituan can terminate our contract or give us a fine. Therefore, we ask everyone to have good KPIs.

Meituan and Ele.me’s franchisees use the technology provided by the two franchisors—specifically, the platform system—to assist in managing and controlling the labor process. Technology is thus a tool used by management personnel, rather than something that replaces them. On the one hand, franchisees and station supervisors are constrained by the platform system. Station supervisors mostly rely on the platform system and the algorithms embedded in it to dispatch couriers, but they can also manually dispatch couriers. Dispatch algorithms consider couriers’ performance metrics in order to assign priority to receive tasks. The platform system incorporates various disciplinary rules, such as fines. It also sets the maximum time for completing each delivery. On the other hand, franchisees can change certain parameters in the system, such as the amount of fines imposed on couriers.

Meituan and Ele.me’s technological control and management also includes certain dimensions of “gamification” (Deterding 2019). The mobile apps are designed to induce couriers’ participation in the “game.” The graphic design of the apps is lively, reminiscent of a video game. Similar to

popular video games, Meituan and Ele.me's apps classify couriers according to their performance metrics. A higher-level courier earns certain privileges, such as the priority to take an order. The classification is dynamic, so couriers have to maintain their scores to avoid a downgrade. One SPC described: "I was amazed by the fact that working can be like video gaming. I competed with other couriers and tried to raise my level."

Legally, Meituan and Ele.me's franchisees, rather than Meituan or Ele.me, form a labor contract with SPCs that classifies couriers as employees. How franchisees establish a labor contract with couriers varies across service stations, but such contracts must establish a salary structure, both parties' obligations, and the supervisory relationship. All of the labor contracts calculate salaries based on piece rates and the number of delivery tasks. Some contracts include a minimum monthly wage, but some do not. In most service stations, supervisors display disciplinary rules on the wall.

The organizational design of the service platform emphasizes the role of management personnel in supervising couriers. Management personnel aim to maximize KPIs through managing couriers. Old Huang, a service platform supervisor with a high school level education, explained: "The platform system is a useful tool because it spares my time from assigning tasks manually, but ultimately my job is to manage people, who have emotion." Cai, a district manager, told me that, when hiring supervisors, he considers those with prior experience as couriers as desirable candidates who can work with SPCs to ensure excellent KPIs.

Station supervisors and couriers have regular face-to-face interactions. The daily interaction begins with a morning meeting. Old Wang, an Ele.me station supervisor, described the routines:

We begin our morning meetings from 10 am. Couriers sanitize their delivery boxes. Then we go over statistics. Our company has three service stations in this district. We announce how many orders, good reviews, and bad reviews each station received yesterday. I teach couriers how to behave in a civilized way. We practice how to apologize to customers. I have to do ideology work to better educate couriers, so they would have excellent KPIs. Many customers are crazy, so I often have to lift couriers up.

Interestingly, ideology work is the term used by the Chinese Party-state's propaganda system to indoctrinate people. This quote shows the effort of station supervisors to influence how couriers behave, deal with emotion, and generate excellent performance metrics through normative control and emotional labor (Hochschild 1983).

The architecture of the gig platform. The technical, legal, and organizational design of the gig platform, as a whole, aims to establish a flexible and disposable workforce. According to Liu, a lawyer at Meituan, gig platforms achieve this goal by surrendering most of the supervisory power of management personnel over couriers. He explained: "If management personnel are visibly involved in supervising couriers, the court will consider work relations as employment relations. That means platform companies do not have flexibility to adjust workforces. Also, platforms will have to take more legal responsibility."

Consequently, gig platforms elect to automate most management and supervision tasks. Similar to technological control and management under the service platform, Meituan and Ele.me rely on technology to discipline and dispatch GPCs. Disciplinary rules are built into and implemented by the system, such as fines and deactivation of an app account. Dispatch algorithms have incorporated specific priority rules that decide which couriers are given priority to get their choices. Dr. Wang, a system development engineer at Meituan, explained the company's algorithm to me:

When a consumer makes an order, the system calculates the distances between the consumer and available gig couriers and the distances between the restaurant and available gig couriers. The algorithm also considers couriers' performance statistics. The system gives priority to gig couriers with better statistics.

Indeed, the two gig platform systems classify couriers into different levels. In addition, credit points are designed by platforms to measure a courier's credibility—how reliable the courier is—based on their behavior, such as couriers' records of accepting or rejecting dispatch assignments. Similar to the design of the service platform apps, the gig platform apps integrate elements and dynamics of "gamification" to induce couriers' participation in the "game" (Deterding 2019).

Furthermore, the two gig platforms use algorithms to set remuneration. Under the service platform, piece rates are, in general, fixed and stated in a contract by Meituan and Ele.me's franchisees. In comparison, Meituan and Ele.me's gig platforms use algorithms that factor in several factors (e.g., distance, the condition of the destination, weather, etc.) to calculate piece rates. The pricing model is similar to UberEAT's model (Veen et al. 2019). Local managers who work for gig platforms can change some parameters in the system that influence remuneration, for instance, the basic rate for a kilometer.

Both Meituan and Ele.me use technology to confirm the identity of gig couriers and monitor couriers' compliance with rules. Since gig couriers do not have a human supervisor, both platforms require couriers to scan their face before they can take an order and take a picture of themselves during their work. As Xue, a GPC, described: "Ele.me often ask me to upload a selfie when I'm on the road. They want to see whether I wear the company's helmets and vests and carry the company's delivery box." Failure to comply with such rules has disciplinary outcomes.

Legally, both Meituan and Ele.me design their contracts meticulously to maximize the gig platforms' flexibility. Liu, a lawyer at Meituan, explained to me the legal work the two platforms have done:

The legal relationship is complicated as there are many parties involved: platforms, couriers, restaurants, consumers, and people on the street. Our task is to minimize the company's liabilities and maximize flexibility. We avoid having an employment relationship with gig couriers. We don't want to be responsible for couriers' traffic negligence. We've left some space for the company to adjust contractual terms, policies, and, importantly, technologies.

