Occupational Injury Protection Systems for New Forms of Employment Workers from a Marxist Philosophical Perspective

Jiaying Chai *

Department of Philosophy and Sociology, Lanzhou University, Lanzhou, China

* Corresponding Author Email: chaijy2023@lzu.edu.cn

Abstract. New forms of employment spawned by the platform economy modify traditional models, yet the work injury insurance system—as a reflection of work relations within a standard employment model—exposes these contradictions and demands institutional innovation. Most of the existing studies have been of a legal and economic nature and lack a critical look from a philosophical point of view. This paper sets out to introduce a Marxist philosophical approach as a theoretical framework to understand new exploitative capital forms in the digital age. While focusing on the problem of occupational injury protection of new forms of employment workers, it proceeds through a literature review contesting the current state of research and logically proceeds with an analysis based on the theories of alienated labor, surplus value, and social reproduction. The results show that this problem does not cause a systemic technical error but, rather, the necessary outcome of exploiting surplus value and structural contradictions imposed by capitalist logic. It indicates solutions to such problems. This study is to introduce a critique of the Marxist political economy into the labors of the digital economy, providing a theoretical grounding and practical guidance on how locally tested pilot programs can be unified into a single system that guarantees workers' essential rights and dignity.

Keywords: Occupational Injury Insurance for New Forms of Employment, Marxist Philosophy, Critique of Political Economy.

1. Introduction

Due to the rapid growth of the global economy, new forms of employment, such as the sharing and gig economies, based on internet platforms, have provided many flexible job opportunities, like food delivery and ride-hailing services. These new forms of employment are highly flexible and with uncertain labour relations, which have made the traditional work injury insurance system, based on standard employment relations, already outdated and ineffective. Thus, they call for systematic review and refinement. At present, countries across the world are seeking means by which to adapt their systems of occupational injury protection to these emergent forms of employment. While scholarship takes diverse theoretical approaches to the question, there seems to be general recognition of the need for institutional innovation and a nascent discussion of what such an innovation might entail. However, current studies predominantly focus on macro-level institutional design while neglecting micro-level implementation aspects, and they exhibit insufficient research on emerging risks in the digital age, such as algorithmic harm. Moreover, existing research perspectives remain largely confined to jurisprudence and economics. Consequently, this paper adopts a Marxist philosophical approach to examine occupational injury protection for workers in new employment forms. It employs a literature review to systematize existing research, then applies Marxist philosophy to conduct an in-depth analysis of the predicament faced by workers in new employment forms and the logic of platform capital. This analysis elucidates the reasons for the failure of traditional protection systems. Finally, the theoretical analysis is concretised to propose practical policy recommendations.

2. Literature Review

Academic research on occupational injury protection systems for new forms of employment workers generally follows a three-dimensional framework of "problem-solution-dilemma",

progressing from problem definition and description to in-depth institutional design. All studies and discussions begin with defining the employment relationship of these workers. Scholars recognize significant differences between the new characteristics exhibited by workers in these models and those of traditional labourers. However, two main perspectives exist on how to define this employment relationship. Some scholars contend that the concepts and criteria for traditional labour relations are not entirely obsolete and can still encompass online platform employment relationships [1]. They argue that new forms of employment relationships are fundamentally a form of subordinate employment labour, thus advocating for the expansion or redefinition of labour relations within the existing legal framework to bring them under the protection of labour law [2]. Another perspective contends that the relative independence of new forms of employment differs from the subordination characteristic of traditional labour relations. The institutional framework of traditional labour relations is ill-suited to fully accommodate new formats. Consequently, it is imperative to transcend the traditional labour dichotomy, designing new systems based on actual subordination to avoid the loss of distinctiveness and competitiveness in new formats that would result from direct classification as labour relations [3, 4].

Internationally, two approaches exist for defining "employees" in new forms of labour relations. The United States has reconstructed standards within its "binary framework", employing the "right to control" and the "economic reality test". A 2019 federal opinion classified gig workers as "independent contractors" rather than employees [5]. While independent contractors have a lot of freedom, they have no access to the traditional benefits of employment [6]. The alternative approach introduced the idea of "third-class workers" Germany's quasi-employees, UK's workers, and Singapore's platform workers [7]. It frames the kind of protection tilted towards a particular category of workers in the middle between dependent and independent labour [8]. In this sense, the ILO suggests that the term "dependent contractors" would be an appropriate designation for those who are legally independent but economically and personally dependent on one or very few clients or platforms. It provides them with universal, effective, and adequate social security coverage [9]. Empirical cross-country studies of gig economies show that gig workers classified as employees enjoy significantly higher coverage rates of health benefits than those classified as independent contractors. This legal distinction is translated into welfare provisions, but also large statistical significance in occupational safety standards [6].

