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Digital Taylorism, Alienation of Responsible Autonomy, and Ethical
Dilemmas Faced by Knowledge Workers in China's Internet Service
Industry: Preliminary Research Findings

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Abstract

The research aims to explore the forms of digital Taylorism experienced by knowledge workers in the Chinese internet service industry and how the way they work and their attitude have changed in response to the algorithm-based control. This developmental paper presents the preliminary findings of an ongoing qualitative research exploring the forms and impacts of Digital Taylorism experienced by knowledge workers in China's internet service industry. Drawing on qualitative data obtained from ethnographic non-participant field observations and semi-structured interviews, the findings reveal how algorithm-based real-time performance monitoring, the performance-based compensation system, along with the traditional Chinese culture that promotes the spirit of dedication, erode workers' perceived degree of control and internalised sense of responsibility, leading to the alienation of responsible autonomy and exposing them to complex ethical dilemmas.

Keywords: *Digital Taylorism, Responsible Autonomy, Ethical Dilemma, Sousveillance, Knowledge Worker*

Word Count: 2043

1. Introduction

The past decade has seen the digital transformation of workplaces, which leveraged new technologies to achieve extreme efficiency and productivity (Altrock *et al.*, 2024). Algorithms are at the core of the new management paradigm which extends the logic of task standardisation and specialisation, monitoring, and control from assembly to knowledge work, known as digital Taylorism. While Digital Taylorism has enabled unprecedented scalability and operational precision, it has also introduced profound challenges for knowledge workers, such as the erosion of autonomy, weak innovation abilities, and increased stress and burnout, as a result of overly datafication of work and the intensification of performance control (Liu, 2023; Gautie *et al.*, 2020). China's internet service industry serves as a critical context for examining these phenomena because it is characterised by intense competition, relentless demands for efficiency, and the pervasive use of digital tools to monitor and optimise worker performance. Building on the foundational framework established in the first developmental paper submitted to this conference last year, this paper presents preliminary findings that highlight the existence of digital Taylorism that I have obtained from field research.

2. Theoretical framing

This study is grounded in three key concepts that collectively provide a solid theoretical foundation for exploring the impacts of Digital Taylorism on knowledge workers: Digital Taylorism, Responsible Autonomy, and Sousveillance. These concepts illuminate the interplay between technological control, worker autonomy and welfare, and their responses in digitally mediated workplaces.

First, Digital Taylorism refers to the digitalised Taylorism management style (also known as scientific management) in which digital technologies decompose, optimise, and control the labour process and monitor workers for the purpose of maximising efficiency and productivity (Park & Ryoo, 2023; Staab & Nachtwey, 2016). As an extension of 'surveillance capitalism' (Zuboff, 2019), Digital Taylorism emphasises on extracting data on workplace practices and utilising them through algorithms and data analytic technologies to ensure control over the labour process and efficient flow of goods required for the accumulation of capital (Liu, 2023).

Second, responsible autonomy as an alternative to direct control refers to the balance between granting workers freedom to make decisions while ensuring accountability for outcomes (Friedman, 1977). In knowledge work, autonomy fosters innovation (Burcharth *et al.*, 2017) and also improves satisfaction and well-being (Tahar *et al.*, 2023). However, in the context of Digital Taylorism where control and surveillance practices are becoming more a capillary than an overt force, workers suffer the paradox between increasing autonomy at work and the increased surveillance coming from digital technologies, algorithms, and intensified performance metrics. This paradox exposes workers to a series of negative outcomes like the endless self-exploitation and increased blurring of work-life balance (Liu, 2023; Han, 2015). Knowledge workers are working within a digital panopticon (Aloisi & De Stefano, 2022), and

the intangible surveillance solution may trigger serious affective and behavioural resistances, known as *sousveillance* behaviour, which is the third main concept of this study. *Sousveillance* describes employees observing or turning the digital gaze back on their manager for the purpose of resisting management instructions and protecting themselves (Taylor & Dobbins, 2021). Social media and other digital platforms provide the terrain for *sousveillance* behaviour while simultaneously problematising employment relations (Taylor & Dobbins, 2021).

