

On the impact of algorithmic management on the determination of personal subordination

Qi'nan Cui

School of Comparative Law, China University of Political Science and Law, Beijing, China

nann64805@gmail.com

Abstract. In platform-based employment, algorithmic management is embedded in the labor process through mechanisms such as order dispatch, pricing, evaluation, rewards and punishments, which poses interpretive pressure on the traditional determination of personal subordination centered on explicit command, fixed workplace and direct management. Starting from the traditional judgment logic of personal subordination and combining the theory of Weisungsrecht (right of instruction) in German law, this paper points out that algorithmic management does not eliminate personal subordination, but reconstructs the exercise form of the right of instruction in a technical and depersonalized manner. The determination of personal subordination in platform-based employment should shift from the identification of specific instructions to the investigation of structural domination and real autonomy, and take traditional elements such as working hours, workplace and organizational integration as supplementary or corrective factors to enhance the operability of labor relationship determination.

Keywords: algorithmic management, personal subordination, right of instruction, labor relationship, platform-based employment

1. Introduction

In recent years, the forms of labor employment in China have shown a significant trend of diversification. Among them, the platform-based employment economy relying on internet platforms has expanded rapidly and has become an important channel for absorbing labor force. Platform-based employment is characterized by high flexibility and low entry threshold, which has alleviated employment pressure to a certain extent. However, its labor security system is not yet mature, and the labor relationship determination standards and rights protection paradigms constructed by traditional labor law face many challenges when applied to platform-based employment. The current labor law mainly takes the subordination theory as the core path for determining labor relationships, and allocates corresponding labor rights and interests on this basis. However, in the context of platform-based employment, labor management methods have shown significant technical and indirect characteristics. Algorithms play a key role in links such as order dispatch, pricing, evaluation, rewards and punishments, making the traditional criteria for determining personal subordination and economic subordination difficult to apply directly. Academic circles have conducted relatively sufficient discussions on issues such as whether platform practitioners have personal subordination and whether the digital conditions

provided by platforms constitute means of production and form economic subordination. Existing studies can be roughly divided into three categories: First, starting from the criteria for determining labor relationships, discussing the application and reconstruction of the subordination theory in platform-based employment; second, starting from the path of rights protection, introducing concepts such as "incomplete labor relationship" [1-3] and trying to seek protection solutions between labor relationships and civil relationships [4]; third, starting from algorithmic regulation, focusing on algorithmic transparency, platform responsibility and procedural protection for workers in new forms of employment. It is worth noting that although the above research paths are not exactly the same, most views still recognize the core position of personal subordination in the analysis of platform-based employment; even the views advocating the localized reconstruction of the subordination theory usually do not deny the basic function of personal subordination [5]. The problem is that most existing studies directly point to the conclusions of labor relationship determination or rights protection from the normative level, and there is still room for further disassembly on how algorithms change the mode of labor control in specific labor management links and then affect the formation mechanism of personal subordination.

In practice, the determination of personal subordination is often vague. The third batch of typical labor and personnel dispute cases jointly issued by the Ministry of Human Resources and Social Security and the Supreme People's Court [6] demonstrated the basic path of judging labor relationships based on the subordination theory in the form of cases. This batch of cases has certain reference significance for platform-based employment disputes, but the expressions such as "whether it exists", "stronger" and "weaker" used are still relatively general and difficult to be directly transformed into stable and unified objective standards [3]. Admittedly, platform-based employment has the characteristics of large industry differences, complex employment chains and fragmented labor forms, so it is difficult to establish a unified standard applicable across industries through several cases. This paper does not attempt to propose a standard paradigm that can cover all platform-based employment scenarios, but hopes to provide a more refined analytical premise for normative construction and judicial judgment. Therefore, it is necessary to further explain: in what way does algorithm affect the structure of personal subordination? In this sense, it is necessary to analyze the specific impact of algorithmic management on the determination of personal subordination starting from the operation mechanism of algorithms.

