

# The High-Speed Digital Nomads Trapped in the System: Food Delivery Workers of Meituan

Jiaru Tang<sup>1, a, \*</sup>, Zhengqing Yan<sup>1, b</sup>

<sup>1</sup>School of Media and Communication, The University of Melbourne, Victoria Melbourne, 3010, Australia

<sup>a</sup>Corresponding author: Jiaru Tang (Email: jiarut@student.unimelb.edu.au), <sup>b</sup>zhengqingy@student.unimelb.edu.au

**Abstract:** This article studies the temporality of platform labor through the specific lens of Meituan, the leading food delivery platform in China featuring an algorithm-driven dispatch system. This paper widens the existing research on platform labor from the perspective of time and speed. The on-demand food delivery service cultivates consumers' expectations of timely satisfaction, nonetheless, it builds upon the rush, strictness, and flexibility of digital labor's temporality which is often called a "mission impossible at times". With the rhetoric of 'Flexible work hours,' the platform acts as an intermediary in the contradictory costumer-rider temporal relationship and prioritizes the customer's position within the temporal orders, where ICTs such as real-time tracking systems play a key role in sense-making. As the article will show, Meituan's ETA (Estimated Time of Arrival) algorithm distributes the common interests of efficiency with the "invisible hand of value," in the quaternary relation between riders, customers, suppliers, and platform. While workers' time experience and negotiating ability are diminished, the platform gains the ultimate capacity to exploit platform labor systematically. The coordination of all platform algorithms normalizes class divisions and unequal power structures, interpreting the asymmetrical power between capital and labor in the platform economy.

**Keywords:** Algorithm, China, Digital labour, Food-delivery worker, Platform Economy.

## 1. Introduction

Acceleration is the symbol of contemporary capitalism (Wajcman, 2014). Many scholars have criticized how the control of time is intertwined with power in modern society (Chen & Sun, 2020; Wajcman & Dodd, 2016). As the last decade has witnessed a significant boom in the platform economy, scholars have recognized that compared to traditional lifelong employment, platform labor is characterized by its computer-based operation system, which is served to adapt to the mechanism of rapid commodification of digital capitalism (Umer, 2021). However, besides the successful functioning of the platform economy, the systematical exploitation of physical platform labor, especially food delivery labor, has become an incisive social issue in many countries (Chen & Sun, 2020; Umer, 2021). Existing studies on food delivery workers mainly focus on the unequal working condition of this liberalism work form (Shu, 2022). Nonetheless, the perception of time and speed has not been widely discussed in the research on digital labor (Chen & Sun, 2020). This study aims to widen the existing research on platform labor and its temporality through zooming into the food delivery workers (riders) of Meituan - the leading food delivery platform in China, which is reported to have over 4 million riders in 2020 (Meituan, 2022).

This essay is organized as follows: The first section will discuss the contradictory time experience of costumers and riders and how the real-time tracking system intermediates it. To have a better understanding of the phenomenon, the second section will delve into the alternation from human time to networked time (Hassan, 2020) and acceleration (Rosa, 2013) in food delivery through a closer look at the platform's core algorithm. Given the coordination of the whole platform system, the third section will trace the root of the algorithm-based temporal orders - power relations. This study thus argues that the contradictory time experience

embodies in food delivery platform is the new interpretation of asymmetrical power between the capitals and workers in the age of platform economy. In other words, the ultra-fast algorithm-driven service is the old fashion of capitalist exploitation making a comeback in the digital era.

## 2. The Dualism of Time-saving and Time-consuming

The food delivery platform is the epitome of the particular expectation of time in the high-speed society. In 2018, Meituan boasted an average delivery time of 30 minutes, along with 24-hour delivery to make "speed" as its brand upgrading strategy (Meituan-Dianping, 2018). Besides, the "on-time insurance" service provides consumers a partial compensation from the first second of delay. The predictable and controlled on-demand service cultivates consumers' expectations of timely satisfaction with their individual needs (Chen & Sun, 2021). However, the convenience and rapidity are built upon the strictness of riders' working time. Meituan implements a strict on-time policy to ensure the completion of each order within 40 minutes with an overtime rate of less than 5%. While the average income is 7 to 9 RMB (US\$1 to US\$1.3) per delivery, riders failing to complete the delivery on time can incur a fine from 2 to 500RMB (US\$70 approximately) depending on the delay time and whether the customer made a complaint (Chen & Sun, 2021).