Occupational injury protection systems for new employment models have different nation-based approaches. In Germany, for instance, a predominant social insurance model coexists with a guiding philosophy whereby prevention is primary, rehabilitation is prioritized, and compensation is an additional measure—an all-incumbent chain of protection. Compulsory insurance through the Workers' Compensation Insurance Association applies to workers under new employment models. This would consider post-incident compensation but chiefly focus on pre-emptive prevention by investing in safety guidance and re-employment training to reduce overall societal costs [10]. The Dutch model is a commercial insurance system, greatly influenced by free-market thinking. New economy workers are insured by commercial insurers, with premium levels and benefits entirely subject to the decisions of the insurance industry. Neither the state nor the platform companies have, in principle, any occupational injury liability; workplace risk-reducing workers must independently purchase occupational injury insurance in the commercial insurance market. A few hybrids innovative models have also emerged, neither entirely relying on traditional workers' compensation systems nor entirely on commercial insurance [11]. For example, pilot schemes are conducted in China's Zhejiang Province, aiming to build novel occupational injury protection systems based on new economic model features.

Recent studies have taken a similar tack, considering real-life problems following theoretical applications. Indeed, based on policy evaluation and effectiveness analysis, the issues of occupational injury protection systems for new economy workers are considered universal. They include problematic procedures for recognized injuries, insufficient coverage, and fragmentation. Most importantly, the fast-paced digitalization of technologies meant that occupational health hazards

would be more than just traditional workplace accidents. For instance, an increase in algorithmic control by platforms has led to overlooking workplace safety risks, such as the risk of traffic accidents resulting from the absence of direct employer surveillance. Existing health and safety at work legislation also contains considerable regulatory gaps with respect to developing new digital risks, which range from a variety of psychological harms to others [6,7]. What is truly required is a new comprehensive occupational injury protection system.

3. Analysis and Interpretation from a Marxist Philosophical Perspective

3.1. The Erosion of Labourer Agency and Existential Dilemmas Under Algorithmic Control

In the Economic and Philosophical Manuscripts of 1844, Marx set out four features of alienated labor: under capitalism, the worker is alienated from the process of labor, from the product of labor, from his own being, and from other workers [12]. When man sets in motion the natural forces within himself to act upon and transform the natural world around and within himself, this activity of force is under his control [13]. On the other hand, under contemporary employment relationships, the platform employs algorithms to manage the process of labor-for instance, in order-allocating and delivery route planning-placing workers in a position where they passively execute the algorithm's dictates and thus estranging them from control over their labor and autonomy. Workers then become algorithmic slaves when the labor process turns into an external, coercive force estranged from their essence [12]. Further, the product of labor- the final service output remains with the platform for appropriating and controlling; thus, the workers cannot make full remuneration from it, nor control or directly determine the use value or exchange value of the fruits of their labor. This further deepens the estrangement of the producer from the product. The platform drains the agency of the workers, who thus must pass through processes and rating systems. With a grain of time, the dignity and creativity of the workers wear down. It cuts through human autonomy and free activity, stripping it down to a means for physical survival [12]. Every accepted order, each way cleared, and each star rating becomes survival data quantification, dissolving human dignity and creativity into calculable performance metrics. Besides, lack of rudimentary protections for workers, either from high-intensity labor-for instance, delivery workers-or high-risk environments, such as those of ride-hailing drivers, rob them not only of basic human rights but catapults them into passive positions.

3.2. Surplus Value Exploitation and the Logic of Platform Capital

Surplus value comes from the inequality between the value labor commands as a commodity and the value workers produce under the direction of capital during the labor process. In short, it is the part of value created by laborers above their wages and appropriated unreturned to them by capital. Platform capital, through new forms of employment, has not held off its legal social insurance responsibilities, broadly deemed incomplete labor relations, as previously discussed in its classification of practitioners as independent contractors. It shifts the risks of occupational injury to the workers themselves. This is an exploitative device for trying to lower labor costs and maximize surplus value extraction. Capital always tries to push the costs of reproduction, everything from health care to insurance, outside its bounds to keep up high rates of exploitation. The nonexistence of systems of protection against occupational injury bears witness to capital's evasion concerning the costs of social reproduction. It becomes deeper control of the labor process through algorithmic optimization and data surveillance, increasing the opacity and efficiency of that exploitation. Thus, the absence of protections against occupational injury in these new employment forms is the result of a very logical deepening of exploitation in capitalist form.