2. The traditional judgment logic of personal subordination

2.1. The theory of personal subordination

The theory of personal subordination can be traced back to the determination of the concept of "employee" in German law. Germany does not have a unified labor code, and the normative basis of labor relationships is scattered in the *BürgerlichesGesetzbuch* (BGB), *Gewerbeordnung* (GewO) and other special labor laws. Among them, § 611a BGB¹ stipulates the concepts of labor contract and employee in a general manner [7, 8], and places personal dependency at the core of the judgment. This article does not stipulate the full connotation of personal subordination in a closed enumeration way, but emphasizes the nature of labor activities and the actual situation of contract performance, requiring an overall judgment based on all relevant circumstances. In other words, German law does not provide a mechanized determination formula at the legislative level, but points out the core direction of judgment through an open normative structure; its specific connotation

¹ § 611a Bürgerliches Gesetzbuch.

depends on the continuous development of judicial practice and legal theory [9].

2.2. The right of instruction

A core feature of personal subordination is Weisungsrecht (right of instruction), that is, working under the direction of the employer (Weisungsgebundenheit), which can be understood as the right of the employer to conduct employment management and labor arrangement [10]. In practice, the right of instruction is usually manifested in the employer's determination of workplace, working hours, working methods and work content. Although the specific forms of the right of instruction vary according to the nature of the industry and the characteristics of the post, the fact that the employer makes pre-regulations on work tasks through labor contracts, rules and regulations or organizational arrangements so that there is no need to issue instructions one by one during the performance process does not necessarily negate the existence of the right of instruction. In essence, the right of instruction does not require the employer to issue orders in real time, specifically and individually; pre-structured behavioral arrangements may also constitute the exercise form of the right of instruction. This judgment logic centered on the right of instruction but rejecting formulization has strong explanatory power in traditional labor relationships based on "person-to-person management"; however, when the exercise mode of management right undergoes a technical transformation, whether its explanatory power is still sufficient becomes an unavoidable question.

3. How algorithms reshape the manifestation of personal subordination

3.1. Algorithmic management as "pre-structured right of instruction"

In the platform-based employment economy, algorithms have become an important tool for platforms to organize and control the labor process. Platforms realize the arrangement of labor task distribution, labor methods, labor locations and labor hours through algorithms, which has real-time and dynamic characteristics and is different from the static provisions on workplace, working hours, working methods and work content in traditional labor contracts or labor regulations, thus causing difficulties in element judgment to a certain extent. However, as mentioned earlier, the key to the judgment of the right of instruction does not lie in whether it is manifested in a fixed and mechanical command form, but in whether the labor process of the worker is dominated by the rule structure set by others in advance. In this sense, algorithmic management may essentially form management over workers [4]. For example, in the food delivery industry, a typical platform-based employment scenario, the labor tasks of delivery riders are usually dispatched by algorithms, and the delivery routes are also planned or strongly guided by algorithms. Workers' behavioral options are preset by the platform and they can only act within the scope allowed by system parameters. The degree of constraint on workplace and working hours needs to be distinguished among different types: full-time riders, dedicated delivery riders and crowdsourced riders. The former are often subject to continuous constraints from stations, regions and shift scheduling, while the latter have greater flexibility in online time and order acceptance choices. Further from the result side, the evaluation mechanism and remuneration calculation method are also preset by algorithms, including delivery unit price, task completion evaluation and order dispatch priority, which will reversely shape workers' behavioral choices [11, 12]. Therefore, algorithmic management does not necessarily constitute the right of instruction in the sense of labor law; only when the platform exerts substantive control over the distribution of labor opportunities, behavioral evaluation and income formation through algorithmic rules, and makes it difficult for workers to deviate from the expected behavior mode of the platform without bearing systematic adverse consequences, can algorithmic management present a highly stable and persistent pre-structured right of instruction.

3.2. The reshaping of the traditional manifestation of the right of instruction by algorithmic management

As mentioned earlier, algorithmic management actually undertakes the function of the right of instruction, but its specific presentation form is obviously different from the traditional right of instruction. This difference leads to the fact that the instruction function of algorithmic management is easy to be ignored in practice, and also creates certain obstacles and vague intermediate zones for the determination of labor relationships. Therefore, it is necessary to clarify how algorithmic management reshapes the traditional manifestation of the right of instruction.