Indeed, Meituan's clickwrap agreement stipulates that China's Labor Contract Law does *not* apply to the contractual relationship between Meituan or its subcontractors and GPCs. Such legal classification design is similar to its counterparts in gig economies outside China (Vallas 2017; Veen et al. 2019). Meituan's clickwrap agreement also stipulates that GPCs must accept every clause in the agreement and any rules published on Meituan's platform, including disciplinary measures. Essentially, Meituan and Ele.me are similar to conventional companies that employ contingent workers in terms of attempts to avoid liabilities resulting from employment

(Kalleberg 2009). But unlike conventional companies, Meituan and Ele.me endow themselves with the power to change contractual terms unilaterally through a non-negotiated clickwrap agreement (Stewart and Stanford 2017). Asked about whether he considered Meituan and Ele.me’s contracts asymmetric, Liu—likely influenced by his awareness of my legal training—replied frankly:

The power of platforms and that of couriers are enormously asymmetric. We only have two major platforms in China. Tencent and Alibaba are their parent companies. How much capital and how many political connections and lawyers do the two platforms have? As you know, law is an instrument for capitalists!

The organizational design of gig platform architecture minimizes the role of management personnel in managing and supervising couriers. Although Meituan’s subcontractors and Ele.me set up offices in cities where the two companies’ gig platforms operate, Peng, a manager who works for Meituan’s gig platform, explained that his office’s main focus is monitoring and managing data and the platform system itself, rather than couriers. When I visited Peng’s office, I noticed that most of the people there were either analyzing data or identifying irregular patterns in front of their computer screens. Similar to Dr. Wang, an engineer whom I interviewed, Manager Peng sees the operation of the delivery platform as a mathematical problem of “multiple goal optimization”; that is, “how to maximize revenues and customer satisfaction through dynamically optimizing the matching of orders and couriers with the best metrics.” Couriers’ experience, on the other hand, was not something either Peng or Dr. Wang sought to optimize.

The number of gig platform offices in a city is much smaller than the number of service stations since the former type of offices do not have regular interactions with couriers as service stations do. Gig platform offices only set up, often through outsourcing, infrequent offline training sessions for GPCs. Both Meituan and Ele.me require couriers to complete online training in order to activate an app account. They further require offline training as a prerequisite to receive more than a certain amount of delivery tasks or to reactivate an app account blocked by the companies when GPCs violate platform rules. I attended one such offline training, where an instructor talked about the platform company’s rules, including fines and other forms of

punishment. The offline training section ended with an exam that tested whether couriers could memorize the rules. In Table 2, I summarize the platform architectures of the service and gig platforms.

[Table 2]

Patterns of Collective Contention

Although SPCs and GPCs share similar demographic backgrounds and prior work experiences, I find different patterns of collective contention in terms of the frequency and injustice frames of collective action across the service and gig platforms. According to the management personnel I interviewed, the majority of delivery work is completed by SPCs, but GPCs organize much more collective actions than SPCs. Among the 87 collective actions, 39 percent were organized by SPCs, while 61 percent were organized by GPCs. This finding is consistent with my interviews with the management and couriers, which show most of the strikes or protests they knew of were organized by GPCs.

A typical collective action organized by SPCs is against their employer—Meituan or Ele.me’s franchisee. Couriers communicate online and offline to prepare for collective action. They gather outside of their service station, raising banners and chanting their demands. The number of participants is usually less than thirty as participants only include SPCs at the same service station. In comparison, a typical collective action organized by GPCs is against Meituan or Ele.me. GPCs organize action through social media and offline meetings. Since GPCs do not have a conventional workplace, they stand or sit in public space, such as plazas or the sidewalk outside restaurants. They attach a sign to their scooters and raise banners on the sidewalk, so the public can see their grievances. GPCs also organize “flying pickets,” in which they honk and ride scooters with strike/protest signs while also patrolling outside of restaurants or on the street to prevent non-participating GPCs from delivering food. The number of participants in a collective action organized by GPCs tends to be larger than those organized by SPCs. It is common for GPC collective actions to have more than 50 participants.

I analyze how SPCs and GPCs framed their complaints in the 87 cases. It is common for couriers to express multiple complaints in a collective action. As shown in Table 3, SPCs and GPCs had

different patterns of concern in the strikes and protests. For SPCs, the most salient concerns were not receiving their salary and disciplinary measures. Common phrases used by SPCs on banners include: “Pay us salaries according to the contract and the law” and “The employer maliciously withholds our salaries. We need to eat!” For GPCs, the most salient concerns were decreasing piece rates and unilateral change of contract terms or platform rules. Common slogans used by GPCs include: “Ele.me reduces the rate maliciously, shortens delivery time, deceives couriers, and ignores lives”; “Meituan reduces the rate crazily. Brothers, stop taking orders. Resist Meituan!”; “Resist monopoly!”; “Despotic clauses!”; “Who can make the most despotic contracts? Ele.me!”; and “Ele.me exploits couriers; we need to feed our families; we want justice.”

[Table 3]

In sum, GPCs organized more collective actions than SPCs, and SPCs and GPCs also had different injustice frames. The injustice frames used by SPCs express criticism of their employers for not paying salaries according to contracts and labor law. The language does not question the legitimacy of contracts. In comparison, the injustice frames used by GPCs challenge the legitimacy of contracts, asymmetric power relations, the exploitative nature of capital-labor relations, and the morality of platforms. In Table 4, I summarize the different patterns of collective contention across the two types of platforms.