Early in 1981, Lewis and Weigert noted that time is experienced differently among different social groups. This principle is still applicable in the digital age. While customers enjoy the convenience of immediate gratification, the food delivery service is often called a "mission impossible at times" by riders (Chen & Sun, 2020; p.1562). The peak time for food delivery is often around lunch and dinner time. During the rush hours, riders need to navigate the traffic congestion by every means to keep their delivery on time in commitment. Chen and Sun (2020; p.1569) used the term "fragmented rush"

to describe riders' work time: rushing is the normality, disruptions and delays are menaces. Thus they need to constantly weigh up whether and how to wait.

Another trait of food delivery is flexibility and the temporal of labor. Indeed, food delivery is often conducted as gigs that riders can decide their work time based on their personal needs. Nonetheless, their agency to set the flexible schedule relies on the virtual mediator - platform. Because the principle of food delivery is to make riders' schedules meet the demand of customers' temporal satisfaction, workers' wages are thus calculated by the degree of their effectiveness in meeting customers' timely gratification (Umer, 2021). As the inevitable and unpredictable risk of delay directly results in work uncertainty and income instability, riders of this "just-in-time" labor need to keep themselves constantly available to wait for dispatch, suffering 'a continuous employment relationship without continuous work' (Valenduc & Vendramin, 2016, p.34). As a result, platform workers spend extra time self-monitoring and adapting to the invisible algorithm rules on their guess, resulting in an imbalanced working condition that van Es and Poell dubbed "platform imaginaries" (2020, p.2).

Between the contradictory experiences of time-saving and time-consuming, it is the platform system that mediates the time relationship between customers and riders. On the one hand, the platform prioritizes the customers' position in the temporal orders by providing the on-demand just-in-time service. On the other hand, the platform algorithms design, manage, and manipulate riders' behaviors in these predetermined temporal orders. For instance, the real-time tracking system intermediates the customer-rider temporal relationship through remote control (Snyder, 2016). After placing an order on Meituan, costumers can check the process in meters and minutes on their screen and watch an icon of riders moving from store to destination on the virtual map (Figure 1). While the visibility of wait time represents the privileged position of consumers in the temporal relationship, the time experience of riders is marginalized in this game-like interface (Chen & Sun; 2020). Another example of how the platform mediates the unbalanced time relationship is the delivery-time optimization system. Meituan's delivery-time optimization model is based on three standards: scale growth, profit structure, and user experience, which respectively correspond to the interests of Meituan, food store, and customer (Cai, 2021). That is, while the platform system uses data from riders' performance to improve its computational accuracy, the interests of riders themselves are overlooked in this efficiency-improving process.

In the construction and reconstruction of time experience for both customers and riders, ICTs play a key role in sense-making (Couldry & Hepp, 2016). The legitimacy of customers' immediate gratification is generated through the rapid transmission speeds of ICTs such as the aforementioned real-time tracking system. After legitimating the expectation of immediacy, the highly repeatable delivery tasks then lead to an increase in speed competition among riders who exert themselves for more wages in this "More pay for more work" gig (Shibata, 2020; Meituan, 2022; n.p.). The platform, which seemingly like a bystander in the race, then benefits from the speed competition and shirks its responsibilities with the rhetoric of 'Flexible work hours' (Chen & Sun; 2020; Meituan; 2022). Therefore, the temporal orders that established and manifested by the unassailable platform has become a

prerequisite when workers negotiate their time experience. In other words, humans' relationship with time is now trapped in the framework of digitality.



Figure 1. A screen shot of the delivery route on the customer's app interface (captured by the author)

### 3. Time, Acceleration, and Algorithm

The temporal orders preset by the platform take precedence over other traditional time systems in reality. To make sense of this, we need to think back to the analog-digital binary. In 1929, Heidegger asserted his notion of time 'There is no time when man has not been' (1959; p.64). In human time, time is exist between human and human. We can easily observe time in the rhythms of the city: the traffic lights, moving vehicles, and pedestrians on the road. In the traditional 9–5 workstyle, workers can count the fixed eight-hour work time with distinct on- and off-duty time. Workers can understand their relations with superiors and colleagues through face-to-face communication in human time. Their accumulation-serving activities can also be recognized and understood in a visible way (Hassan, 2020).

A century later, humans become less in control of their own times compared to Heidegger's notion. Networked time, an invisible form of time, is emerging in the digital age. Time no longer exists between humans, but between humans and digitality. Riders' time has been transferred to an estimated number and an icon on the screen (Figure 1), while their human time, which exists in their actual interactions with people and urban infrastructures, has vanished. From placing orders, dispatching delivery, to wages calculation, the whole process is operated in a non-human-scale physical space. In Marx's studies, how humans scale nature to accumulate and

industrialize is still recognizable in a human dimension (Hassan, 2020). Notwithstanding, platform workers' relationship with time is no longer in a human dimension but in an invisible, untouchable, and ineffable digital dimension.