Digital Taylorism, responsible autonomy, and *sousveillance* are three interrelated concepts and are worthy of greater study because they provide a holistic understanding of the tensions between control and autonomy, power and resistance, and efficiency and creativity in the digital age. This is particularly important as workplaces are continuously evolving with advancements in algorithms, AI, and data analytics. My research project is one of the few studies that apply these concepts to explore and explain how digitalised management solutions impact Chinese knowledge workers' experience in the workplace.

3. Methodological approach and research settings

This study employs a qualitative research approach since it is explorative in nature. The qualitative methodology comprises two in-depth organisational case studies in the Chinese internet technology sector, combining semi-structured interviews and ethnography. This method is capable of capturing the experiences, perceptions, and behaviours of workers in their work environments and provides rich, in-depth insights into how digital management practices shape their daily lives (Roller & Lavrakas, 2015). The case study approach allows for an in-depth analysis of the interplay between knowledge workers within the organisational setting, while ethnography complements this by enabling a deeper understanding of the historical, cultural and social contexts that shape their perceptions, reactions, and behaviour (Yin, 2018; Hammersley & Atkinson, 2019). The combined method is efficient in providing a holistic view of the targeted phenomenon, capturing both the macro-level context and the micro-level, everyday experiences of individuals. It also allows for data triangulation, where multiple sources of data are used to cross-validate findings (Farquhar et al., 2020).

This study employed a combination of ethnographic observations and semi-structured interviews to collect primary data. My doctoral research project plans to include two case companies (anonymously named as case Alpha and Beta), and at the current stage, non-participant observations were conducted over a two-week period in the case company Alpha located in Henan province of China from August 12, 2024, to August 22, 2024, during which the researcher immersed himself in the working environments to observe the physical environment (includes offices, meeting rooms, dining area, coffee bar, and other public areas), daily routines, labour interactions, and organisational practices. Additionally, the researcher also interviewed 27 knowledge workers (most of them were operators with a bachelor's degree or above who manage several live streamers) from the company Alpha (see Table 1 for the demographic information of the participants). The semi-structured interviews were carried out around four themes of this study: digital technologies used in management, responsible

autonomy, sousveillance behaviour, and any possible impacts of hierarchy on autonomy paradox. By integrating these methods, the study achieved a triangulated dataset that captures both the observable manifestations of digital Taylorism and the subjective interpretations of those directly affected, thereby enhancing the depth and validity of the preliminary findings. Before data collection, this study underwent a rigorous ethical review by the ethics team of the University of Birmingham.

Table 1: demographics of participants

Demographic		No.	%
Gender	Male	19	70.4
	Female	8	29.6
Age Group	18-25	2	7.4
	26-35	18	66.7
	36-45	6	22.2
	46 +	1	3.7
	0-1	11	40.7
Years with the organisation	1.1-3	7	25.9
	3.1-5	5	18.5
	5+	4	14.8
Hierarchy of roles	Manager	4	14.8
	Staff member	23	85.2

4. Preliminary Findings and Discussions

4.1 Ethnographic observation findings

Ethnographic observations in the Company Alpha showed that the office area adopted a panoramic prison-style layout, and tens of cameras were placed, making workers never quite know when they were being observed. The workers seemed to have internalised these measures and performed appropriately to align with management's expectations. KPIs were reviewed on a daily basis based on the backend live streaming data, and the communication between the operator and streamers was typically face-to-face. A typical workday of an operator starts with reviewing the sales data from the previous day's broadcasts. They would retrieve backend data and analyse the metrics such as product sales, customer engagement rate, and revenue, to assess the performance of each live streamer. After the review, the operator communicated directly with the live streamers to provide feedback and discuss the previous broadcast. This conversation often involves understanding the streamer's perspective on what worked well and what could be improved, as well as any technical challenges faced during the live stream. The operations team then collaborates with the streamer to strategise for upcoming streams, discussing product promotions, key messaging, and potential audience engagement tactics. They worked collaboratively toward the balancing act of optimising the live-streaming experience for viewers while ensuring the business objectives were met.