[Table 4]

Construction of Grievances and Collective Contention Under Service Platforms

Technological control and management. SPCs do complain about their work and name their injurious experiences, especially KPIs and disciplinary measures built into the platform system. Several SPCs expressed that one complaint can cost 150 RMB (around US \$22.3). On average, SPCs make 5 RMB (around US \$0.74) for each delivery, and the most productive couriers complete around 50–60 delivery tasks each day. The amount of a fine can be a considerable proportion of an SPC’s daily earning. Many SPCs complained about the stress resulting from disciplinary measures built into the app. They talked about speeding in chaotic traffic and under severe weather conditions to deliver food on time. Similar to platform workers in the United

States who are stressed by performing emotional labor (Raval and Dourish 2016; Rosenblat and Stark 2016), SPCs describe feeling immense pressure to get excellent reviews.

SPCs also complain about dispatch algorithms. Chen, a 26-year-old SPC, explained why he thinks Meituan's algorithm unfair:

It's clear that I am closer to the restaurant, but the system does not assign the order to me. Instead, the system assigns the order to a courier with higher KPIs. Top five couriers keep getting orders, but others do not get many orders. This is unfair.

Wang, a 27-year-old SPC, has similar complaints: "The algorithm is stupid. When I am delivering an order, it always assigns me another within short delivery time. That decreases my on-time rate." Dissatisfaction with algorithmic control and management is prevalent among my interviewees.

Legal control and management. Despite SPCs' complaints about technological control and management, I found their dissatisfaction seldom evolved into a grievance or a sense of injustice, due, in part, to their understanding of the legal relationship. SPCs feel their work conditions are expected based on their labor contracts. Several SPCs mentioned that they knew the salary structure and disciplinary rules from the very beginning, and that the rates and rules remain the same. As Dong put it: "You know how much you are going to get and what the service station expects you to do. If you are unhappy, don't take the job. You can leave the job anytime." Similarly, another SPC remarked: "The disciplinary rules are harsh, but the service station needs to ensure the quality of service. And we know that from the contract and rules on the wall." These quotes show that the legal design of the platform architecture—specifically, the concrete and stable terms in a labor contract—helps to stabilize labor relations.

In addition, SPCs distinguish dissatisfying from unacceptable aspects of work. They see salary as the most important component of their contracts. As long as their employers pay salaries, they do not have serious issues. Wang's view is typical among SPCs:

I'm dissatisfied with the dispatching algorithm, but it's not the most important issue. As long as my boss pays me salary, I'm fine. I got my contract down in black and white. If

my employer does not pay me, I'll have evidence to prove his violation of the contract and labor law. I can talk to supervisors. If they don't respond, I will go to the court.

Asked about whether going to the labor bureau or the court was difficult, Wang said, "Couriers on WeChat say there are free templates available. We only need to fill out a form to file a complaint. You don't need a lawyer. Some couriers got money back successfully." When I asked Wang whether he would consider a strike or a protest if he did not receive his salary, he said he would not do so unless none of the other methods worked.

Wang's answer, which is common among SPCs, also shows the relationship between injustice frames and the appeal of collective contention. Since SPCs' injustice frames are based on a highly established legal claim regarding the violation of the labor contract and labor law, they feel they can solve the problem through individual informal legal mobilization and institutionalized dispute resolution channels. They consider collective contention only when other branches of the "dispute tree" do not work (Albiston et al. 2014).

SPCs' focus on one contractual element—salary—also reflects in how they think about social insurance. Even though service stations do not entirely follow the Labor Contract Law, very few SPCs feel angry about this. Due to the often weak enforcement of the labor law, SPCs have low expectations regarding social protection (cf., Vallas 2017). In fact, only one SPC said his employer bought social insurance for him. However, both SPCs and supervisors I interviewed said that since the turnover rate of SPCs is high, it is difficult for service stations to provide SPCs with social insurance. My interviewees told me that not even station supervisors receive social insurance. None of the SPCs I interviewed consider social insurance a critical component of their labor relations. Fang, a 26-year-old SPC, commented:

Almost no employers in the service sector would buy social insurance for employees.

Also, we don't think social insurance useful, so we don't ask the station to buy it for us. I bought social insurance when I worked in an automobile factory. I don't feel I'm in a better situation with social insurance because of my household registration status.

What SPCs care about most are wages. In most cases, it is only when a grievance about salary emerges that other issues, such as social insurance and disciplinary measures, are incorporated into discussion.

Organizational control and management. SPCs told me they communicate with their supervisors when problems arise. They feel more informed about the situation even when they do not get their complaints solved. Many couriers expressed understanding that supervisors themselves are constrained by the platform system and Meituan or Ele.me. For example, although Chen and Wang complained about dispatch algorithms, they told me it would be unreasonable to blame their supervisors because they are obligated to use the algorithms. Chen explained:

I told my supervisor the platform system assigns orders unfairly. I received fewer orders than people with good KPIs. He told me he couldn't change the system, but he manually assigned me some orders from time to time after I talked to him. That made me feel better.

This quote also shows that even when a complaint occurs—in Chen's case, from dissatisfaction with algorithmic control—supervisors' intervention could prevent problems from worsening.

Wu, a 30-year-old SPC, told me about a dispute in his station that could potentially lead to a strike. When Wu and his fellow couriers did not receive their salaries on time, they discussed the issue on WeChat and talked to their supervisors. The supervisor knew SPCs could initiate a strike. Under pressure, he asked the district manager to explain the situation to the couriers. The manager said his company had problems with Ele.me and would distribute salaries once they receive payment from Ele.me. In the end, SPCs received their salaries. Wu remarked: "Because the management solved our problems, we didn't take further action like strikes." This instance shows effective management can reduce the appeal of collective action.