However, the logic of network time is towards the same orientation as Marx's capitalism theory - acceleration (Hassan, 2020). Rosa (2013) identified three dimensions of acceleration in everyday life: technological acceleration, the acceleration of social change, and the acceleration of the pace of life. The most consequential form is technological acceleration, a purposeful and outcome-oriented process that constantly speeds up the production process in the capitalist economic system. As Van Dijk et al. (2018) emphasized the centrality of the algorithm in platform ecosystems, at the nub of Meituan's system is the ETA (Estimated Time of Arrival) algorithm (Cai, 2021). While the traditional inefficient manual dispatch takes half a minute to respond with a high labor cost, this algorithm-driven dispatch system can replace the role of coordinators and maximize efficiency at a lower cost (Cai, 2021). In the ETA system, the purpose of the algorithm is not to optimize a single decision but to maximize the cumulative revenue during a period of operation (Wang, 2020). Despite the fact that each algorithm command affects riders' individual performance-based income, the platform's ultimate goal is undeniably cumulative revenue, thus neglects riders' temporal experience in individual scenes. As a result of the technological acceleration, human interaction has been replaced by algorithm command to speed up the production and maximize benefits, but riders' interests are sacrificed.

The practices of technological acceleration orient to the acceleration of social change, which leads to a reorganization of the labor process (Rosa, 2013). How far and how long will it take to complete the delivery is simultaneously shown on their screens, and riders' work performance is visualized by the platform instantaneously (Figure 1). In this sense, riders not only self-monitor their behaviors (van Es & Poell, 2020) but also need to measure their own productivity level with their cellphones. Anxiety, precarity, and competition are thus intensified and internalized by riders through their wearable devices (Moore & Robinson, 2016). The human slowness, incommunicability, and clumsiness are concealed on the platform; a human being is transformed into digital icon racing incessantly in the virtual street. Just as Rosa (2013) noted that the "change" itself is changing, the form of acceleration has been reshaped in the digital era.

As Wajcman (2014) probed the question of how people adapt to network time and actively construct the new timescapes with digital services, platform labor offers an empirical answer to the paradox. "Timescapes" are time structures formed by the interaction of temporality and spatiality, consisting of synchronizations and desynchronizations, pauses and progressions of actors (Snyder, 2016; p.11). For riders, their bodies need to tailor to the timescapes set by the platform algorithm, which includes sequences of orders, multi-tasking, and estimated delivery time, etc. In Snyder's model, when the situation deteriorates into a "crisis" in that working rhythms are broken apart and alienated, workers will seek to find new plans, new orders, and an entirely new vision for the future (p.13). However, Snyder's concept of disruption remains in the analog workplace; riders who are attached to the digital platform are more isolated and vulnerable as they can not switch off the phone and throw the mobile away to slow down. As the job is

born on the platform, their bargaining agency is weakened. As a result, riders scatter themselves into the networked time and eventually can not exist themselves without digitality.

#### 4. The Power Game in Time Experience

Rosa (2013) took the sheer increase of processor speeds in computers as an example to show the neutral relationship between technological acceleration and social change. Nonetheless, Meituan's ETA algorithm system is being developed with the clear intention of altering the social patterns of relationships in the platform economy. The ETA is the fruit of the capitalization-driven goal of creating a set of priorities for production efficiency improvement. The on-demand service materializes riders' time to serve the immediate satisfaction of customers, extracts time from one class to serve another, thus the platform capitalizes on time through "temporal arbitrage" (Chen & Sun, 2020; p.1566). That is, above the technology, there is a "invisible hand of value" that establishes a value system and embeds it in the platform algorithm (Cai, 2021). The algorithm controls the interest distribution of the quaternary relation among riders, customers, suppliers (food stores), and platforms (Cai, 2021). In this quaternary relation, efficiency is the common pursuit among players. Nonetheless, ETA sets the rules for the game: for customers, ETA provides on-time commitment; for suppliers, ETA optimizes the order structure; for the platform, ETA boosts the production efficiency (Cai, 2021). It prioritizes these players' interests in riders through stipulating delivery time. As a result of this multi-party value game, the algorithm transfer the delay risk to the most vulnerable player in the value system, the riders. Instead of being simply controlled, riders' temporality is under the systematical exploitation imposed by the platform's algorithm.