The company never forced workers to work overtime, and they usually had a high degree of autonomy in arranging their own work. However, working overtime was the norm at all levels. Notably, we observed that managers work much longer every day than normal staff. They were usually the last ones to leave the office, and many of them even slept in the offices during sales seasons. Operators and streamers may complain about issues like low traffic during their break time conversations, and no other apparent sousveillance behaviour was observed in the office area, contrasting findings from previous research (e.g. Moore, 2019; Joyce & Stuart, 2021). The company never initiates layoffs, but the employee turnover rate was high. Underperforming operators or streamers voluntarily left the company without compensation due to the low salary or the sense of ‘guilt’. To make it clear, ‘Leaving/Exit’ was the most dominant resistance behaviour under digital Taylorism.

4.2 Interview findings

In this study, I found rich evidence demonstrating the alienation of responsible autonomy under digital Taylorism. The interviews revealed that employees at all levels have a certain degree of autonomy in terms of work schedules and decision-making. However, knowledge workers' autonomous ways of working were captured by new processes that monitor interactions (e.g. between the operations manager and their liver streamer or between live streamers and customers) and outputs (e.g. sales data) in real-time. They were subtly constrained by KPIs, which are closely tied to their salaries. Like invisible shackles, these KPIs and the backend data that were automatically generated by the algorithms continually drive employees to work overtime voluntarily. This finding coincides with prior studies (e.g. Zhao & Wu, 2023; de Vaujany *et al.*, 2021) on the issue of the autonomy paradox, which highlighted that knowledge workers got increased flexibility and autonomy in their work at the expense of stable employment and social protection.

“Each operator has individual sales and revenue target (KPI) which is generally set based on last year's performance and the latest industry trends, in collaboration with the senior manager. ... and we would break down the target to the live streamers. We eliminate underperforming live streamers and recruit and train new ones only to make sure that the performance targets can be met.”

----- Participant A-11

The algorithm-based real-time performance monitoring system, which is directly tied to the salary system, combined with the traditional culture that advocates hard work and dedication, as well as Chinese workers' constant pursuit of productivity, efficiency, and success, imposes endless moral constraints on employees, pushing them to work overtime voluntarily and internalised the pressure to endless 'self-exploitation' instead of resistance. This finding resonates with the philosopher Byung-Chul Han's argument, which states that the shift from a society that was once characterised by external pressures (e.g. authority, discipline, and commands) to one driven by internal demands (e.g. self-actualisation, sense of social

competition), has resulted in self-exploitation and widespread feelings of exhaustion and burnout (Han, 2015). Hard-working and selfless dedication are moral imperatives to most Chinese workers, leading to the autonomy paradox. For example:

“No mandatory overtime, but the company's goal is undoubtedly to make money, and everyone is an adult and knows that. If the performance targets aren't met, they themselves would feel too embarrassed to leave work (on time).”

----- Participant A-3

Another notable finding is that the alienation of responsible autonomy was top-down: the higher the status of knowledge workers within an organisation, the more severe the alienation of their responsibility and autonomy. Though there was no rule or standard of working, managers suffered unlimited responsibility to align their autonomous decisions with stringent performance targets. Such paradox was further reinforced by the traditional Chinese culture, which emphasises ‘role models’ and ‘teaching by example’, encouraging managers to influence others through their own actions. For example:

“The live streaming industry is experiencing escalating competitive pressures. You can't stay aloof and ignore the needs of your streamers ... You definitely need to think more, work harder, and maintain a collaborative relationship with them and help them improve their performance.”

----- Participant A-27

5. Conclusion and future research

My doctoral study investigates the impacts of digital Taylorism on knowledge workers and selected two companies from the Chinese internet service industry as the target of case study. The research has been ongoing for one year and a half, and this developmental paper discusses the main findings from the preliminary research. Ethnographic observations in the case company helped to demonstrate the existence of digital Taylorism within the targeted workplace, though the workers seem to be unaware of being monitored. I found rich evidence demonstrating the alienation of responsible autonomy. The algorithm-based performance monitoring system, the salary system, along with the traditional culture that advocates hard work and dedication as well as Chinese workers' constant pursuit of productivity, efficiency, and success, lead to the autonomy paradox. Notably, the alienation of responsible autonomy was top-down. At present, research to consolidate the hierarchical phenomenon of autonomy paradox is missing, and I will explore this further in my future research.

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