Most SPCs told me they have no serious problems with their supervisors, although two complained about their supervisors' unfair manual assignment of tasks. I was wondering why the supervisory relationship does not seem to be tension-ridden. Little Chen explained that his supervisor's KPIs and the station's KPIs are the aggregation of SPCs' KPIs. He and his colleagues can retaliate against their supervisor by lowering their KPIs and then leaving their job

if their supervisor is mean to them. Chen also mentioned it is easy for SPCs to transfer their work to another service station if they have conflicts with supervisors.

My interviews with the management also found organizational constraints on supervisors' behavior. Old Huang, a station supervisor, said: "It's better to educate and communicate with couriers nicely. We are in the service industry, not manufacturing. I need their smile, politeness, and good attitudes to make a living." Similarly, Cai, a district manager, told me the key is "managing the hearts and minds of both customers and couriers" to get good KPIs. Cai pointed out, according to the franchise contract, the platform could terminate his company's right to operate delivery business if a strike or protest occurs; franchisees also have obligations to oversee SPCs' behavior in social media. Essentially, the organizational constraints through KPIs and franchise contracts motivate supervisors to perform emotional labor and exercise normative influence—and surveillance—on SPCs.

Indeed, supervisor Old Huang mentioned that it is not difficult for the management to discern what is going on among SPCs as he sees SPCs every day and he is in their social media groups. "You know who is doing what.... I do extra ideological work on unruly couriers." One aspect of ideological work, according to Old Huang, is telling SPCs that protests or strikes are illegal. Old Huang's quote corresponds with how Wu, an SPC, described his supervisor's surveillance: "He knew what we were discussing. It's quite difficult for us to discuss things. Also, couriers with a closer relationship with the supervisor might betray us." Old Huang and Wu's quotes reveal that couriers' workspace is not free but monitored by management—an established challenge to collective action (Pollert and Charlwood 2009).

Collective contention. Despite organizational control and management, collective contention still arises on rare occasions. Three SPCs who reported participating in collective action provided similar accounts of why collective action happened. Ming described:

We were supposed to receive our salaries. Our supervisors didn't know why the company [franchisee] hadn't paid us, but he agreed the company violated its obligation. Since some couriers said the company would go bankrupt soon, we decided to take action [a strike]. We didn't have time for the court.

Ming's quote reveals that the injustice frame for SPCs was violation of contractual terms. After the strike, Ming's company told SPCs the company had financial problems. SPCs eventually received around 80% of their salaries.

I also interviewed station supervisors and a district manager about collective action. Wang, a service station supervisor, stated:

Couriers rarely initiate a strike or protest as supervisors already solve most of the problems. Strikes occur only when franchisees have problems with Meituan or Ele.me or when there is an internal dispute among investors. These problems create financial difficulty for franchisees and cannot be solved by supervisors. Under such circumstances, franchisees try to pay less. Couriers and franchisees have more or less similar understandings about what is right and what is wrong.

Wang's quote corresponds to something district manager Cai told me, that it would be almost impossible for franchisees to deny their obligation to pay salary. The focus of negotiation from the perspective of franchisees, Cai explained, is to "let couriers know the company's difficulty and accept what the company can afford." Together, my interviews with SPCs and the management suggest that, even when a collective action arises, couriers and employers do not have fundamentally different views on contractual terms and law. Rather than challenging the legitimacy of contracts, SPCs demand that employers honor the contracts.

In sum, within the service platform, technological control and management can cause dissatisfaction among SPCs, but the legal and organizational design of the platform architecture often serves to contain grievances and make collective action less appealing. Collective contention seems less appealing to SPCs since their injustice frames (i.e., violation of contracts and labor law) are based on well-established legal claims and they can communicate with management personnel. Finally, the platform architecture's organizational design—particularly the constant presence of supervisors—also restricts the amount of free space for organizing collective contention.

Construction of Grievances and Collective Contention Under Gig Platforms

Technological control and management. Similar to SPCs, GPCs are critical of dispatch algorithms and disciplinary rules built into the platform system, but they also have problems with the calculation of remuneration, decreasing remuneration, and changing dispatch and disciplinary rules. Several GPCs accused the gig platforms of “stealing money” from them. Qiang, a 29-year-old GPC, explained: “Meituan is scamming us. They know the real delivery distance but use the linear distance between two points to calculate remuneration. We are not flying an airplane!”

Like gig workers in Europe (Tassinari and Maccarrone 2017, 2020), GPCs overwhelmingly criticize how platforms have decreased remuneration. They believe platforms have changed algorithms to reduce remuneration, although the two platform companies have never openly acknowledged that the companies lower the piece rate. Similar to Rosenblat and Stark’s (2016) study of Uber in the United States, gig platforms and couriers in China have asymmetric information about the platform system. The actual practice of algorithmic pricing remains a “black box,” hidden from workers’ view, so GPCs complain about the decreasing rate based on their observations. Although gig platforms use algorithms that consider many factors to calculate piece rates, couriers said it is evident that piece rates under similar circumstances have decreased over time. As GPCs often take screenshots of their tasks and share them online, they believe they have evidence of the decreasing piece rates. For example, a GPC said that in the past, he received 5 RMB (around \$0.74 US) for a delivery task within 1.5 km, but the rate went down to 3.5 RMB. There was a consensus among my interviewees that Meituan and Ele.me have changed their algorithms and lowered the piece rate *stealthily* in the hopes that couriers would not notice it. GPCs complain that decreasing piece rates have a significant impact on their lives. According to Shi, a 22-year-old GPC: “I was able to make 9,000-10,000 yuan (around \$1,278-1,420 US) per month. Now I make around 6,000 yuan (around \$852 US) a month.” Many GPCs reported having to work two more hours every day to maintain the same level of income.