First of all, algorithmic management realizes the transformation from explicit command to implicit discipline. In the traditional right of instruction, the labor contract stipulates the right of the employer to arrange the content of labor payment, and the worker has the obligation to accept the employer's instructions, management and labor arrangements; the consensus in the labor contract constitutes the legitimate basis for the employer's right of instruction, and the labor contract itself constitutes an important normative basis for the right of instruction [10]. Under the traditional model, workers can usually easily identify the source of labor instructions and be aware that they are in a state of being commanded and managed. However, in the context of platform-based employment, there is often no direct labor contract relationship between platform practitioners and platforms, or the labor contract relationship is covered by forms such as outsourcing and cooperation agreements. Correspondingly, the explicit management directly made by employers in the traditional sense is often replaced by the rule system dominated by algorithms. Workers seem to accept orders and complete tasks independently according to platform rules on the surface, but their labor process has actually been continuously shaped by algorithmic management [2]. This phenomenon does not mean the disappearance of the domination relationship, but indicates that the exercise mode of the right of instruction has been transformed from explicit command to implicit discipline. In other words, the right of instruction is no longer mainly manifested through specific orders or written clauses, but is embedded in the labor process through the continuous shaping of labor behavior, labor rhythm and income expectation by algorithmic rules. Algorithmic management obscures the direct presentation form of the right of instruction through the intermediary role of technical rules [5], making it difficult for workers to identify it as a command from a specific subject. Thus, the right of instruction does not disappear, but is embedded in the labor process in a depersonalized and technical way.

Secondly, algorithmic management makes the right of instruction present as continuous control. In German labor law, the right of instruction is usually understood as a management right exercised through specific acts, and its function is to supplement the incompletely determined content of the labor contract. § 106 GewO² is not a norm for determining labor relationships, but its normative structure that employers can further determine the content, location and time of labor within a reasonable discretionary scope [10] reveals the important significance of the right of instruction for understanding personal subordination; relevant precedents of the Federal Labor Court³ also often take the possibility of instruction and actual instruction acts as important clues for judging the personal dependency of workers [5]. In this sense, the traditional right of instruction does not always operate in an explicit way, but exists in a triggerable right form, and its exercise usually has relatively clear event-based characteristics. Algorithmic management has changed this mode of existence: platforms embed labor rules, reward and punishment mechanisms and task distribution logic into

² § 106 Gewerbeordnung.

³ Federal Labor Court of Germany. (2000, September 20). Judgment 5 AZR 61/99, NZA 2001, 551.

the continuously operating algorithm system, so that the right of instruction no longer relies on specific and individual command acts, but plays a continuous role in the labor process through an automated rule structure [13, 14]. Thus, platforms can continuously guide and restrict labor behaviors through a pre-set and real-time operating rule system.

Finally, algorithms transform the right of instruction from command logic to incentive logic, but do not eliminate the domination relationship. Instead, they achieve the same behavioral constraints through institutionalized inducement. In the traditional right of instruction, the structure of the right of instruction is clear and specific, requiring clear subjects, objects, forms, contents and consequences, which is highly identifiable in law. In the context of algorithmic management, these structural characteristics are diluted. Taking consequences as an example, they are replaced by indicators such as order dispatch priority, scoring mechanism, order acceptance rate and delivery rate [4], which essentially form a restrictive effect under the appearance of "incentivizing riders". Intuitively, algorithms do not command workers, and it seems that domination is out of the question. But when workers' behavioral boundaries are constrained so narrowly that they have to "voluntarily" make choices in line with the platform's interests under rational calculation, this choice is only a formal freedom and cannot conceal the behavioral constraints behind it [5].

To sum up, in the context of platform-based employment, algorithmic management does not negate the existence of the right of instruction, but reconstructs its operation mechanism through technical and institutionalized methods. The right of instruction no longer relies on identifiable command acts, but is embedded in the labor process with a continuously operating rule system, exerting a stable and profound impact on workers' behavioral choices. However, the judgment path of personal subordination still highly relies on the identification of specific instruction acts, clear domination subjects and explicit management methods.