3.3. Manifestation of Crisis in Reproduction: The Absence of Safeguards, Ideological Contradictions, and State Regulation

The theory of social reproduction poses a cardinal question regarding how a society, specifically capitalism, doesn't only take part in material production but continues its very existence into

subsequent generations. To this, Marx was able to level two forms of production: the reproduction of labor power-meaning workers must work again every day and continue to be capable of raising the next generation of workers, including the intergenerational transfer and accumulation of skills [13]. The reproduction of social relations-whereby capitalism reproduces not only commodities and surplus value, but crucially the class relation between capitalists and workers [14]. At the end of each production cycle, workers remain destitute proletarians dependent for their survival on selling their labor power, while capitalists remain exploitative owners of the means of production. This social relationship gets reproduced and reinforced over and over again. Returning to analyzing gaps in occupational injury protection within new economic models, workplace harm is not an individual risk for laborers but rather a rupture within the entire reproduction system of society. When workers cannot work because of occupational injuries, labor power reproduction is impeded, thereby undermining the whole socio-economic system. In addition to this, platforms promote slogans like "you are your own boss" and "more work, more pay", leading workers to see themselves as self-financing "partners". Their actual subordinate position and reproduction responsibilities that capital should absorb are thus obscured.

Moreover, this is also endorsed by the current work injury insurance system. It tacitly accepts legal definitions that inadvertently reinforce a social consensus of non-employees' unprotected status. This legally weakens individual claims for protection in social perception terms by positioning workers within new employment models. Functionally speaking, the state- as an "ideal general capitalist"- has the task of ensuring that the general process of social reproduction allows for the long-term stability of the system itself in a primary sense. This, of course, requires a guarantee for the continuous reproduction of labor power. From this perspective, the state has an interest in sustaining new-economy workers within the workers' compensation system through legislation to "stitch" up labor reproduction fractures. These, however, contain contradictions and obstacles to the extent that capital will usually resist anything that adds to its costs. This is why many arguments have been made concerning the limited results given to the commercial insurance model in current pilot schemes. If this model meets a demand on the part of capital toward the individualization of costs, it defeats the broader purpose of securing long-term stability for society.

3.4. Structural Contradictions Between Traditional Social Security Systems and New Production Relations

The failure of traditional work injury insurance systems has left workers in new economic models operating in a "grey zone" outside the mainstream social security net [15]. This stems from contradictions arising between the transformed economic base and the lagging superstructure. The rapid development of the platform economy has fostered new production relations, were capital, through algorithmic control, can command labour without requiring legal employment contracts. This has created a new model where capital controls labour without employing workers. As part of the superstructure, the traditional work injury insurance system requires explicit employers, fixed workplaces, and stable working hours. When the new economic base has become widespread, the rigidities inherent in the old superstructure prevent it from recognizing these new production relations as eligible for coverage. Thus, the failure of the traditional work injury system is not merely a technical oversight, but a systemic, structural failure of the superstructure to evolve alongside the economic base.

4. Policy Recommendations

4.1. Restoring Workers Agency in Digital Production

As analysed in the preceding discussion, the newly found alienation in the new employment models of workers necessitates re-embedding the agency of workers at the core of production relations to resolve this issue. The platform economy must consider the input of representatives of the workers when setting up core standards such as order-dispatching mechanisms and reward/penalty

rules. Huge algorithmic changes must be subjected to a prior joint review at government and tax authority levels, enabling trade unions to negotiate collective agreements [16]. Second, social credit scoring mechanisms should include the performance of platforms in occupational safety duties, thus restricting the application of pure calculative capitalist reasoning [16]. Third, platforms must inform workers and trade unions about the relevant parameters of the algorithms in a transparent way; in other words, they should open the "technical black box." Otherwise, they will continue to give rise, to risks linked to an increase in occupational injuries [16]. Finally, the state should actively use digital technology in creating a national occupational injury database, based on an Australian National Dataset for Compensation-based Statistics (NDS) model [17]. It will enable real-time monitoring of the type of injuries and time for recovery in new industries and periodic assessment of institutional effectiveness across platforms and regions. This is the measure that will take humanity one step closer to gaining control of technological power within the digital labor era disproportionate to its needs.