My GPC interviewees emphasized that, while the two gig platforms are decreasing piece rates, the platforms have also been changing the dispatch and disciplinary rules within the system to restrict GPCs’ freedom to decline a dispatch assignment. This is similar to Rosenblat and Stark’s (2016) study of how Uber constrains drivers’ freedom to reject a request. When a GPC declines a

dispatch assignment, Meituan's platform system deducts the courier's credit points. Couriers with low credit points are less likely to be assigned orders with higher remuneration. In some cities, Meituan has even made new dispatch rules that require offline training and restrict a courier's eligibility to take an order after they decline a certain number of dispatch assignments.

In online communities, I saw a lot of criticism: "Given that couriers do not have freedom, Meituan should stop using freedom in its advertisement to recruit gig couriers"; "The platforms promise to give us freedom, but now they treat us like their slaves. We are forced to take orders with low pay." These comments critique the contradiction between gig platforms' promise of freedom at work and how dispatch rules and algorithms negate such freedom. When GPCs realize gig platforms increase technological control to reduce the promised freedom, they see the platform-courier relationship as a master-slave relationship and feel betrayed.

Legal control and management. Within gig platforms, certain updates of dispatch and disciplinary rules in the platform system require corresponding legal arrangements, thus leading to the overlap of technological and legal control and management. Unlike changes in pricing practice, changes to dispatch and disciplinary rules are often transparent. Before implementing new dispatch and disciplinary rules in the platform system, local offices notify GPCs of the new rules and justify the changes by stating their purpose is to "better regulate delivery behavior."

Local offices further affirm that they have the "ultimate legal rights" to change platform rules according to contracts between the platform and couriers by pointing to the clickwrap agreement that couriers accept when installing the delivery app. However, none of my gig platform interviewees reported reading the legal texts or knowing platforms have the right to change the content of the agreement and platform rules unilaterally when they installed the app and accepted the clickwrap agreement. All of them expressed anger about such clauses and other rules enacted by platforms unilaterally. They called such contractual terms and platform rules "despotic clauses" (*bawang tiaokuan*) and said such terms and rules were evidence of exploitation.

I was curious as to why the companies are so secretive when it comes to changing pricing practices, but open about changes in dispatching and discipline rules. Manager Peng explained that the companies have to announce the latter to shape GPCs' behavior: "We use the carrot and stick approach. If the new rules remain unknown to couriers, couriers will not change their

behavior even after we incorporate the rules into the platform system.” He also emphasized the need to adjust platform rules dynamically:

The purpose is to enhance the efficiency of dispatch assignments and customers’ experience. Under the service platform, couriers must accept every order assigned by his station. Under the gig platform, couriers don’t have such obligation, but the company wants every order to be taken by an excellent courier. Achieving this goal needs continuing improvement of dispatch and disciplinary rules. Now our platform system is powered by artificial intelligence and machine learning. It learns from the big data it collects and gives us feedback. These tools help us improve the system’s efficiency by changing the rules dynamically.

Manager Peng’s remark reminded me of my observations of offline training sections, in which GPCs were required to memorize platform rules and tested on the content of the rules. Gig platforms, I suddenly realized, seek to turn couriers into part of the platform system that automatically implements the rules. When the companies change the rules, new rules have to be installed not only in the platform system but also in the minds of couriers themselves. When this can be done successfully, human workers effectively become part of the platform technology.

And yet, unlike service platform supervisors, gig platforms do not make the rules internalized to GPCs through normative influence or emotional labor. Gig platforms just announce the changes in platform rules and corresponding disciplinary measures, assert their “ultimate legal rights,” and test GPCs on the rules. In these moments, technological and legal control overlaps, and the platforms’ power becomes salient. Deng described such moment:

When I saw the platform’s notice about the new dispatch and disciplinary rules in the system [the platform system] and the company’s legal rights, I felt furious. Then I understand why couriers complained about despotic rules on WeChat... Couriers were saying everything—from platform rules to legal clauses—is determined by the platform but not us.

Deng’s quote shows that the revelation of platforms’ unbridled legal and technological power turns moments of changes into moments of escalation (Atzeni 2009; Fantasia 1988). Although

previous literature has focused on the legal classification of workers as employees or individual contractors (Vallas 2017; Veen et al. 2019), what concerns GPCs the most is the platform companies' unilateral and unconstrained legal and technological power. In the interviews, many GPCs emphasized that the platforms' exploitation is *blatant*. For example, one GPC remarked:

Now the platforms implement all kinds of despotic clauses. If you don't follow their rules or terms, they deduct money from you. They force you to accept their dispatch assignments with low pay. If you don't take their order, they deactivate your account. It is unfair. Platforms *blatantly* exploit couriers.

In general, my gig courier interviewees think platforms use unfair legal arrangements, making the inputs and return of labor totally disproportional. They understand that the two platforms may not technically violate any existing law, but they feel there are unfair loopholes in the legal system. In sum, the legal dimension of the gig platform architecture generates grievances and heightens perceived injustice.

Asked about whether they can address their grievances through the labor bureau or the court, most GPCs said no because they simply do not know which law platform companies violate. Importantly, they understand that their legal situation differs from conventional employment relations, although they cannot use legal terms to describe their status. As Little Zeng said,

We don't have a contract. I mean a labor contract. I don't know what kind of status we have. I only know we're not their employees. I don't think we can go to the court or the labor bureau. That's for people with a labor contract. We don't know what kind of law the platforms have violated. We just feel they are wrong and things are unfair.

I also saw discussions among GPCs in social media groups. Most of them share the same legal understanding as Zeng. As one GPC shared with a social media group of other GPCs, when he went to a labor bureau for legal advice, he was told that the bureau could not help because it could only assist people with a labor contract. Consequently, GPCs see a disjuncture between their injustice frames that challenge the legitimacy of contracts and claims that can be accepted by dispute resolution institutions. Put another way, the institutionalized resolution "branches" in the "dispute tress" do not seem viable to GPCs (Albiston et al. 2014). As such, the legal

dimension of the gig platform architecture makes collective action more appealing than institutionalized resolution channels.