3.3. The reshaping of the internal structure of personal subordination by algorithmic management

Through the analysis of the right of instruction reshaped by algorithms, it is not difficult to see that personal subordination is no longer mainly manifested as obedience to external commands, but is internalized into a self-discipline mechanism through workers' continuous adaptation to algorithmic rules. Workers' behavioral choices seem to be made independently, but in fact they are guided to the track expected by the platform in a highly structured institutional environment.

Furthermore, algorithmic management has also changed the presentation mode of the element of "personality" in personal subordination to a certain extent. Under the traditional model, workers obey the will of specific employers or their managers, and the domination relationship has a clear personality orientation. Under algorithmic management, domination is not directly reflected as the expression of the will of a natural person or organization, but plays a role through a depersonalized and technical rule system. What workers face is not an identifiable domination subject, but system rules in the form of scores, weights and order dispatch logic. This mode of domination does not eliminate personal subordination, but obscures the direct appearance of the domination subject through technical intermediaries, making personal subordination present a depersonalized form.

Against this background, the traditional judgment path of personal subordination centered on "whether there are specific instructions" has been difficult to fully capture the domination structure under algorithmic management. Compared with whether there are clear commands, a more explanatory judgment standard lies in: whether workers have the real possibility to deviate from the expected behavior mode of algorithms without bearing structural adverse consequences. When workers are in fact unable to independently arrange

their labor behaviors outside the framework set by algorithmic rules, their personal subordination is not weakened due to the lack of explicit instructions, but is strengthened in a more concealed but stable way.

4. Reordering of the elements for determining personal subordination under the background of algorithmic management

Through the analysis of the right of instruction and personal subordination under the influence of algorithmic management, it can be seen that algorithmic management does not necessarily weaken personal subordination in labor relationships. In the case where the platform has substantive control over the distribution of labor opportunities, behavioral evaluation and income formation, algorithmic management may instead strengthen workers' personal subordination, but this subordination is hidden through being embedded in the labor process, thus increasing the difficulty of identification. The traditional judgment centered on "whether there are specific instruction acts" has insufficient explanatory power in platform-based employment. However, it should be admitted that personal subordination still has decisive significance in the judgment of labor relationships. We cannot give up the determination of personal subordination due to the difficulty of judgment, but should adjust its identification method. Therefore, it is necessary to reorder the functional positioning of the elements for determining personal subordination under the background of platform-based employment and algorithmic management [3, 5]. It should be noted that the so-called "reordering of elements" does not mean adding new determination elements outside the existing theory of personal subordination, but adjusting the position, function and interpretation focus of the existing elements in the judgment under the background of algorithmic management. In other words, this paper does not deny the significance of traditional elements such as the right of instruction and organizational integration, but tries to make the theory of personal subordination respond to the domination structure formed by algorithmic management by changing their position in the overall judgment structure.

The traditional judgment path starts with "whether there is an identifiable right of instruction", and its underlying presupposition is that workers' personal subordination is mainly reflected through the explicit command-obedience relationship. However, when labor management is continuously embedded in the labor process through algorithmic rules and the domination relationship is no longer manifested as event-based commands, continuing to take "whether there are specific instruction acts" as the primary concern of judgment is difficult to fully reveal the domination structure in labor relationships.

Therefore, under the background of algorithmic management, the judgment of personal subordination needs to shift from the identification of specific instruction acts to the investigation of whether the labor process is dominated by a rule system set by others and operating continuously. Specifically, a progressive judgment structure can be formed: first, it should be investigated whether the platform continuously sets the labor process through algorithmic rules, including task distribution, labor routes, evaluation systems, reward and punishment mechanisms and income formation methods; second, it should be investigated whether workers have the real possibility to deviate from this rule system without bearing systematic adverse consequences; finally, combine traditional elements such as working hours, workplace, organizational integration and management subjects to supplement or correct the above judgment. Such a judgment structure is not divorced from the theory of personal subordination, but answers in what new form personal subordination exists under the background of algorithmic management. Even in the absence of face-to-face management or specific instruction acts, as long as the labor process itself is in a stable rule structure set by others and forms continuous constraints on workers' behavioral choices, the existence of personal subordination cannot be easily denied [2].

5. Conclusion

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