Digital capitalism is characterized by its direct orientation towards commodification, however, the "flexible capitalism" the platform economy embodies makes this process even more convenient (Schiller, 1999; Snyder, 2016). Unlike the clock-based rhythms like the 9-to-5 job, the non-clock-based rhythm full of flexible schedules and perpetual disruptions fastens the extraction and exploitation of labor's time with the coordination of algorithms: one second after the ETA algorithm sends the tasks, the real-time tracking system starts to monitor and measure riders' performance, and even after the deal is completed, the platform can still draw upon the data extracted from riders for algorithm optimization. The working norm of rush has naturalized by flexible capitalism, making workers almost impossible to negotiate their working rhyme (Chen & Sun, 2020). As mentioned above, the power inequality between workers and the platform is the fuel of algorithm iteration, then the constant-updating algorithm further consolidates the platform's dominant position. Ultimately, the platform wins the supreme power to exert systematic exploitation of workers' surplus value (Cai, 2021). The coordination of the whole platform algorithms makes the commodification process more controllable than ever, whilst workers' time experience is marginalized under the shadow of the algorithm.

Riders used the metaphor "remote witchcraft" to describe the platform - an invisible, untouchable, mysterious force that manipulated each and every move (Shu, 2022). Despite 'platform' is often portrayed as a fair intermediary offering workers a free place to find a job, there is a unseen power

inequality behind. Bauman (1998) criticized capitalist-controlled work, claiming that once capitalists set the goal of conquering nature for profit, the only thing for them to do is shorten the process, making sympathy, care, and mercy at work the most insignificant things. In the context of the platform economy, in what ways and with what consequences has one's relationship with time been changed depends on the position one is situating in the spectrum of power. One's time relationship is the result of his entanglement with the material world, which is infused with power dynamics (Wajcman, 2014). Food delivery worker, a social status born in the high-speed society, is affiliated with the platform to exist. Their job attributes reify and reinforce the platform in this way, making them more passive respondents to the digitality, just like how Urry questioned the instantaneous time that "the 'pace' of life throughout the world has got too fast and is in contradiction with other aspect of human experience" (Urry, 1994; as cited in Wajcman, 2014; p.19). Nonetheless, the companies take advantage of and commodify this contradiction. By developing algorithms as a digital interface to switch reality to cyberspace, human time to network time, the accelerating production process enhances the power of capital to expand and monetize.

## 5. Conclusion

In sum, this study discussion the change of time relationship in digital life in the context of food delivery platform. This study takes Meituan, China's leading food delivery platform, as an example to illustrate the dualism of time-savings and time consuming in the food delivery. The on-demand food delivery service cultivates consumers' expectations of timely satisfaction. However, the convenience and rapidity are built upon the strictness of riders' working time, which makes rush becomes the work norm. Another trait of food delivery is flexibility. Despite the job is portrayed as a gig with flexible work hours, riders agency to set their own schedule is relied on the platform. The platform acts as an intermediary in the contradictory costumer-rider temporal relationship, and because it prioritizes the position of the costumer in the temporal orders, workers' agency to negotiate their time experience is suppressed in the system.

Digitality has shifted human time to networked time in this process. Unlike the analog time in which face-to-face communication is easy to recognize, in networked time, riders' temporality is operated in a non-human-scale physical space. The aim of this time shift is orientated to acceleration. This study takes Meituan's ETA (Estimated Time of Arrival) algorithm to show that in technological acceleration, how human interaction is replaced by algorithm command to speed up the production. The technological acceleration then leads to the acceleration of social change, which reorganizes the labor process. In the new working condition, riders internalize the norm of rush through their interaction with the digital interface. As they trapped in the algorithm-based timescapes, their work time is not given but designed, structured, and rationalized by the algorithm.

The algorithm, which distributes the common interests of efficiency with the "invisible hand of value," is at the heart of the quaternary relation between riders, customers, suppliers, and platform. The coordination of the whole platform algorithms normalizes the unequal power structure and class distinctions in the quaternary relation. With the platform, the commodification process is faster, directer, and more

controllable for capital than ever, whilst workers' time experience is marginalized under the shadow of the algorithm. In this sense, in what ways and with what consequences has one's relationship with time been changed depends on the position one is situating in the spectrum of power. The contradictory time experience the food delivery platform embodies is the new interpretation of asymmetrical power between the capital and workers in the age of the platform economy.