Organizational control and management. The organizational design of the gig platform further intensifies grievances and increases the appeal of collective contention. As the gig platform largely automates control and management, GPCs do not develop any social relationship with management personnel. What they interact with instead is the “cold” technological interface. Although GPCs use the apps to interact with platform companies, similar to Uber drivers in the United States (Rosenblat and Stark 2016), GPCs encounter difficulties trying to speak to platform representatives. As Shi told me:

I tried many times, but they’d never responded to me. Last time when they changed platform rules, I contacted them to complain. I was not the only one. In the end, couriers became angrier and angrier. We had to do something else to get our voices heard.

Indeed, GPCs share similar frustration about not being able to solve their problems through apps or local offices. Frustration and anger escalate grievances. In most of the collection actions that I analyzed, GPCs contacted platform companies but did not get any meaningful responses. Then they realized it would be implausible to address their grievances through contacting platform companies.

The disengagement of platform companies also means GPCs have relatively free spaces to mobilize solidarity and organize collective action, mostly online but also offline (Polletta and Kretschmer 2013; Tassinari and Maccarrone 2020). GPCs express their anger and sense of injustice in social media groups. I saw GPCs rename their social media groups as a “labor union” even though they could not form a formal labor union according to Chinese law. Many couriers discussed the importance of solidarity with online statements like: “We must have solidarity to defend our interests, brothers. Otherwise, we’ll continue to be exploited by the platform.” Some couriers then began to organize collective action offline. To be sure, the platforms try to undermine such online organizing. In some cases, after local offices found GPCs were organizing a protest via social media groups, they deactivated organizers’ app accounts and asked social media companies to block those groups. Nonetheless, GPCs were still able to form new groups.

Collective contention. A collective action occurred mostly when GPCs believed gig platforms decreased remuneration drastically by changing algorithms or when platform offices notified GPCs of new platform rules and simply cited the platform’s contractual right to do so. Usually, a core group of GPCs—those with existing interpersonal relationships—initiated a strike or protest. They did so in the absence of assistance from grassroots labor NGOs or government-organized trade unions. Consistent with findings in previous sociolegal studies (Levitsky 2008), experience and knowledge matter. GPCs with experience working in the manufacturing sector played a crucial role in organizing such collective actions. Core organizers tended to be those who completed a huge amount of orders every day. Decreasing rates and changing rules cost such workers hundreds of RMB daily. Core organizers’ attempt to improve their work situation is understandable, given that so many do not want to return to the manufacturing sector and do not have a feasible alternate career plan.

Here, I use a series of strikes and protests in Chongqing in 2018 to illustrate a typical mobilization process in “free spaces” online and offline. The core organizers belonged to a close-knit group. Tang, a 23-year-old GPC, recounted how his group organized a strike after Meituan announced a change in dispatch and disciplinary rules:

We only had four people in the beginning. We became friends through a WeChat group. Four of us hang out after work twice to three times a week. When we saw couriers get angry in social media groups, we discussed in a BBQ place and decided to organize a strike ... I saw how people in my factory went on strikes. They got what they wanted. [Me: Why didn’t you talk to Meituan or go to the court or the labor bureau?] A lot of couriers already expressed their discontent to Meituan, but Meituan didn’t respond. No one knows how to file a legal complaint under such circumstance. What we write would not be accepted by the court.

Tang’s quote is consistent with my previous analysis about how the legal and organizational dimensions of control influence GPCs’ perception of different “branches” in the “dispute trees” (Albiston et al. 2014).

Tang and his friends then made banners and signs featuring messages such as “despotic clauses,” “resist exploitation,” “stop taking orders,” etc. They chose these terms because other GPCs had

used them in WeChat groups, where Tang and his friends recruited participants. Meanwhile, they visited several restaurants since the latter also suffered from asymmetric contractual relations with Meituan, especially increasing commission fees. Three restaurant owners lent their support not only by hanging banners saying “resist monopoly, resist Meituan” and “resist despotic clauses,” but also by providing GPCs with free meals to show solidarity. The core group further sent out a message warning couriers that if non-striking gig couriers were seen delivering food during a strike, their tires would be slashed. One core member organized a ten-person patrol team to this end.

After the strike and protest began in a plaza, GPCs uploaded screenshots of their delivery app to social media groups to further mobilize participation. They proclaimed their own “offline” status with comments like: “Hundreds of brother couriers are offline. Don’t be a bad apple. Our patrolling team is sanctioning bad apples on the street” and “We’ve determined not to be exploited by evil capitalists. Long live the working people!” Since GPCs often join multiple social media groups, information spread quickly across numerous social media groups and GPCs who worked for different companies. Some non-participants encountered violence for disregarding warnings. Faced with potential sanctions, several GPCs decided not to work and, instead, went to protest sites as bystanders. Tang was surprised by what happened:

Initially, we had a strike in our district and drew about 100 couriers, but it soon spread to five other districts and lasted for a week. In each of the subsequent strikes, I saw 50 to 80 couriers. We initiated a strike against Meituan, but the strikes also attracted Ele.me couriers.

Most participants were full-time GPCs, who were more dependent on platforms. One part-time GPC told me, “it [the protest] isn’t my business because I have a real job.” He also said he was not as angry as full-time couriers as his stake was low. This finding resonates with literature that shows how economic dependency influences work experiences (Schor and Attwood-Charles 2017; Schor et al. 2018).

Eventually, GPCs sieged one of Meituan’s local offices in Chongqing for hours. The core members told Meituan’s local office specific demands concerning platform rules and remuneration. Zhang, a 20-year-old GPC with high school education, recalled that moment:

Finally, we saw those people [the management] who've never responded to us. Four to five people came out from the office. They are all in their twenties, just like us. You can tell they are *college graduates*. The manager is a *woman*. They were so scared and cannot say anything to couriers. Although they did not tell us, we found they increased the rate. They also sent out a notice to withdraw the new platform rules...After the protest, Meituan did not decrease the rate for eight months, but they deactivated a few participants' accounts.