4.2. Establishing a Social Security System Based on Actual Control

The occupational injury protection regime is appropriately established as compulsory social insurance instead of commercial insurance. It is an extension and supplement to the work injury insurance system in the digital era [18]. It reveals that the concept of occupational injury protection should reside within the mutual aid and solidarity principles of social insurance, with its public service characteristics [19]. For this reason, it will create a safety net on this issue [18]. Nevertheless, the occupational injury risks related to new economy workers are well beyond what government social insurance can contain. Thus, a multi-stakeholder collaborative governance model should be used to provide an ultimate solution for safe working environments and occupational risk protection for workers [16]. To reduce platform capital's risk transfer, one should go beyond the paradigm of traditional labour relationship recognition and establish a principle based on actual control. Thus, platforms cannot be exempt from liability because, in their economic relations, workers are provided with autonomy. Even though new economy workers maintain formal independence regarding order acceptance and working hour arrangement, the platform's soft control through rating systems and the reward/penalty mechanism intensifies management over the workforce [15]. Therefore, algorithmic interventions in which platforms take part imply order acceptance rate determination constitute a specific form of control over labour, which immediately engages the platform's liability as a responsible subject. Hence, it should pay social insurance contributions proportional to real earnings in pension, medical, work injury, and unemployment benefits. International evidence suggests that safety interventions at the organizational level are more effective than those at the individual level [20]. The state takes on this challenge of actively playing the role of regulator, which it will fulfill by assuring policy support and technical assistance to enterprises, nudging them toward better safety management systems and increased investments in practitioner working conditions. This approach prevents the emergence of societal risks arising from the spontaneous operation of platform capital.

4.3. Advancing Legal Reforms for Occupational Injury Protection in New Economic Models

As the superstructure's core element, legislation needs to be responsive to the elements of change both in the productive forces and their relations. Afterward, relevant laws regarding protection against occupational injuries for workers within these new economic models shall be most suitably amended to engive foundational support for the institutional embodiment of specific eligibility rights [19]. Literature has identified that the only psychosocial factor relating to occupational injury is work stress [20]. Considering the new modalities of work in which employees are subject to new risks of a psychological nature—such as algorithmic pressure, complaints from clients, and income instability—the definition of emerging occupational risks should be proactively carried out within the scope of legislation. This should provide legal recognition to terms such as "algorithmic discrimination," "algorithmic oppression," and "algorithmic deprivation" under the heading of occupational injury. In parallel, there should be actions aimed at developing an appropriate occupational injury protection management system within the framework of these new economic

models. Such a system will have to provide in its transparency the core element stipulations on insured persons, contribution standards, and benefit levels.

5. Conclusion

The logic of the protection of workers' occupational injuries in the new economic forms has, through a lens of Marxist philosophy, been scrutinized in this study. This conceptual dilemma is not at all a problem of technical oversight in institutional design but rather becomes evident as an inexorable outcome of surplus value exploitation and structural contradictions within a capitalist logic. Therefore, all this impels one towards a solution that lies beyond traditional recognition of labor relations: to restore workers' agency, build a social insurance system, and continue retyping, developing relevant legislation on new economic models, thus achieving regulation of capital logic. This paper helpfully fills the literature gap regarding the application of philosophical analysis as an in-depth critique tool in this field for better understanding and conceptualization of new forms of capital exploitation during the so-called digital era. It provides reference points for relevant law revision and management measure formulation regarding occupational injury protection in a new economic model. The present study, however, has some limitations. The "black box" nature of platform algorithms, which are considered trade secrets, makes it impossible for external researchers to access core parameters and decision-making logic, constraining in-depth deconstruction of the mechanisms of algorithmic harm. Moreover, the new forms of at-work mobility and geographical distribution, combined with the lack of nationally unified standards and data collection for the recognition of occupational injuries, impede empirical analysis across data gaps. Future studies will be devoted to the integration of platform ethnography and in-depth interviews with workers to garner empirical evidence. It could also form the basis for an interdisciplinary analysis under a Marxist frame by aggregating state-of-the-art findings from the philosophy of technology, sociology, and even jurisprudence. Longitudinal studies in representative regions might yield more robust evidence toward advancing occupational injury protection systems for new forms of employment-from theoretical conception to institutional implementation.

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