## References

- [1] Bauman, Z. (1998). *Work, Consumerism and the New Poor*. Buckingham: Open University Press.
- [2] Cai, R.F. (2021). An Inquiry into Algorithm Materiality On The Perspective of PEC: Take The Meituan "SuperBrain" System for Example. *Journalism and Mass Communication Monthly*. 2021(11).
- [3] Chen, J. Y., & Sun, P. (2020). Temporal arbitrage, fragmented rush, and opportunistic behaviors: The labor politics of time in the platform economy. *New Media & Society*, 22(9), 1561–1579. <https://doi.org/10.1177/1461444820913567>
- [4] Couldry, N. & Hepp, A. (2016). *The Mediated Construction of Reality*. Cambridge and Malden,MA: Polity Press.
- [5] Hassan, R. (2020). The condition of digitality: A new perspective on time and space. In: Hassan, Robert. *Condition of Digitality: A Post-Modern Marxism for the Practice of Digital Life*, The. London: University Of Westminster Press, 2020: [73]-96. <https://search.informit.org/doi/10.3316/informit.522617596476446>
- [6] Heidegger, M. (1959). *What Is Metaphysics?* Yale University Press.
- [7] Lewis, J.D. & Weigert, A.J. (1981). The structures and meanings of social time. *Social Forces* 60(2): 432–462.
- [8] Meituan-Dianping. (2018). Application Proof of Meituan-Dianping. Hong Kong: MeituanDianping. <http://www.hkexnews.hk/APP/SEHK/2018/2018062202/Documents/SEHK201806250005.pdf>
- [9] Meituan. (2022). [Become a Meituan rider]. [Meituan]. [https://peisong.meituan.com/app/riderRecruitmentFusion/index?cityCode=100000&channelCode=bd187&recruitType=102&bd\\_vid=11310105486776099972#/info](https://peisong.meituan.com/app/riderRecruitmentFusion/index?cityCode=100000&channelCode=bd187&recruitType=102&bd_vid=11310105486776099972#/info)
- [10] Moore, P., & Robinson, A. (2015). The quantified self: what counts in the neoliberal workplace. *New Media & Society* 18(11): 2774–2792.
- [11] Rosa, H., & Trejo-Mathys, J. (2013). *Social Acceleration: A New Theory of Modernity*. Columbia University Press. <https://doi.org/10.7312/rosa14834>
- [12] Shapiro, A. (2018). Between autonomy and control: strategies of arbitrage in the on-demand economy. *New Media & Society* 20(8): 29542971.
- [13] Snyder, B. H. (2016). *The Disrupted Workplace: Time and the Moral Order of Flexible Capitalism*, 1st Edition. Oxford; New York: Oxford University Press.
- [14] Sun, P., Chen, J. Y., & Rani, U. (2021). From Flexible Labour to 'Sticky Labour': A Tracking Study of Workers in the Food-Delivery Platform Economy of China. *Work, Employment and Society*. <https://doi.org/10.1177/09500170211021570>
- [15] Shibata, S. (2020). Gig work and the discourse of autonomy: fictitious freedom in Japans digital economy. *New Political Economy* 25(4): 535551.
- [16] Umer, H. (2021). Illusory freedom of physical platform workers: Insights from Uber Eats in Japan. *The Economic and*

- Labour Relations Review, 32(3), 437–452. <https://doi.org/10.1177/1035304621992466>
- [17] Urry, J. (1994). Time, Leisure and Social Identity. *Time & Society*, 3(2), 131–149. <https://doi.org/10.1177/0961463X94003002001>
- [18] van Es, K., & Poell, T. (2020). Platform imaginaries and Dutch public service media. *Social Media+ Society*, 6(2).
- [19] Valenduc, G. & Vendramin, P. (2016). Work in the Digital Economy: Sorting the Old from the New, vol. 3. Working Paper No. 2016.03. Brussels: European Trade Union Institute (ETUI). <http://hdl.handle.net/2078.1/173373>
- [20] Wajcman, J. (2014). 1. High-Speed Society: Is the Pace of Life Accelerating?. In *Pressed for Time: The Acceleration of Life in Digital Capitalism* (pp. 13-36). Chicago: University of Chicago Press. <https://doi.org/10.7208/9780226196503-004>
- [21] Wajcman, J. & Dodd, N. (eds) (2016) *The Sociology of Speed: Digital, Organizational, and Social Temporalities*. Oxford: Oxford University Press.
- [22] Wang, S.Y. (2020). [Operational research and optimization of Meituan intelligent dispatch system]. [Meituan], <https://tech.meituan.com/2020/02/20/meituan-delivery-operations-research.html>
- [23] Schiller, D. (1999). *Digital capitalism : networking the global market system*. MIT Press.
- [24] Shu, K.R. (2022). [Mobile media survival: mobile interactive interface in platform labor -- a field survey based on "food delivery"]. *Shanghai Journalism Review*(2), 13.