Zhang's quote also reveals class and gender boundaries between the management and couriers and the awkward absence of interaction when GPCs eventually encountered management.

It is their singular focus on the optimization of the platform system that makes the gig platforms' local offices ill-equipped to address grievances and resistance. This tendency was evidenced by Meituan's attempt, in September 2019, to install more restrictive dispatching rules in Chongqing, despite the strikes in 2018. When many GPCs threatened to initiate another strike, Meituan finally gave up trying to install the new rules. Many GPCs were happy to see Meituan change its plan under such pressure, but they also recognized their inability to oversee the platform and actualize such threats regularly.

I was interested in why GPCs joined a collective action rather than simply finding another job and why they dared to join a collective action, considering potential police suppression. Several GPCs told me they joined the collective action because the platform companies are so despotic and their rules are so unfair. Anger and a strong sense of unfairness, rather than an instrumental calculation about the potential pros and cons of collective action, prompted some GPCs who were not core-organizers to join a collective action. Fang told me how such sentiment drew him into a protest: "I went there because the relationship is so unfair. I didn't know if we can change the situation, but I had to go because I was so angry." In fact, several GPCs felt puzzled when I asked why they went protesting instead of finding another job. They said they might find a job sooner or later because they did not plan to be a GPC for a long time, but they still wanted to teach platform companies a "lesson." My finding thus resonates with research that shows collective action frames can go beyond calculations and are often based on moral imperativeness (Morgan and Pulignano 2020).

A few couriers told me they were just bystanders. One GPC remarked: “When other couriers and I knew some gig couriers went on a strike in a plaza from social media groups, many of us immediately dashed to the site. We felt curious and wanted to see what happened.” Interviewees who described themselves as bystanders shared the same sentiment as other GPCs, but they emphasized their need to make money to sustain their lives. Nonetheless, the presence of bystanders did escalate collective action. Not surprisingly, GPCs who decided not to join a collective action talked about needing to make money and thought such collective action would not work.

Asked about why they were not afraid of police suppression, many GPCs said they were just bystanders or pretended to be bystanders; they did not think the police would arrest them as there were a lot of people there. Participants who joined the protests in Chongqing in 2018 said the police took away only a few participants and told them organizing a strike or protest was illegal. Most of my interviewees did not seem to be intimidated by the police.

In sum, under the gig platform, technological control and management leads to grievances and perceived injustice. This dimension of control and management overlaps at times with, and is reinforced by, legal and organizational control and management, generating moments of escalation. GPCs’ injustice frames (i.e., the illegitimacy of contracts) and the organizational design of the platform architecture make institutionalized dispute resolutions and individual informal legal mobilization seem implausible to GPCs. The platform companies’ focus on managing the platform system rather than couriers further renders free spaces available for GPCs to turn moments of escalation into moments of collective action and solidarity.

DISCUSSION AND CONCLUSION

This article is among the first attempts to study collective contention in the food-delivery platform economy in China. It joins recent efforts to analyze labor process and contention in the platform economy (e.g., Tassinari and Maccarrone 2017, 2020). Building upon literature that suggests incorporating data about management’s perspective in analyzing labor process in the platform economy (Veen et al. 2019), this study examines a variety of data, including interviews with not only workers but also management personnel, a lawyer, and an engineer. As such, it

provides a multi-perspectival account of how platform companies and their franchisees control and manage the labor process. Specifically, I have demonstrated how platform architecture—technological, legal, and organizational dimensions of control and management—influences labor process and critical mechanisms for collective contention. I have also shown that when different dimensions of control reinforce each other in escalating grievances and perceive injustice and increasing the appeal of and spaces for collective action, moments of collective action and solidarity are more likely to emerge.

Before discussing the contribution of this study, I first address two analytical issues. The first concerns the 87 cases of collective action that I collected. As mentioned previously, the data is limited in its exhaustiveness. To strengthen the reliability of my analysis, I examined the 87 cases along with interviews with couriers and management personnel. Results from the three sources of data are consistent. Data triangulation thus strengthens the reliability of my findings. The second issue is a partial alternative explanation. As mentioned, some GPCs worked first as SPCs and only switched to the gig platform once they became more familiar with their local area. This suggests SPCs and GPCs might have different levels of skill or characteristics due to the self-selection process. As shown in Table 1, SPCs and GPCs have similar demographic characteristics and prior employment history. Furthermore, after careful examination of data, I do not find SPCs and GPCs have different capability to participate in collective contention. In short, evidence does not support the alternative explanation.

This study makes three major contributions. First, it proposes the theoretical concept of platform architecture to capture not only the technological, but also the legal and organizational aspects of labor control and management, as well as the relationship among these different dimensions of control. As such, the study deepens extant scholarship that focuses on algorithmic control and management (Goods et al. 2019; Griesbach et al. 2019; Rosenblat 2018; Rosenblat and Stark 2016; Wood et al. 2019) and sheds light on the variable ways in which these distinct dimensions of control and management operate, interact, and shape the labor process jointly.

Second, the study demonstrates and explains emergent collective action and solidarity in an unlikely setting. Recent scholarship suggests that work relations under platform economies can be analyzed through the lens of labor process theory (Veen et al. 2019). Although labor process

theory is insightful for analyzing control and management, it does not provide a comprehensive framework for analyzing workers' responses, especially how workers construct and react to grievances. This study contributes to the literature by integrating labor process theory with sociolegal studies and literature on collective action. As such, the theoretical framework helps to analyze how the technical, legal, and organizational dimensions of platform architecture can shape collective resistance through influencing the construction of grievances, the appeal of collective contention vis-à-vis other responses to grievances, and access to free spaces for collective action. Although work is atomized and workers share neither workspace nor employers within the gig platform (Webster 2016), I show how gig workers mobilize to contest gig platforms. Following literature that suggests we focus on moments of escalation (Atzeni 2009; Fantasia 1988), I demonstrate that when different dimensions of control reinforce each other, moments of escalation are more likely to evolve into moments of collectivism and solidarity.

My findings contribute to a more nuanced understanding of the emergence and characteristics of solidarity in the platform economy. Similar to Tassinari and Maccarrone's (2019) work, I find expressions of solidarity—mostly, as couriers discuss similar grievances against platform companies in relatively free spaces, and subsequently participate in collective action. But I also examine the cross-cutting, uneven, and contested characteristics of such solidarity, which reveal both the potential and the limitations of solidarity. On the one hand, gig couriers working for one platform company can mobilize support and solidarity from restaurant owners and couriers working for the other company. Such cross-cutting solidarity has not previously been documented by studies of collective action in the platform economy. I further provide evidence that some solidarity can prompt compromise from gig platform companies. On the other hand, my finding also reveals the uneven and contested nature of solidarity (Beck and Brook 2000; cf. Tassinari and Maccarrone 2020). I uncover variation among gig workers in terms of their solidarity with other workers and involvement in collective action. Indeed, core actors in collective action share strong solidarity and support. Beyond core actors, however, many GPCs are united only by their shared animosity to the platforms. As a result of shared sentiments, potential sanctions, and curiosity, many GPCs showed up at strikes or protest sites, but only as bystanders. Some non-participating gig workers even encountered threats and violence.

Third, my finding about the legal design of platforms goes beyond the conventional concern with the employee-versus-independent-contractor classification (Kenney and Zysman 2016; Vallas 2017; Veen et al. 2019). This study suggests the need to attend to how the enormous difference in contractual power between platforms and couriers intensifies couriers' sense of injustice and exploitation. As such, it contributes to literature on the role of contractual relationships in the market economy (Suchman 2003).

Questions might arise as to why employment classification is not a major concern for couriers in China, considering that it is often an important issue in other contexts (Kenney and Zysman 2016). In China, one major difference between workers with and without an employee status is that the former are entitled to social insurance protection according to labor law, but the latter are not. Given the weak enforcement of labor law in China (Gallagher 2017), both SPCs and GPCs understand that employers in the service sector rarely purchase social insurance for workers. Therefore, SPCs do not expect to have social insurance, despite their employee status. Given this absence of a real difference between SPCs and GPCs in terms of social insurance, GPCs are not focused on employment classification.

What matters more in grievance construction is how couriers perceive the predictability and fairness of their legal relationships. Under the service platform, labor contracts help to stabilize labor relations. SPCs have clear expectations and feel that their employees are constrained by contractual terms and labor law, at least regarding salary. Therefore, SPCs' injustice and collective action frames only reveal a legal contradiction—the violation of contractual terms or labor law. No one challenges the legitimacy of the legal order based on contracts and labor law. In contrast, under the gig platform, the contractual design enables and assists intense algorithmic control and management by giving platforms unbridled legal and technological power. Legal scholars have been long concerned with the problems associated with “clickwrap agreements” (Hubley 2016; Smith 2016) and asymmetric contracts (Roppo 2009). My analysis shows that when gig platforms exercise their unbridled contractual power to change platform rules, workers not only discern this power but also consider it and the rules made by such power to be “despotic.” Importantly, GPCs can mobilize GPCs who work for the other gig platform and restaurant owners to join collective action since they all suffer alike from asymmetric contractual power and share similar injustice frames. This finding is relevant beyond the Chinese context. As

Stewart and Stanford (2017) point out, Uber has a similar contractual design with couriers in Australia. In addition, UberEats and GrubHub in the United States have leveraged their market and contractual power to charge restaurants increasing commission fees.⁶ The Chinese case shows that injustice frames based on asymmetric contractual power can contribute to cross-cutting mobilization and solidarity.

Finally, it is important to discuss the generalizability and limitation of this study. This article focuses on the labor process. Many of my findings about the relationship between platform architecture and collective resistance can be generalized to other contexts. As I have discussed throughout the article, there are many similarities in how gig platforms exercise technological, legal, and organizational control and management across contexts—in China, America, Australia, and Europe. Nonetheless, processes and factors beyond the labor process—from state regulation to political regime, trade union activity, differentiation of labor forces, and labor market—can influence labor contention (Burawoy 1985; Collier et al. 2017).

To help to evaluate the generalizability and limitation of my findings, I specify the following contextual characteristics of the Chinese case. First, the Chinese state has made little effort to restrain monopoly power or initiate antitrust investigations (Huang 2019). In contexts where the state does not fare well in overseeing market power, platform companies can have more unbridled contractual power in strengthening legal and technological control, which could generate a stronger sense of injustice. Second, platform workers do not have high expectations regarding social insurance protection in China. Platform workers in countries where people have higher expectations on job security and social welfare might have different injustice frames. Third, the Chinese case is characterized by its weak civil society, absence of independent labor unions, and authoritarian context—all of which make organizing collective action more restricted. For one thing, gig workers in China focus only on strikes and protests. In contexts where workers have more freedom and assistance from civil society actors and labor unions, collective action could be easier and manifest in various forms. For example, lawyers and civil society actors can help to bring institutional changes through influencing the court and regulatory agencies (Collier et al. 2017). Finally, platform workers in China share similar demographic

⁶ <https://www.boston.com/news/restaurants/2020/05/19/delivery-fee-cap-boston-grubub>, retrieved July 27, 2020.

characteristics. In contexts with a large internal division among workers, it might be more difficult for platform workers to organize collective action (Tassinari and Maccarrone 2020). The limitation of this study also points to the need for future research. Efforts should be made to examine how factors beyond the labor process influence platform architecture and its relationship with labor contention.

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